CASE 1394: Case called by OCC, at request Ralph Lowe, et al., to consider reduction of allowables in Gladicia Pool, Lea County.

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Appliestion, Transcript,
5 mell Exhibits, Etc.

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 13, 1958

IN THE MATTER OF: Case No. 1394

TRANSCRIPT OF PROCEEDINGS

DEARNLEY - MEIER & ASSOCIATES INCORFORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 13, 1958

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission of New Mexico, at the request of Ralph Lowe, et al., to consider the reduction of allowables in the Gladiola Pool in Lea County, New Mexico.

Case 1394

BEFORE:

Mr. A. L. Porter, Jr. Mr. Murray Morgan Governor Edwin L. Mechem

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: The next case to be considered will be Case 1394.

MR. COOLEY: Case 1394: In the matter of the hearing called by the Oil Conservation Commission of New Mexico, at the request of Ralph Lowe, et al., to consider the reduction of allowables in the Gladiola Pool in Lea County, New Mexico.

(Recess.)

MR. PORTER: The meeting will come to order, please. Just a minute, Mr. Buell. Mr. Errebo wants to make a statement at this time.

MR. ERREBO: If it please the Commission, with regard to Case 1053, the previous case, is Mr. Joiner here from Magnolia?

Dearnley - Meier & Associates Incorporated General Law Ret offices Albuquerque, New Mexico 3-6691 5-9546 Mr. Joiner advises me that he has made a telephone call to his office and they advise him that the Sunray agreement has been received, signed.

MR. PORTER: Before we get into the case we have just announced, Case 1394, I would like to make an announcement concerning Bisti, the rehearing on the Bisti case. The Commission feels that we wouldn't have time to complete the docket this afternoon. We will try to complete this Case 1394 and possibly the nomenclature cases and continue the Bisti rehearing until 9:00 o'clock in the morning, and we will reconvene in the Highway Building out on Cerillos Road. The rehearing case will not be taken up this afternoon.

We will take up now Case 1394. Mr. Cooley.

MR. COOLEY: Are there any appearances in this case?

MR. QUINN: John Quinn of Hobbs, representing Ralph Lowe.

MR. COOLEY: Any other appearances?

MR. BUELL: For Pan American Petroleum Corporation, C. L. Kelly, J. W. Brown, Dan Currens, and Guy Buell.

MR. WEBB: Layton Webb, attorney for Sinclair Oil and Gas Company. I would like to enter an appearance.

MR. ERREBO: Burns Errebo with Sunray-Midcontinent. I would like to enter an appearance.

MR. KELLAHIN: Jason Kellahin, Kellahin and Fox, representing Hancock Oil Company.

MR. COOLEY: Any other appearances?

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 MR. PORTER: Mr. Buell.

MR. BUELL: May I be permitted to make a very short statement for Pan American?

MR. PORTER: Yes, sir.

MR. BUELL: Pan American is the operator of thirteen wells in this pool. I would like to say at the outset that we are opposed to the reduction below the normal unit allowable because in our opinion it is not justified from the standpoint of conservation, and certainly not from the standpoint of correlative rights. We're in this unusual position, if the Commission please, in this pool as in other pools where our interests are substantial, from the standpoint of reservoir studies; we have continuous studies in progress at all times. Certainly this pool, with our substantial interest in it, we try to stay right on top of it. For that reason we are able to say at this time that in our opinion no waste has occurred or will occur producing at the normal unit allowable.

We are in the position, though, of having to ask for a short continuance due to the fact, the unusual nature and the manner in which this hearing was called; due to the short time interval, we haven't had time to prepare formal exhibits or testimony to present, although from the standpoint of studies of the reservoir, we are right on top of it; so we would like to urge that a short continuance be granted of at least two weeks, to enable us to prepare our formal exhibits and our testimony so that we can present our side of this case.

DEARNLEY - MEIER & ASSOCIATES INCORFORATED GENERAL LAW REPORTERS ALBUQUERQUE NEW MEXICO 3-6691 5-9546 MR. QUINN: John Quinn, representing Ralph Lowe. We have no objection to a continuance as far as I know, except that we would want to put on testimony here in order to support the emergency order which was granted, allowing the lower allowable, and also testimony to support possibly an interim order until the time that the Commission may set for a continuance. We believe that our evidence will show that a permanent order should be issued by the Commission on the lower allowable figure or some similar figure which was set by the emergency order. As I understand Mr. Buell's motion, he has all of his information here at this time, since he was on top of the situation, but he doesn't have his exhibits. If he has his information here, then it seems to me that he should present his information and data which he now has to the Commission, because of the fact that the Exhibits will only serve to clarify the data which he may have.

MR. BUELL: May it please the Commission, apparently I left the wrong impression on Mr. Quinn. I didn't mean to. From the standpoint of needing time for a complete reservoir study, that isn't necessary, but to correlate our data, to arrange it in a presentable form to the Commission so that it will justly reflect our position as the facts warrant, that is what we are asking for. Due to the short time interval between the notice of the hearing and today, in all fairness I believe we are entitled to it.

MR. QUINN: I would like to ask Mr. Buell if he intends to introduce data at that time which he may obtain subsequent to

this date, or do you want to correlate the data you now have and make exhibits to present to the Commission?

MR. BUELL: Mr. Quinn, it will always be Pan American's position, I hope, to present to the Commission the very latest and most current data available. I hope that answers your question.

MR. QUINN: We have no objection to that.

MR. PORTER: The Commission will withhold the decision on the motion made by Mr. Buell until after Mr. Quinn for Lowe has presented their testimony, and any other interested parties have had a chance to cross examine the witness. Mr. Quinn, will you proceed?

MR. QUINN; Since you have delayed ruling on the motion, at this time, I would like the record to show then that I will not agree to continuance prior to the time that we put on our evidence.

MR. COOLEY: I don't understand.

MR. QUINN: I believe I made the statement that I would agree to the continuance when it was made, but since we are going forward with the evidence and present evidence at this time, we intend to present evidence to the Commission of necessity for a permanent order, I'll state then that I will not agree that the continuance should be made at that time. Now Mr. Buell will renew his motion, I presume?

MR. BUELL: Yes.

MR. QUINN: I have a short statement before I put any evidence on, and that is that the applicant intends to show that

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the emergency order which was entered into by the Commission on the 28th of February should be made permanent, and generally we intend to show that the number of wells producing water in the Gladiola Pool has been increasing over a period of the last six months; and on February 21st the Ralph Lowe Lawton State No. 2

Well, which is located in the northwest southwest quarter of 32,

Township 11 South, 38 East, N.M.P.M., commenced producing 100

percent water. Prior to that date the well was capable of producing a top allowable since its completion date, which was on September 19, 1956.

We also intend to show that there is a possibility that the water production from certain wells in the Gladiola Pool is premature, and that this premature water production was caused by the higher allowable of these wells at excessive rates.

Also, as set out in paragraph 5 of the emergency order, that the production of the wells in the Gladiola Pool at the rate authorized for the month of March, 1958, and subsequently be authorized at a higher rate may result in underground waste.

During the period of purchaser prorationing which was had in June, July, August, September, and October of 1957, the production from the wells in the northernmost portion of the pool, which was formerly the North Gladiola-Devonian Pool and which was combined with the South Pool and made the Gladiola Pool, was reduced to an approximate average of 190 barrels of oil, and that during this period the pressure performance of certain of these wells

indicated that production at a lower rate would result in additional ultimate recovery of oil from these wells.

In proving these points which we have stated, we intend to introduce the testimony of only one witness, Mr. Landua, petroleum engineer, and we have six exhibits which will be introduced in the course of the testimony.

HARVIN L. LANDUA

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. QUINN:

- Q Will you state your name?
- A Harvin L. Landua.
- Q Where do you live?
- A Midland, Texas.
- Q Are you a petroleum engineer?
- A Yes, sir.
- Q What are your schools?
- A Graduated from Texas A. and M. in 1938, was employed by the Humble Oil Company for approximately twelve and a half years, the last three years of which was in their reservoir engineering section down in Houston; and since that time have been with Mr. Ralph Lowe in Midland and with the Chemical Corn Exchange Bank in

New York in their Petroleum Division.

Q What is your knowledge, Mr. Landua, of the Gladiola Field?

A I started following Gladiola itself in about 1952 through Oil Conservation Commission records, and started following North Gladiola when it was discovered by Mr. Lowe in *56.

Q Have you made a study of that particular area?

A Yes, we have.

Q Are you familiar with Mr. Ralph Lowe's holdings in the field?

A Yes, sir.

MR. QUINN: Are Mr. Landua's qualifications acceptable?

MR. PORTER: Yes, sir.

MR. QUINN: I would like to mark these as exhibits.

(Lowe's Exhibits 1 through 11 marked for identification.)

Q Mr. Landua, I would like to hand you what has been marked as Plaintiff's Exhibit No. land ask you to identify that.

A Exhibit 1 is a plat showing the various oil fields in the southeastern portion of Lea County of New Mexico. The field that we have in question today is Gladiola, is indicated on this plat, and its location in relation to other fields in the area is set out on this drawing.

Q Can you tell from that drawing the trend and the relationship to the other Devonian Field?

A Yes, sir, you can.

Q I'll hand you at this time Exhibit No. 2 and ask if you will identify and explain that exhibit.

A Exhibit 2 is a tabulation of the well and production data for Gladiola, North Gladiola and the Ralph Lowe operated leases. This exhibit shows the gross production by years for Gladiola, along with the base allowable rates at various years and months, the number of wells completed in the various areas by years and months, the bottomhole pressure information as it was obtained. This information is obtained primarily from Oil Conservation Commission records. It shows that the Gladiola portion of this area was discovered in 1950 and that up to the time that the North Gladiola area was discovered by Mr. Lowe, there were twelve wells in the Gladiola area that had produced approximately three and a half million barrels of oil. Mr. Lowe discovered this North Gladiola area in March of 1956. This information also tabulates the bottomhole pressures that were obtained in the North Gladiola area on the Lowe operated properties.

- Q How up-to-date is that?
- A It's basic data, it takes us up to the 1st of 1958.
- Q Is there anything significant as to that data?
- A Yes, I think it is, but I think we'll cover it down the line in our testimony, Mr. Quinn.
- Q I will introduce then Exhibit No. 3 at this time and ask you to identify that and tell the Commission what it purports to show.
 - A Exhibit 3 is a tabulation; it's a tabulation in three parts.

The first part shows the general completion depth and the amount of Devonian formation penetrated in the Gladiola area. The second portion lists the operators in the field, the number of wells that they have, and the average Devonian penetrated down to a subsea datum point of 8150 -- back up -- the second portion lists the operators in the field, the number of wells that they have and the gross footage of Devonian that these wells have above a datum point of 8150. It has mothing to do with the Devonian penetrated. The third part of this tabulation is an allocation of the average Devonian thickness above the 8150 datum point by areas.

I would like to hold this out for a minute and discuss it later.

Q Just go ahead and discuss that.

A Well, let's do it a little bit later on when we talk about these plats.

Q I give you then Exhibit 4 at this time and ask you if you will identify that and explain to the members of the Commission what that is and what it purports to show.

A Exhibit 4 is a structural map made up by one of Mr. Lowe's geologists. It's contoured on top of the Devonian as penetrated in the approximate 90 wells that have been drilled in the area. The plat also indicates the wells that were making water as of the lst of March of '58, and further it indicates the wells that were standing by to be plugged.

Q Is there a copy of that exhibit on the board?

Q Is there a copy of that exhibit on the board?

A Exhibit 4 is up on the board and is identified by its Devonian structure map title blocks.

Q This is Exhibit 5. Would you explain that exhibit?

MR. BUELL: May it please the Commission, I wonder, for the purpose of the record, since this exhibit was prepared by someone other than the witness, if he would testify that he adopts it as his own?

MR. QUINN: I was going, at the conclusion of introduction of all exhibits, I was going to ask him if they had been prepared either by him or under his direction.

MR. BUELL: I want to bring it up now before he discusses it. I realized you hadn't introduced it; if he will state that he adopts it as his own.

MR. QUINN: Will you state that, Mr. Landua?

A No, sir, the work is not my own, but I agree with the work,

Q I give you then Exhibit No. 5 and ask if you will explain to the Commission this exhibit and what it contains.

A Exhibit 5 is also upon the blackboard and it's a correlary to Exhibit 4. Exhibit 5 indicates the amount of the Devonian material above 8150 feet subsea for each well in the field.

Q Do you have anything further to say on that exhibit?

A Yes. Now I would like to refer back to Exhibit 3 and say that when nature put this big island of oil down in this great big Devonian sea, that it was in contact with, it created --

- Q (Interrupting) Pardon me, that is Exhibit 4, is it not?
- A Yes.
- Q Instead of 3?

A Yes, I'm going to refer to Exhibits 3 and 4, whatever these numbers are, Exhibits 4 and 5. I'll be referring to Exhibits 4 and 5 in this discussion.

This big island of oil has a mountain in the southwest corner. The areal extent of this mountain is about 600 acres and its thickness is about 200 feet. Its about 16 percent of the productive area. Now the remaining 84 percent of the productive area by our tabulation on Exhibit 3 indicates that this other 84 percent only has 52 feet of Devonian material above this 8150 foot bench mark. We think it an unusual type of structure, and it has a distinct bearing on the performance of this field.

Q Do you care to refer back to Exhibit No. 3 at this time, or have you referred to that?

A No, sir, I think that's all that I need to say at this time.

Q This is Exhibit No. 6. Will you take a look at that and identify it and state for the Commission what that exhibit purports to show?

A Exhibit 6 is a summary of the production and bottomhole pressure information in the north segment of this Gladiola Pool.

The bottomhole pressure information was obtained in the Ralph Lowe operated wells, and the production was obtained from Oil Conservation Commission records and was for the North Gladiola area as a whole

up to the time it was combined with the South Gladiola area.

In our opinion this summary is very cignificant. It indicates that during the period prior to pipe line proration in June of 1957; that the reservoir was performing in a nature whereby 1850 barrels per pound drop to about 6400 barrels per pound drop was being obtained. One pressure survey was obtained during this pipe line proration period. At that time, as we previously stated, the production rate had been cut back for this North area. Our information indicates that the reservoir performed in a manner whereby 19,000 barrels of oil were produced for each pound drop in bottomhole pressure during that period. Immediately after the period, we obtained another pressure survey and it indicated again that we were down in the range of 6,000 barrels for each pound drop in bottomhole pressure. In our opinion this indicates that this reservoir would be produced much more efficiently if these rates were cut down in the neighborhood of 190 to 200 barrels per day and allow the natural water drive that's present in this field to work to our benefit.

Q Going on through the exhibits, I'll hand you this Exhibit No. 7 and ask you to identify that and state for the Commission what the purpose of that exhibit is.

A Exhibit 7 is a tabulation of the wells currently producing water in the subsea depth of their producing interval. I would like to call particular attention to the Commission that this appearance of water in our opinion both in the North and South

Hammond has a well down there that produces some water, and its completion interval is a minus 8057 to minus 8067.

Again in the South area there's evidence of presence of water as low as a minus 8131 in some of the Hancock wells. In the north end, we have evidence that water is as high as a minus 8117, in Mr. Lowe's well it has gone to 100 percent water, and as low as 8156 in another well that Mr. Lowe has in the north area. We think this tabulation is very significant in that it indicates that the water advanced, even though on the edges it has been very erratic.

Q Do you have anything further to say on that exhibit at this time?

A No, sir.

Q Will you take this exhibit which is marked No. 8, identify it and explain what the purpose of this exhibit is and what it shows.

A At this stage in the development and production of the Gladiola area, there have appeared a number of problem wells. Some are incapable of making top allowables that have been assigned to it under its depth factor, manner of proration, and some are making excessive rates of water, and some are making very small percentages of water. When Lawton State No. 2 went to water, our first problem was to determine whether we had left oil in this well bore, so we took the logs that we had obtained in this well, the drill stem test data that had been obtained in the well,

the core analysis data that had been obtained in the well, and made a composite study. Our geological group analyzed this data, I analyzed the data, we had it analyzed by outside consultants. The agreement was unanimous that a very substantial portion of oil had been left in this well, even if the workover that we're attempting now is partially successful.

Q In that connection, Mr. Landua, I hand you this exhibit that has been marked Exhibit No. 9. I believe that concerns the same well which you are talking about, the Lawton No. 2.

A Exhibit 9 is a tabulation by months from the Form C-110 which Mr. Lowe's company has turned in to the Commission. It tabulates the production data from Lawton State No. 2 by months. It indicates that the well has produced 135,414 barrels of oil up to February the 21st, at which time it went to 100 percent water. Prior to that time it produced no water.

Q This is Exhibit No. 10. Would you explain to the Commission what the purpose of this exhibit is and what it purports to show?

A Exhibit 10, when we had obtained water in four other wells in the northern portion of the field, we were disturbed about the appearance of water, but the water encroachment wasn't as rapid as it was in this Lawton State 2. We put our wells on the pump, go ahead, and continued to get some oil even though we felt that waste was occurring we were willing to sit by and try to obtain some more data to see just how extensive it was; but when Lawton State 2 went to 100 percent water, why that's like getting your

DEARNLEY - MEJER & ASSCRATES INCORPORATED GENERAL LAW REPORTES ALBUQUERQUE NEW MEJOO 2-6693 5-9546 grocery bill cut off, your grocery money cut off, so we had our geological group and myself prepare a cross-section of Mr. Lowe's operated wells. It's Exhibit 10. This cross-section in effect shows that if the water is actually up to 8117 in Lawton State 2, that nineteen out of the twenty-four wells that Mr. Lowe operates should be producing some water.

Further than that, it also shows that Lawton State 3, which is another well on the Lawton State Lease, should be virtually 100 percent water, and it's a pipe line oil well. Lawton State 2 is surrounded by pipe line producing oil wells, and their subseadepths vary from 8075 as the top producing interval down to 8115 as a top producing interval.

Q This is Exhibit No. 11, our last exhibit. Would you look that over and state to the Commission what the purpose of that is and what it contains?

A Exhibit 11 is a tabulation of our average flowing tubing pressures that were obtained on February 24th and on March 10th.

Not being able to take bottomhole pressures as rapidly as we would like to, we got a reading on our flowing oil wells. Our flowing oil wells continued to make pipe line oil and we think that there is a correlation between the flowing tubing pressures and the flowing bottomhole pressures in this type of reservoir.

Now this tabulation indicates that we have had an increase in flowing tubing pressures from 40 pounds to approximately a hundred pounds. We think that this reduced rate of production

reduces the differential pressure that exists between the oil zone in this reservoir and the underlying and edge water zones. When we reduce this differential pressure, we think we reduce the environment or the possibility of water encroaching too rapidly, and in that way we increase our ultimate recovery tremendously.

- Q You say encroaching too rapidly, you mean at a rapid rate?
- A Yes, just about like Lawton State 2.
- Q Do you believe that could be called encroachment?
- A If you say rapid encroachment, I suppose you could.
- Q Does this represent all the exhibits that you have at this time, Mr. Landua?
 - A Yes, it does, Mr. Quinn.
- Q Were all those exhibits prepared by you or under your direction?
 - A Yes, both.
- Q You agree with what those exhibits show, and from what information did you prepare them?
- A Various records, records that we have in Ralph Lowe's file, Oil Conservation Commission records, geological records which are exchanged between companies, and as I say, our old files.
- Q Do you have any conclusion which you would like to draw, referring back to the various exhibits, in regard to this matter?
- A Yes, I do, Mr. Quinn. I feel that this data shows that 85 percent of the Gladiola Field, as it's combined today, has a relatively thin pay section compared with other Devonian producing

areas along this trend in southeastern Lea County. We had a suspicion that this thin-type of reservoir was being produced too rapidly up to about a year ago, and since that time we have had indications or red flags appear all along our operation in this field that indicated that we should reduce this rate. We think that the relative thinness of the pay section is a very pertinent matter to consider when talking about producing rates in this reservoir. Another conclusion is that during the past six months, the number of wells in our operations, as well as in the operation of the field as a whole, has increased very rapidly. We think that the reduction in bottomhole pressure that has occurred, particularly in the north end of this field, has been too rapid, particularly in view of the fact that the field has a natural drive which appears to have the ability of maintaining pressures by itself at commercial rates of production. When we maintain these pressures we lower our operating costs, we delay the cost of installation of pumping equipment, and we create a condition that's conducive to more economical recovery of oil.

Q Is it your opinion, Mr. Landua, that allowing some flexibility with this lower proration which has been set at 190 barrels would be of benefit both to the royalty owners as well as the working interest owners in this field?

A I don't think there's any question but that it can benefit everyone who has any money invested in this field.

Q Are you asking for an arbitrary figure of 190, or in that

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A Mr. Quinn, we don't feel that we're equipped to set this figure. The only thing that we can say to the Commission here is that in our opinion there have been happenings at the rates that this field has been produced that say you'd better lower this rate.

Q Do you think the lower rate would be fair to both working interests and royalty owners in the field?

A Yes, sir.

Q Is it your opinion that this would be in the interest of conservation and prevention of waste?

A Yes, sir.

Q Would you state to the Commission whether or not in your opinion the greatest amount of oil will be produced eventually by the lower proration figure set?

A I think there's absolutely no question about it.

Q Is it your opinion that the lower figure of 190 barrels, if that figure will allow each lease to recover its fair share of the recoverable oil in the reservoir?

A I missed your question, Mr. Quinn.

Q Is it your opinion that the lower figure of 190 barrels which has been set will allow each lease to recover its fair share?

A Yes.

Q Of the recoverable oil in the reservoir, is that right?

A Yes, sir.

Q Is there any other information or statement that you would

like to make to the Commission at this time, other than the information you have already given, based on these exhibits which have been entered?

A Yes. Mr. Quinn, I think I overlooked one point. Because of the relative thinness of this Devonian pay section in 85 percent of this field, it's our conclusion and we have facts to indicate it by the performance in three wells, that workovers, successful workovers are going to be impossible. This also contributes tremendously to leaving much oil in this reservoir. As a summary statement, I would like to say that these past per well producing rates have resulted in happenings to certain individual wells that appear to us to have caused waste and reduction of ultimate recovery already. These producing rates should be reduced immediately in order to prevent further waste and prevent the further reduction of ultimate economical recovery of oil.

MR. QUINN: That's all that we have at this time.

MR. COOLEY: Mr. Quinn, would you like to formally offer your exhibits at this time?

MR. QUINN: Yes, I would. We would like to formally offer these exhibits in evidence, numbered from 1 to 11, at this time, for the record.

MR. PORTER: Lowe's Exhibits 1 through 11. Is there objection to the introduction of the exhibits? They will be admitted. Anyone have a question?

MR. BUELL: Guy Buell. I might suggest that it might save

Dearnley . Meier & Associates Incorporated General Law Byr Inters Albuquerous, New Mexico 3-6691 5-9546 time overall in the cross examination if we can have about a five or ten minute recess to look at some of the exhibits. I think we can eliminate some of the questions that we would ask. I believe it would save time overall.

MR. PORTER: We will have a five minute recess. (Recess.)

MR. PORTER: The meeting will come to order, please. Mr. Buell.

CROSS EXAMINATION

By MR. BUELL:

- Q Mr. Landua, I notice in your testimony you referred to encroachment or rapid encroachment. Do you use that word synonymously with coning?
 - A No, sir.
- Q In your opinion is coming taking place in this field at this time?
 - A I don't think I'm in a position to say.
 - Q You just don't know?
 - A No, sir.
- Q Would you define for me, please, it would help a lot, Mr. Landua, just what you mean by encroachment?
 - A Simply stated, encroachment is an advance, in this case, of water.
- Q Would you not normally expect that in a water drive reservoir, encroachment of water?
 - A Certainly, I wouldn't expect it in such an erratic nature

as we have here, if the reservoir was handled properly.

Q Have you analyzed water production, Mr. Landua, from the standpoint of net pay and original oil in place that you would assign to the wells that are currently making water?

A No, sir, we haven't. We have some wells but not all the wells.

Q Let me ask you this. Strictly now from the standpoint of capacity, will all the wells operated by Lowe make the top allowable well for March, it's 237, is it not, would normally be the normal unit allowable?

A State your question again, please.

Q For the purpose of this question, I am interested only in capacity, from capacity to produce the water, will all the wells operated by Lowe produce at the rate of 237 barrels per well per day?

A No, we have one making 100 percent salt water.

Q All right. Other than the Lowe State No. 2, are all the wells currently capable of producing 237 barrels of oil per day?

A Yes, sir.

Q All of them. Did all of these wells make their assigned allowable in January?

A I'm not sure. I would have to examine the records.

Q Wouldn't that be included in some of the exhibits that you introduced?

A The total production would be in there.

Q Would you mind looking at your exhibits?

DEARNEEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUEROUE NEW MEXICO 3-6691 5-9546 A It would be difficult to do because you were given some of this back allowable in that area.

Q In other words, you are not prepared at this time to answer that question?

A State your question again.

MR. BUELL: Would you read it back?

REPORTER (Reading): "Did all of these wells make their assigned allowable in January?"

A I will give you the figures and you can divide it out.

Q If you don't know offhand, it's not important enough to take a lot of time.

A Okay.

Q Do you make your statement on the current ability of your wells to produce on recent production tests or just your general knowledge of their capabilities?

A We don't have too many individual well tests, we have the production by leases. We have some individual well tests.

Q In other words, then, you based your answer on your general knowledge of the wells and not on individual well capacity tests?

A That would be true.

Q From this same general knowledge that you have of your wells, Mr. Landua, in your opinion would they produce, do they have the capacity to produce at a sustained rate of 125 percent above 237 barrels per well per day?

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- A I just don't know.
- Q Sir?
- A I don't know whether they have or not.
- Q You just don't know.
- A I'm of the opinion that they would.
- Q All right. Would you give me the complete open interval in your log statement?
 - A Yes, sir. You want it in subsea depth?
 - Q Subsea, yes, please. Isn't it on the cross-section?
- A I have the top of the Devonian on the cross-section, not the top of the producing interval.
 - Q Would you give the complete, the top and the bottom?
 - A Yes, it's 8117 to 8157.
 - Q 8157?
 - A Yes.
- Q Now, in your direct, when you were talking about water being at minus 8117, you were referring to the top interval?
 - A Yes.
- Q And I'm sure you made that statement because you felt since it went to 100 percent water that you had water that high in that well?
 - A Yes, sir.
 - Q Had that well made water previously to February 21st?
 - A Not to our knowledge.
 - Q None at all?

- A No.
- Q If it made it, you would know about it?
- A Yes.

Q Based on your general experience as a reservoir engineer, Mr. Landua, does that appear to you to be the effect, that well going to 100 percent water, does that appear to you to be the effect of coning or premature encroachment or would that not indicate to you that you have a mechanical problem there?

A I don't know what you mean by mechanical problem.

Q All right. I'll ask you this way then. Normally in a water drive reservoir where you have coning or premature encroachment, don't you observe that initially the well will make a small amount of water and then gradually increase?

A I don't know whether that would occur when you had coning or premature encroachment. I've seen it occur both ways. We have it happening in this field where your water production is small and then increases very rapidly, and then we have the one well where it went from 100 percent oil to 100 percent water.

Q In other words, in your opinion, you have ruled out completely any mechanical trouble in that well as the cause of your 100 percent water trouble?

A No, sir, because I don't know what you mean by mechanical trouble.

Q Well, what do you engineers in the profession usually mean and what do you mean when you refer to mechanical trouble in a well?

A You could mean that you could have a casing leak, that's about the only one that I know of.

- Q What about breakthrough in your cement?
- A I don't know that I would call it mechanical.
- Q You wouldn't call cement trouble mechanical?
- A I don't know that I would call it mechanical.
- Q Do you think something of that nature could have happened to your Lawton State 2?

A Well, it produced to 502 days without any trouble, I would think that if you had environment that is conducive to a bad mechanical condition, possibly it would have appeared sooner.

- Q Possibly?
- A Yes.
- Q I believe you mentioned that you were getting ready to work the well over, apparently you think you can do something with it?

A We think that this water appeared so rapidly, we just have to gamble with the possibility that this condition may be unusual. We're going to spend some money to see.

- Q In other words, certainly in your thinking you haven't written that well off as a producing well?
 - A Not until after we do this workover.
 - Q You have a pumping unit on that well?
 - A No.
 - Q How did you ascertain, then, that it went to 100 percent

salt water?

A The well was flowing very nicely and then overnight the tubing pressure went to zero, stopped producing. We got a swabbing unit out on the well and swabbed it for two days. In these swabbing tests is when we got this information.

Q Do you have any idea, Mr. Landua, of the amount of water you produced when you were swabbing the well?

- A 26 barrels an hour.
- Q Sir?

A 26 barrels an hour. Standing fluid level was seven to eleven hundred feet from the top of the ground.

Q Would you state briefly for me again the wells operated by Lowe, other than your Lawton State No. 2, that are currently making water?

- A Would I do what?
- Q Your wells other than State No. 2 that are now making water, would you give me the names?
 - A The names?
 - Q Yes.

A Shell Browning No. 1, State "A" No. 2, Markham State No. 1, and Aztec Adamson No. 2.

Q From the standpoint of water production on those wells, Mr. Landua, what has generally been their history, has the rate gradually increased since they initially started cutting water?

A I would say that it's still increasing in all four wells.

Q In other words, you have observed a gradual rise in the water percentage in these four wells that you have just named?

A I don't know what you mean by gradual.

Q Well, I'm trying to avoid going into detailed questions on each well, Mr. Landua. I mean by gradual, just a normal sloping curve. If you don't think it was gradual, express it in your own words. I'm just trying to save time.

A I don't know whether it was gradual, because you would have to make a bench mark.

Q But you have noticed from month to month on your reports to the Commission that the water cut has been increasing?

A I'll say that it has varied appreciably. We haven't plotted up the dope to see if there is a trend.

Q Do you have any other wells other than the four you have just named and your Lawton State No. 2 that are currently making water?

A We have a plat that has the wells circled that are reported to be making water.

- Q Are those circled in red on Exhibit No. 5, Mr. Landua?
- A Exhibit 4 and 5, yes, sir.
- Q Are they also circled on the copy that went into the records?
- A Yes.
- Q Would you go over to either Exhibit 4 or 5 for a minute, Mr. Landua?

A Yes.

- Q Let me ask you this. Do you know of any wells that are located structurally higher that are producing water?
 - A What do you mean, structurally higher?
 - Q I mean high as opposed to low.
- A Well, here is one that is higher than this one that's making water.
 - Q This one here, which well is that?
 - A Aztec Adamson 2 is higher than Sinclair Kendricks 1.
 - Q When did that well start making water?
 - A Just very recently.
- Q Has that water production been reflected on any reports that you have submitted to the Commission?
 - A No, sir, we haven't submitted a report for March yet.
 - Q What was this water cut, what percent?
- A I don't have the exact data because it has been on the pump about a week. I would say in the neighborhood of 20 to 25 percent.
 - Q Can you express that in barrels for me?
- A Yes, sir. I would say about 80, well, I don't know. I would rather --
 - Q But around 20 percent?
 - A Yes, sir.
- Q Do you know of any wells other than the one you mentioned, the Aztec well, that is located structurally high and producing water?

A Structurally high, you have to compare it with something. I would say Mr. Hammond's well down here is located structurally high compared to other wells here and with the north end.

- Q In other words, what you are saying with reference to the Hammond well is that there are wells located structurally lower than he is?
 - A The map indicates that.
- Q As a matter of fact, he is right on the edge of the field, Mr. Landua, as reflected by your exhibit?

A Depends on what you call edge. He's supposed to have 105 feet of Devonian above the 8150. Depending on the spacing, you might get another well in here.

Q Let's ask it this way, Mr. Landua. Looking to the productive limits line, as reflected by your Exhibits, to the west and to the south are there any wells located between Hammond's well and your productive limits? It's an outpost well, isn't it?

- A It's the last well on the south end, let's put it that way
- Q Yes. As a matter of fact, Mr. Landua, in a water drive field such as I believe everyone agrees we have here, isn't it the normal thing to expect that low structural wells will produce water?
 - A At what point in the life of the field?
- Q You are the witness. Answer the question if you can. Qualify it any way you want to.
 - A I would say that sometime in the life of the field you would

expect the low wells to produce water, yes, sir.

- Q Well, you talked a lot about the relative thinness of 85 percent of this field?
 - A Yes, sir.
- Q Certainly that would have something to do with the time at which your low wells would go to water, wouldn't it?
 - A Yes, sir.
- Q All right, sir. What's the total cumulative production from this pool, do you know?
- A I think around nine million barrels, up to the first of the year.
 - Q Quite a bit of oil, isn't it?
 - A Yes, sir.
- Q All right now, in your opinion, based on your knowledge of the facts that exist in this field, and balanced with your lowledge of the amount of oil that has been withdrawn, you don't find it unusual for these edge wells to be making water, do you, Mr. Landua?
- A This is a 3600 acre field and my studies have been based on individual wells, not so much field as a whole.
 - Q You are reducing the allowable on the field as a whole?
 - A To protect the individual wells.
 - Q To do what?
- A To protect the individual wells and preserve correlative rights.

Q I believe I understand you now. You are saying that this reservoir as a whole is not rate sensitive, but certain localized wells are, is that right?

A No, I'm saying that there has been some bad things happen to individual wells and it has been caused by the rates that have been in existence.

Q Mr. Landua, as a matter of fact, in a reservoir of this type, isn't the only unusual occurrence that we have all observed, isn't that the behavior of your Lawton State No. 2 well?

A I think it's unusual and bad practice for water to appear at different depths as it has.

Q Go back on your general theories now. Do you know of any water drive field that has produced a substantial amount of oil that has an exactly level water-oil contact?

- A You mean exactly level by the --
- Q I mean that is opposite to your --
- A You mean not even a foot's variation in the water level?
- Q You say this one is unusual --
- A Yes.

Q Based on your experience, that is what you encounter in any water drive field after you have had substantial production?

A No, sir, I don't know about all water drive fields. I can't answer that question.

Q Have you had any experience at all in a water drive field other than this one?

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- A Yes, sir.
- Q Where?
- A Deep Rock-Ellenburg in Andrews County, Texas and Denton Pool in Lea County, New Mexico.
- Q What did you observe there from the standpoint of a level or stable water-oil contact after substantial amounts of production?
 - A It varies.
 - Q It varies, doesn't it?
 - A Yes.
- Q So that is not unusual, the only unusual fact that we have that we may not be able to explain at this point of this hearing is your Lawton State No. 2, isn't it, Mr. Landua?
 - A Unusual fact --
 - Q Yes, sir.
 - A You say --
 - Q Unusual as opposed to normal and expected.
 - A Yes.
- Q Now you are recommending 190 barrels a day as a maximum efficient rate, are you not?
 - A No, sir, I'm not recommending a figure.
 - Q What are you recommending?
- A I'm just recommending that it be cut to some figure that the Commission can set.
- Q Well, the Commission this morning cut it substantially down to 226, would that be all right with you?

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- A No, sir.
- Q You think it ought to be lower than that?
- A Yes, sir.
- Q Without us going through the entire increment from 226 down to zero, can you give me some idea of what you think would be a reasonable rate?

A We have this figure that was obtained in June and August that indicated in our opinion that we ought to try it around 190 to 200 barrels a day for a period of time and see what happens.

- Q In other words, you would feel better with 190 than you would with 226?
 - A Yes, sir. I would.
 - Q For April?
 - A Not for April, for right now.
- Q Surely. And you are recommending that as maximum and efficient rate, correct?
- A No, sir. I don't know how to define maximum and efficient rate.
- Q Are you recommending that the Commission set a maximum and efficient rate?
 - A No, sir.
 - Q What are you recommending, Mr. Landua? Why are we here?
- A I'm recommending that the Commission set a rate that's lower than what has been in existence so that we can observe and see if the things that we consider are bad production practices

will continue to occur.

- Q Are you not asking, then, isn't the effect of your recommendation to set a maximum efficient rate?
 - A No, sir.
- Q You talk about this beneficial performance that you observed during the June *57 pipe line proration?
 - A Yes, sir.
 - Q How was this beneficial performance demonstrated?
 - A By the pressure survey for one thing.
 - Q Sir?
- A By the pressure survey that we had that indicated that we were letting the natural water drive work for us.
- Q In your application you say pressure performance observed in certain wells?
 - A Yes, sir.
- Q Without naming them, the certain wells, could you tell us generally which wells they were?
- A Yes, sir. They were all located in the north part of this reservoir.
- Q Let me ask you this, Mr. Landua. Have you observed field-wide pressure performance as reflected at that time on a field-wide basis?
- A Well, the field-wide pressures with the two areas together has only been taken one time and that was by the New Mexico

 Commission. We have taken our pressures on our operated leases,

which are just in the north end of the field, and the Commission has in their records which I have tabulated on Exhibit 2, indicates the pressures that were reported by the Commission in the Gladiola area as they were measured, and I have read those.

- Q In other words, you have analyzed pressures on a field or reservoir-wide basis rather than, as your application states, certain wells?
 - A I have done both.
- Q The point I'm trying to make, I believe you realize it,
 Mr. Landua, is that beneficial performance as observed by you was
 not on a field-wide or reservoir basis?
 - A That's true.
 - Q And you have not looked at it?
- A At that time the North Gladiola was considered a field by itself, South Gladiola was considered a field by itself.
- Q And you have not taken those data and looked at those data and seen how they fit in on the field-wide picture?
 - A Yes, we have compared them.
 - Q You have done that?
 - A Yes, sir.
- Q Then when you did that, you observed, did you not, Mr.

 Landua, that as a matter of fact you had normal pressure performance that you have been experiencing prior to this period of proration, did you not?
 - A What do you mean, normal?

Q I mean that your pressures reflected during that period fit the pattern, the attitude of the curve as exemplified by past pressures; I am speaking about a pressure curve, I am sure you as an engineer are familiar with it?

- A Yes.
- Q They assume attitudes you would expect on that curve?
- A I wouldn't know what to expect.
- Q Have you plotted performance against cumulative?
- A Pressures?
- Q Yes.
- A No, sir. We have just made a table on it.
- Q Do you think it might be beneficial to you from the standpoint of analyzing a little further these beneficial pressures to have looked at them on a field-wide curve, pressure versus cumulative?

A I don't know what it would show us, Mr. Buell, because we are concerned about damage that has already been done.

- Q You don't know what it would show?
- A We don't know how it would help us in our recommendation.
- Q All right. You have shown the productive limit line on your Exhibit 4 and 5 in this water drive field to be minus 8150?

A I don't know that I would define it as a productive limit line. We have used it as a bench mark to work from in trying to determine how much Devonian material we have in these different areas of the field.

Q Mr. Landua, what is the usual connotation attached to a zero contour line on an isopac? Isn't it normally your productive unit?

A No, we have tied that down, we have said it is 8150.

A We have said that the zero line there is at 8150. We have tied it down. We are not saying that is the water-oil contact.

Q It's productive limits?

A Yes.

Q You are at your zero line of pay, that is all it would be? A Yes, sir.

Q We are in a water drive field, what is going to determine productive --

A (Interrupting) Where?

Q Water-oil contact is going to determine it?

A Yes.

Q So actually your zero contact line, which is your bench line, is also your pick of the water-oil contact, is it not?

Q How did you prepare that isopac, or the people under your direction, how did they prepare it?

A You mean the source of the data?

Q What sources, that's what I mean.

A We used scouting cards that are put out by these surveys that the companies exchange data on.

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- Q Scout data alone?
- A It's the Reinhardt scouting cards.
- Q Mr. Landua, several times in the course of your direct, or at least one that I remember, you mentioned you had used core data. Would you have any objection to making the core analysis available to the Commission that you used in your analysis of this field?

A No, sir. We have a summary here. You mean the detailed data?

- Q Yes.
- A Yes, we have one that I can give them.
- Q Why we are mentioning that, what in your opinion is the average porosity in this reservoir?
- A We just have this one core dope and it was four and a half percent porosity on this one core analysis.
- Q What average porosity are you using in your reservoir engineering work, you using the four and a half?
 - A No, we haven't used an average, we don't know what it is.
 - Q What was the average porosity you used?
 - A I used for what?
 - Q In your engineering reservoir work and in this field?
 - A We don't have any figure for average porosity.
 - Q You haven't made an analysis of the reserves to your well?
- A Yes, we used basic recovery characteristics. We didn't go back to get --

- Q (Interrupting) You didn't use an average porosity?
- A We didn't go back to try and develop average porosity. We figured it would be impossible.
 - Q What do you figure is the average permeability?
 - A I don't know.
 - Q What is it that is reflected by the analysis that you have?
 - A Just a second.

MR. COOLEY: Mr. Buell, while he is looking for that, I am not clear on your request. Do you wish to make a total analysis a part of the record?

MR. BUELL: Yes.

Q If you are going to have to look for it, Mr. Landua, and if you are going to submit the core analysis, we can get it from that.

A I have it right here. According to core lab summary, they analyze sixty and a half feet of permeable Devonian. The average was 76 millidarcies, and average porosity was 4.6 percent.

- Q That is on your Lawton State 2?
- A Yes, sir.
- Q Perhaps I should direct this question to Mr. Quinn rather than to you. Would you have any objection to showing the surface traced of the cross-section exhibits you introduced on your Exhibit 4 and 5, so that we might relate those wells to the surface as well as they were reflected structurally by your exhibit?
 - A That's the way the cross-section was made.

- Q Would you have any objection to showing the trace?
- A I have no trace.
- Q Do you have any objection to putting a trace on your Exhibit 4 and 5?
 - A No. You mean you want to put it on?
- Q I would rather you would. It is your exhibit. I don't want to mark it up.

A I have no objection. I don't want to go to any more work.

If you want to put it on, you can put it on.

Q Mr. Landua, several times in your direct testimony you indicated, to me anyway, that you were worried about this water drive being effective from the standpoint of maintaining pressure. In your opinion, based on data available today, would you say that we have had an effective water drive?

A I don't know what your concept of effective water drive is.

Some people say you have to maintain pressure at 100 percent to have an effective water drive. Water drive varies by degrees.

- Q I'm tired of defining words. I will ask you this question in this manner. You agree that we have about nine million barrels of oil cumulative produced from this reservoir?
 - A That's what the records show.
 - Q You don't doubt the records, do you, Mr. Landua?
 - A No, they are Conservation Commission records.
- Q Would you also agree with me that in producing nine million barrels of oil we have experienced a pressure drop of only about

DEARNLEY - MEIER & ASSOCIATES INCORFORATED GENERAL LIAN REPORT: HS ALBUQUERQUE, NEW MITRICO 3-6691 5-954-6 300 pounds?

A This pressure varies by areas. Our pressure study has been by the north area. We had a 400 pound drop in the north area where we produced about two million barrels of oil, in a round figure. Down in your south area, the pressure drop and performance was some different. I don't know exactly what the total pressure drop would be when you are weighing the whole business.

Q Mr. Landua, I'm sure you realize that in most all reservoirs pressure varies throughout that reservoir?

A Yes.

Q Your engineers have a way of weighting pressures so you can arrive at an average pressure?

A Right.

Q Do you agree with me then that taking this average pressure of this reservoir, which is a common and customary thing for engineers to do, that we have produced nine million barrels of oil with approximately a 300 pound pressure drop?

A No, sir, I don't agree because I don't know when the last pressure was.

Q You don't know what the average pressure in the reservoir is, do you?

A At this minute, no.

Q Do you happen to know the saturation or bubble point pressure?

A I have heard that it's below a thousand pounds, but I don't know what it is exactly.

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REFORTERS ALBUQUERQUE, NETV MEXICO 3-6691 5-5846 Q Then you couldn't disagree with me if I told you it was 537?

A No, I couldn't disagree.

Q Based on your general knowledge or a study, if you made it, Mr. Landua, in your opinion, producing at the normal unit allowable rate in this reservoir, in your opinion will pressure ever decline to anywhere near the bubble point pressure in this reservoir?

A No, sir. I'm positive that it won't.

Q Sir?

A I am of the opinion that it won't.

Q Will not. You also testified, Mr. Landua, that lead me to believe that in your opinion in a water drive reservoir such as this that absolute pressure maintenance would be the best thing that you could do for effect in the field, is that right?

A Absolute?

Q Yes, sir, I understood you to say that.

A I think that you would get the most ultimate recovery if you had absolute pressure maintenance.

Q In other words, the greater recovery of most oil from this field is to keep that pressure at exactly where it is now?

A Now?

Q Yes, sir.

A No, I can't say that.

Q Well, surely you don't propose injection of some fluids

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REISASTERS ALBUSUEROUE NEW MEXICO 3-6691 5-9546 extraneous fluids to increase it?

A No, sir, but I think maybe if you could reduce the rate low enough that the pressure might go on back up.

- Q You think that would be a good thing?
- A It could be increased.
- Q It would increase ultimate recovery?
- A I think it would increase ultimate economical recovery.
- Q Let's talk about actual ultimate recovery in physical barrels of cil from this reservoir.
 - A Yes, sir. I am of the opinion.
 - Q It wouldn't increase it, would it?
 - A Sir?
- Q Returning this reservoir to its original virgin pressure and maintaining it there to completion would not increase ultimate physical recovery, would it?
 - A I don't know whether I can answerthat.
 - Q Sir?
 - A I don't know whether I can answer that.
 - Q You don't know one way or the other?
 - A No, sir.
- Actually, Mr. Landua, as a matter of fact, reducing pressure in this reservoir is going to increase ultimate recovery, isn't it?
 - A I don't know that either.
- Q What happens to your reservoir volume factor in a water drive reservoir such as this when you decrease your pressure?

A If you keep it above saturation pressure, I would think your reservoir volume factor, there again, people define that in different ways, but I would think it would stay about the same.

Q Stay the same. You are not of the opinion and you have never seen any literature or technical papers to the effect that it would increase?

A No, sir.

Q What do you think would happen to the viscosity of the oil if we reduce the pressure in this reservoir?

A I think that it would keep it above the saturation pressure, that it shouldn't vary appreciably.

Q Again I will ask you the same question. You have seen nothing in the literature or technical papers that would indicate otherwise?

A No, sir.

Q Assume for the purpose of this question that in truth and in fact the phenomena that would occur on your reservoir volume factor is that it would increase as you decreased your pressure. What would be the effect of that in a reservoir? I realize you are assuming that it will, since you said it would.

A I don't know.

Q You don't know whether that would increase ultimate recovery or not?

A No, sir.

Q Would your answer be the same with respect to viscosity?

A Yes, sir. I mean I wouldn't know.

MR. BUELL: I think that's all I have at this time.

MR. PORTER: Anyone else have a question of the witness?

By MR. ERREBO:

Q Mr. Landua, to save time of the Commission, cin you tell me whether or not you have furnished the individual well pressures used in the average for your fifth and sixth surveys? I don't know on what exhibit that was reflected, but I believe you did offer that. Has that been furnished to any of the other parties in this matter, such as the Pan American or Hancock or any other company?

- A No, sir.
- Q Could you prepare that information and furnish that to Sunray?
 - A Yes.
- Q Now I assume, Mr. Landua, in making your study of this field upon which your recommendations are based that you have had access to complete reservoir or complete production and test information on the Lowe wells. Do you figure that, you believe that is complete, the information which you have used in making these calculations?

A Of course I don't know exactly how complete, or the degree of completeness you mean.

- Q Well, I'm not trying to trap you on that.
- A I know, but what's your point?

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- Q I would like to know if you have measured the oil and water production per day on the Lowe wells before the pipe line proration occurred, and if that was also measured afterwards?
 - A It's a matter of record.
 - Q It is a matter of record?
 - A Commission record.
 - Q Has been furnished to the Commission?
 - A C-110, yes.
 - Q That is furnished periodically, is that correct?
 - A Yes, sir.
 - Q Over what interval of time?
- A They get them every month. C-110's for the oil. There is another form for the water.
 - MR. ERREBO: Thank you.
- MR. PORTER: I believe you referred to the wrong number form, it should be C-115, if you are referring to the production.
 - A Yes, that's what I am referring to.

MR. PORTER: Mr. Montgomery.

By MR. MONTGOMERY:

Q You were asked several questions, and some of them I would like to go back again and perhaps review those. One of them was the fact that you were asked, did you see anything unusual in this particular field besides the Lawton State No. 2 producing 100 percent water overnight. Did you see anything unusual about the fact that before proration we were able to obtain some 6,000 barrels of

oil per pound drop, and then during the reduced period, as you testified, we received some 19,000 barrels and then again it went back to its former rate on hundred percent purchases? Do you see anything unusual about that particular item?

- A No, sir.
- Q What is your conclusion from that information?
- A My conclusion from that information is that the water drive worked for us to maintain pressure at lower rates.
 - Q At the lower rates?
 - A Yes, sir.
- Q In other words, the water was not keeping up fast enough to get the oil out, at the increased rates?
- A That's right. The water encroachment into the reservoir was less than the oil withdrawals.
- Q Have you seen any other unusual features about this pool?

 Are there any wells high on the structure? The two wells, Pan

 American Wells No. 10 and 12, would you mind pointing to the

 Commission on the map where those wells were?
 - A Yes, sir, they are located on this edge of the field.
 - Q Do you know anything unusual about those two wells?
- A Well, by Commission records they have not produced the top assigned allowables for this area for quite some time, but I understood just a few minutes ago that they worked over one or both, and I don't know the status of those wells now. Examination of the Commission records in the past has indicated that they have

not been top allowable producing wells.

- Q Are those wells flowing?
- A To my knowledge, they had Cody pumps on them.
- Q What would you gather from that information, these two wells are on the highest part of the structure and probably of the thick pay more than any part of the pool. What conclusion do you draw from the fact that they are marginal wells?

A Apparently the operator has seen fit to not take top allowable out of these wells despite the fact that they have the thickest pay.

- Q Are those wells capable of producing top allowable?
- A I don't know.
- Q We can assume they probably were not. Then why did they not, because there was not enough oil in the well bore?
- A Maybe they thought they were too close to the fault and at high producing rates they would draw in wells.
- Q There are top allowable wells between those wells and the edge of the pool, are there not?
 - A These wells on this edge of the pool, yes, sir.
 - Q Are those wells top allowable?
 - A By the Commission records, they are, yes.
- Q Did you assume that the drive mechanism wasn't sufficient at the increased producing rates to drive the oil through the well bore?
 - A Something wasn't sufficient for them to take top allowable\$

out of these wells. They were apparently being produced at capacity even though you had a flush-type field, flush-type condition in that part of the reservoir.

Q Were there any other unusual factors about this field that you found in your study?

A I think it's unusual for it to be so thick in one area and then so thin in so much of the area.

Q The core analysis that you referred to on the Lawton State
No. 2, as I recall you said 62 feet of pay in that well?

A No, sir, I said that core lab analyzed 60 and a half feet of Devonian section.

Q Did they analyze any of that core being water bearing and would probably produce water?

A No, sir. There are indications that the whole sixty and a half feet is oil productive, would be oil productive.

Q You answered a question a little earlier when you had it on Exhibit No. 10, the question was did you think there was any coning, and I think your answer was no. I wonder if you will refer to Exhibit No. 10, wherein you said as I recall the minus depth on the well was 8172?

A Yes.

Q Did you make a statement that if that water level was present throughout the pool, some 18 of your 19 wells would be flooded out?

A No, I didn't say that. I should say they should be producing

DEARNLEY - MEIER & ASSOCIATES INCORFCRATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 some water. I don't know that they would be producing 100 percent water.

Q Would that indicate to you that there would be coming in that one well?

A I don't know how to define coming in a hard rock reservoir.

This reservoir has fractures and bugs. I don't know how to define coming as regards this particular reservoir.

Q Can you see how there could possibly be any mechanical failures that would cause this well to produce water? The core analysis indicates there was no water whatsoever?

A That's true.

Q Do you have any water above the pay?

A I would say that it would be virtually impossible to be a mechanical failure in this well that would make it produce water.

Q Do you sincerely believe that we were producing this field at too rapid rate, after your some twenty years experience as an engineer?

A Yes, sir.

MR. MUNTGUMERY: That's all I have.

MR. PORTER: Does anyone else have a question of the witness? Mr. Fischer.

By MR. FISCHER:

Q Mr. Landua, what s the nature of the workover now on this Lawton State 2?

A We have moved in a small rig and we have pumped 300 sacks

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REFORMES ALBÜQUERQUE NEW MEXICO 3-6691 5-9546 of cement in and in 100 sack batches, and it has gone in on a vacuum, then this morning they used 200 sacks that contain some flow seal plugger material and they were able to pump away 40 sacks and got a pressure buildup. I don't know if they have the 40 feet of perforated interval squeezed off or not.

Q It was squeezed on a retainer?

A Yes, sir.

Q Was it in the nature of a sort of diesel oil cement job?

A No, sir, I don't know the kind of cement, but it's straight cement. I don't know whether it was Portland or slow set.

Q Pardon?

A I don't know whether it was Portland or slow set, but it wasn't a diesel squeeze.

MR. FISCHER: Thank you.

MR. PORTER: Mr. Nutter.

By MR. NUTTER:

Q Mr. Landua, referring to your Exhibit No. 11, wherein you show that some eight or nine or ten wells had experienced an increase in flowing tubing pressures since the rate of production was reduced, now what do you make of that? What's its significance? I wonder if you would elaborate on Exhibit No. 11.

A Well, in our opinion, as we have previously stated, it's an unsaturated crude, it doesn't have much gas in solution, simply stated, this indicates to me that we have less differential pressure under this condition in our oil zone than we do in our water zone

in these wells that we observed.

Q In other words, you feel that the pressure is more equalized from the water into the oil section?

A I don't know that it would be equalized. I would say that the trend is toward equalization.

- Q That's what I say, more equalized.
- A Yes, sir.
- Q Now on your Exhibit No. 6, on these bottomhole, the barrels of production per pound drop in bottomhole pressure --
 - A Yes.
- Q -- Do you feel that at the rate of withdrawals for the first four bottomhole pressures were taken, that the water was failing to come in fast enough to maintain the pressures in there?
 - A Yes, sir.
- Q And you feel that during the period of pipe line prorationing when the rates of production were curtailed, that the water was more or less equalized with the rates of withdrawal of the oil?
 - A No, sir, it wasn't equal.
 - Q Or the influxion of the water was closer to equal?
 - A Yes, sir.
- Q Do you think there's any possibility, Mr. Landua, that the Lawton State No. 2 well went to 100 percent water as a result of increased production during the period that you were making up back allowable?
 - A It could very well be, yes, sir.

- Q How much production did it make during the month of January?
- A 8196 barrels.
- Q To achieve a rate of 8196 barrels for the month, do you happen to know what the normal unit allowable for the State would have to be?
 - A No, sir, I don't.
- Q Assuming it was a rate of 39 barrels, does that sound like an unreasonable rate for a normal unit allowable? It used to not be, at any rate.
 - A I don't know.
- Q It's conceivable that we could have a normal unit allowable of 39 barrels?
 - A Well, I don't know about that.
- Q At any rate, the production during the month of January was at a rate of 39 barrels normal unit allowable, Mr. Landua.
 - A Yes.
- Q To you does that indicate that possibly the back allowable was not the contributing factor; if it would be the contributing factor, let me put it this way, would a rate of 39 barrels normal unit allowable also cause the same thing?
- A I think any time you increase the producing rate you increase the chance of getting this water up there prematurely. Certainly we had a producing rate here that was above the normal allowable base rate.
 - Q What was the average daily rate of production during the

time that you were curtailed by the purchaser?

A I think you could. I haven't divided it out, but it reflects it during the month of June, '57, the well produced 5772 barrels.

- Q Would that be approximately 192 barrels per day?
- A I haven't divided it, Mr. Nutter.
- Q Assuming it would be, would that be a more proper rate of withdrawal, in your opinion, than the current allowables are?
 - A Yes, sir, we think so.

MR. NUTTER: Thank you.

MR. PORTER: Are those all your questions, Mr. Nutter?

MR. NUTTER: Yes, sir.

MR. PORTER: Anyone else have a question of the witness?

Mr. Cooley, did you have a question?

MR. COOLEY: Just a minute, please.

By MR. COOLEY:

Q Mr. Landua, you have made considerable reference to the fact that approximately 85 percent of the pool has only about 50 feet of pay?

A Let me say this, Mr. Cooley. It's 50 feet of Devonian, feet of section above the 8150 bench mark.

Q Yes. The inference has been that due to this thinner pay the water encroachment problem would become more acute. Can you please expand on that somewhat as to how the thinness of pay affects the water encroachment as a result of high production rates? What is the significance of this?

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-669 i 5-9546 A It seems to me that one significant fact is that in the hard rock type reservoir like we have here, with fractures and vugs, once water makes its appearance, you have to handle it.

When you have to start handling water, it adds to your production expense, and therefore reduces the amount of ultimate economical oil that you can afford to take from a well bore.

Q How is this any more so in a foot of 150 foot than 050 foot pay, and 200 feet?

A If you have 200 feet of pay section, you have a chance of having some hard streaks along the way that you can do a cement job and get a seal and retard the continued encroachment of this water.

Q In your opinion does the flooding out of your Lawton 2 well represent the movement of the oil that was formerly coming into that well bore off that lease to another lease, or do you feel that its lost forever in production? Does water encroachment move the oil off to another well, or is it actually lost?

- A I don't know exactly how it would work.
- Q Do you think that some or both may occur?

A I am of the opinion that when the water appears in this well like it has here, it is 100 percent water, and if you can't do anything about it, you are not going to get any more oil from the 40 acre tract.

Q If that, that is the 40 acre tract that the operator owns that is all he is going to get?

- A He is out of the business.
- Q Considering it from the ultimate recovery from the pool and not each operator's recovery, do you think that the watering out of the Lawton No. 2 represents a loss of the recoverable oil in the Gladiola Pool?
 - A I am of the opinion that it does.
 - Q How is that so, has it been bypassed?
 - A I would say that it has.

MR. COOLEY: That's all the questions I have.

MR. PURTER: Mr. Webb.

MR. WEBB: I just have one question.

By MR. WEBB:

- Q In your opinion is this field an edge water drive, or bottom water drive?
 - A I haven't made up my mind.
- Q Would that make a difference, in your opinion, as to what is happening in these wells which are producing water, whether it was a bottom water drive or edge water drive? What I'm getting at, would that help to explain any of the problem wells which you have been talking about?
- A You mean the fact that it would be edge drive rather than bottom drive?
 - Q Well, or vice versa, whichever in your opinion it is.
- A The only thing I can say is that certainly the water is present on the edges, and we know that it's present in one place

kind of in the center. It's the only fact that I have about it, Mr. Webb.

Q Just one further question. In talking about the pressure drop, pounds of pressure in the number of barrels that you were able to produce per pound of pressure drop, you used the figure 19,000 barrels during proration, and a return to 6,000 barrels after proration, is that correct? What wells were those based on, was that a field-wide study?

A It was based on the north end, Mr. Webb, and the pressures were measured in the Ralph Lowe operated wells.

Q In the Lowe wells?

A In the Lowe wells only, and the production was taken from the Commission records for that portion of the field.

Q Had there been, of course there had been some recovery of oil subsequent to your check, subsequent to your pressure drop, prior to prorationing; had there also been some additional wells drilled in the field?

A Absolutely.

Q Would that have some effect on your pressure drop?

A I would think it would.

Q You say you are just using Lowe's wells, would that have some effect on your pressure drop in just those wells?

A Well, here is this exhibit that you refer to that tabulates the pressure information at the time of the sixth survey, there were thirty-three wells in the northern portion of the field and we measured the pressures in 16; our wells were dispersed throughout the northern end of the field.

- Q How many wells were there in the field, then, after pipe line prorationing, when you made your next survey?
 - A Forty-four wells and we measured the pressures in twenty.
 - Q In twenty?
 - A Yes, sir.

MR. WEBB: That's all.

MR. PORTER: Anyone else have a question of Mr. Landua?
Mr. Kellahin.

By MR. KELLAHIN:

- Q Mr. Landua, you knew that a field-wide survey on pressures was made by the New Mexico Engineering Committee in September in the Gladiola Pool, did you not?
 - A Yes, sir.
 - Q Was that information available to you?
 - A Yes, sir, I have it tabulated on this sheet.
- Q Would you dispute the fact that according to the report made by the New Mexico Engineering Committee that the average of thirty-four wells which were under pipe line proration showed a pressure of 4,446.7 pounds, as against an average of twenty-five wells with full allowable showing a pressure of 4,521.2 pounds?
 - A I haven't examined that data.
- Q It appears on that exhibit -- I mean if the figures I have given you appear on an exhibit -- I mean not on an exhibit but in

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 the New Mexico Engineering report?

- A No, sir, I don't see how it could be.
- Q That would be a difference of some 174 pounds of pressure. I notice on your exhibit you show within the limits of the field the Anita's Field No. 1, the Jack L. Hammond Well No. 1, is that correct?
 - A Are you speaking of this well down here?
- Q Yes, sir. Do you know what that well tested? Is it a producing well, was it ever a producing well?

A Well, he has a well on the allowable schedule now, and that is this well here. I don't know if it is the one you are referring to or not.

- Q Actually that well tested water, didn't it?
- A Mr. Hammond told me that at these high rates, this 257 barrels per day, his well produced about 80 percent water, and he voluntarily cut it back on a 7-64 choke and he's getting about 170 barrels a day as an overall average, and the water percentage has reduced appreciably in this part of the field.
- Q Now in the extreme northeastern portion of the field, you show an oil well outside of the limits of the field, do you not?
- A I show an oil well up there that's outside the limits of this 8150 contour.
 - Q That is in the same producing formation?
 - A Yes, sir.
 - Q Did you have any reason for excluding it from the contour?

- A Yes, because we assume the 8150 bench mark is a base to work from.
 - Q That is a producing oil well up there?
- A Yes, sir. We have two dry holes that are also outside of that contour.
- Q Mr. Landua, the Anita Field Well No. 1, Jack L. Hammond, I believe we're not point to the same well -- if you would refer again to your map in Section 25, it would be the well to the extreme eastern part of the field.
- A He has a dry hole over here that shows a total of 12,800 feet on my plat.
- Q That you show as being inside the limits of your map, do you not?
 - A I show it as being inside the 8150 contour.
 - Q It made water initially, did it not?
 - A I have no information about this well.
 - Q It just shows as a dry hole?
 - A Yes, it shows it as a dry hole.
- Q That is the one that I was referring to, not the one you referred to that is producing on choke.
 - A I'm told it is producing on choke.
- Q That being the Anita Field No. 1 Jack Hammond, as far as you know it has never produced oil?
 - A I don't have any information about the dry hole.
 - MR. PORTER: Anyone else have a question? Mr. Fischer.

By MR. FISCHER:

Q Mr. Landua, would you say that the Gladiola Pool is essentially an anticlinal structure?

A Yes, sir, I would say it's an anticlinal.

Q And did you say that you thought that the water was connected throughout the field, or there was a water table?

A No, sir, I just said that the Devonian around this area contains water and the field is connected to a big acquifer of Devonian water.

Q We can assume, then, possibly that this is a bottom water drive, is that correct?

A Well, I'm sure that water is in contact with the bottom, but whether the drive is as active from the bottom as from the sides is something that I haven't studied.

Q At the same level we can assume then that if this was connected to an acquifer that it, for example, the 8150 level, we can assume that the pressure is equally distributed in the field?

A There's a variation in the field, in the pressure throughout the field.

Q Well, then, I forget if you said, did you think that this Lawton was water coned?

A Was water coning.

Q That the loss of the hole was due to the coning of the water?

A The loss of the hole was due to the appearance of water,

whether it coned, I don't know exactly how it got up there.

Q Well, if your workover is unsuccessful, we could assume then that your relative permeability to water is greater than that to oil?

A Well, in a fractured and vuggy type reservoir, Mr. Fischer, I don't know exactly what relative permeabilities would mean to you.

Q Well, you gave an average permeability number, then we could assume possibly that your relative permeability to water was greater than what it was to oil, by voiding your oil or by voiding your space in that oil, you sucked the water up to where it filled the portion, the area around the hole, and the oil will not come through, due to the, say the service tension or the relative permeability of the water?

- A That's true, oil won't come into the well bore.
- Q Do you think we can call that coning?
- A I just don't know, Mr. Fischer.

MR. FISCHER: Thank you.

MR. PORTER: Any other questions of the witness? The witness may be excused.

(Witness excused.)

MR. BUELL: May I add to my motion for continuance a request that the normal unit allowable be reinstated and continued until this matter can be heard to conclusion? Frankly, I think based on the record made here today that such action is certainly

justified and warranted.

MR. KELLAHIN: If the Commission please, Jason Kellahin for Hancock Oil Company. We have no strenuous objection to a short continuance of this case or a lengthy continuance, depending on what is done with the allowable. We would like to join very strongly with Mr. Buell's motion that in the event of the continuance, the allowable be restored to the normal unit allowable for this pool. We don't feel that the testimony that has been offered here today justifies the continuance of the allowable cutback, and certainly a small operator such as Hancock Oil Company is being very seriously hurt by this curtailed production in this pool. Some of the larger companies can absorb such a loss of revenues, but the smaller companies are being seriously hurt. You would be doing a serious injustice unless there is compelling evidence to the Commission to continue this cutback.

MR. QUINN; I would like to make a statement here before the Commission of our case, and that is before any further motions are made or statements made, and that is that we believe that without reiterating any of the evidence that has already gone in both from the direct examination and the cross examination and what could be called redirect examination, that enough evidence is before the Commission to justify the lower allowable which was set by the emergency order. We have no objection to a continuance of this matter, if it is stipulated that any exhibits which will be offered by any of the protestants in this matter will be furnished

opportunity to look them over, as we have presented all of our exhibits here to date; and further that we also have the right to introduce any data which we may obtain subsequent to the hearing, or prior to the hearing, and any other exhibits which we may see fit to introduce at that time.

I would like to point out that there hasn't been an iota of evidence introduced here by any of the protestants.

MR. WEBB: Mr. Porter, may I say something?

MR. PORTER: Mr. Webb.

MR. WEBB: Layton Webb with Sinclair. We are in a certainly unusual and certainly unenviable position here, in that we are not prepared to forward with the case today. It was just not humanly possible for us to get what data a thought the Commission would want in a hearing such as this. As I say, we are in a position where we are forced to ask for a continuance. I think probably if we would have had one week more we could have been ready. We are also in the position where we feel that the evidence presented today, assuming that it did justify the emergency order which the Commission was authorized to act, as I understand the rules under which the Commission acts on emergency orders, the hearing is to be held within fifteen days, and the order either becomes null at the end of fifteen days or becomes permanent, or of course by stipulation of parties or by Commission motion they can enter an interim order. Assuming that the information that the Commission

had when they entered this order at the first of the month was sufficient to show that waste was possibly being caused in this reservoir, I seriously doubt from listening to the testimony which was offered here today whether that testimony would be sufficient for the Commission to continue this order in effect to the detriment of those who are protesting it. Now what I am getting down to is that we cannot oppose the continuation of this order, if the Commission desires to do it, because we are not ready to go forward with our case today; but we do feel that if it is going to be continued, that the continuance, the case should be heard before the first of April, and we would suggest if the Commission has time for either the 31st or the 1st of April, or as I have previously suggested, at least privately to one member of the Commission, it may be possible and certainly appears now that the Jalmat case, the rehearing on the Jalmat case which is set for the 25th will not take longer than a day or a day and a half at the most, and from Sinclair's point of view we will be willing to wait if the case does continue, if you can set it down on the 26th.

Now if you are not going to continue the order, and after we listened to the testimony we felt that probably a continuation of this low allowable is not justified, then any time that the Commission desires to set the case will be satisfactory to us.

MR. ERREBO: Just a brief statement. Sunray-Midcontinent recommends continuance of the case for receipt of additional testimony and also recommends that the normal unit allowable be restored.

We don't believe that the evidence today justifies the continuation of the cut.

MR. PORTER: The Commission has decided to continue this case and try to dispose of it immediately after the Jalmat case on March 26th. We have decided that an interim order will be entered in which the 190 barrel a day allowable will be retained until the permanent order is issued.

MR. BUELL: Will the provision relating to back allowable also be included in the interim order?

MR. PORTER: Yes, sir. Thank you. The interim order will contain substantially the same provisions as the emergency order.

MR. COOLEY: You haven't ruled upon Mr. Quinn's request that all exhibits which the protestants propose to introduce be submitted to Mr. Quinn prior to the time of the hearing.

MR. BUELL: I might say that on behalf of Pan American I have told Mr. Quinn that we will get them to him as quickly as I can. I can't give him a definite date, but just assure him when we do them we will get them to him and it will be prior to the hearing.

MR. WEBB: We would be willing to get them. It will be a reasonably short time before the hearing, though.

MR. KELLAHIN: Hancock Oil Company will supply the exhibits as soon as possible.

MR. QUINN: Thank you, gentlemen.

MR. PORTER: I assume that the hearing is adjourned until

9:00 o'clock.

(Hearing adjourned.)

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STATE OF NEW MEXICO) ss COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript under my personal supervision and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this 2/ day of March, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

Asa Vearnley NOTARY PUBLAC

My commission expires:
June 19, 1959.

DEARNLEY - MEIER & ASSOCIATES INCORFORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 27, 1958

IN THE MATTER OF: Case No. 1394

TRANSCRIPT OF PROCEEDINGS

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546

BEFORE THE OIL CONSERVATION COMMISSION Santa Fe, New Mexico March 27, 1958

IN THE MATTER OF:

The hearing called by the Oil Conservation Commission of New Mexico, at the request of Ralph Lowe, et al., to consider the reduction of allowables in the Gladiola Pool in Lea County, New Mexico.

) <u>Case 1394</u>

BEFORE:

Mr. A. L. Porter, Jr. Mr. Murray Morgan Governor Edwin L. Mechem

TRANSCRIPT OF PROCEEDINGS

MR. PORTER: The meeting will come to order, please. The case now being considered before the Commission is Case 1394.

MR. PAYNE: Case 1394: In the matter of the hearing called by the Oil Conservation Commission of New Mexico, at the request of Ralph Lowe, et al., to consider the reduction of allowables in the Gladiola Pool in Lea County, New Mexico.

MR. PORTER: To review this matter briefly, an emergency order was issued by the Commission, I believe effective March 1st, which reduced the maximum allowable in the Gladiola Pool to 190 barrels a day. The order called for the matter to be heard, of course, at the regular March hearing. The case was called at that time, and some testimony was presented. The matter was continued

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 to the 26th, and successively continued until today. In the meantime an interim order was issued maintaining the 190 barrel allowable until the matter is finally resolved.

Who has testimony to present at this time at this session? MR. EASLEY: If the Commission please, I'm sorry if I am going to disappoint the Commission, but at this time the Applicants, Ralph Lowe, et al, move that the application be dismissed. By way of explanation, I would like to say that the application, of course, was made in good faith, based on what evidence we had at that time which was considered by the experts of Ralph Lowe to be ample evidence that there was waste being committed in the field in the reservoir, and I would like to state that the position of Ralph Lowe and his staff hasn't changed in that regard. We still maintain the view that the rate is too high to get the most out of the recovery in the pool. We feel that there are a number of danger signals there that should be heeded, but the other operators in the field, major operators who are represented here, we have conferred with them, and they of course are reasonable in their demands. They feel that they have ample evidence to show that the present rate that has been set, the statewide rate, is not too high for the field; and they think that they have evidence to support that, and were prepared to present it here. However, after discussing it with them we have, and this is merely advice to the Commission. we have made an agreement that each operator in the field will appoint a member of a committee to conduct a thorough study of the

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to now plus any studies or surveys that the committee sees fit to make.

All of the operators, of course, are in substantially the same position. They all want to make the most out of the recovery and we feel that all of us are in good faith in that regard and that we may come up with something that will substantiate our view or their view. If it substantiates theirs, why of course Ralph Lowe and the other Applicants certainly are willing to take the oil out of the ground if it won't disturb the situation as we have claimed it will; and we feel that these surveys will make it possible to make a more intelligent appraisal of the situation.

We would like to make it plain to the Commission, as I say, that we haven't abandoned the idea that this is too rapid a withdrawal, that the water is encroaching at too rapid a rate, and we want to make it plain that although we have stipulated or agreed with the other operators that this Committee will report back to the operators within a six months period, we want to be open that if any changes take place there which might jeopardize the position of Mr. Lowe, that we will be free and will certainly come back in and ask the permission of the Commission for some relief.

I believe that fairly states the situation. Of course, the April allowable has cut it back to within a reasonable range of what we were asking for initially, and we think that although it may be too high, it isn't so high that within six months it will do

Dearnley - Meier & Associates Incorporated General LAW Reforters Albuquerque, New Mexico 3-6691 5-9546 procedure there, we agree that be made a part of the motion.

MR. BUELL: A part of the motion?

MR. EASLEY: Part of the motion.

MR. BUELL: Thank you. I would like to state that we are prepared at this time to go forward with our presentation, as we told you we would be when we asked for the continuance. I make that statement simply because we were a company asking for a continuance. I would like to point out that the Commission shouldn't construe our concurrence to this motion for dismissal as a lack of confidence in our case. On the contrary, it is a complete confidence in our case that makes us concur with this motion. We feel that Mr. Lowe is sincere in his views as expressed by Mr. Landua, and we are just as sincere in our views, and will express here today if the case isn't dismissed, since we feel that we are all reasonable people, we think that the proper way to handle it would be through the committee method. We fervently hope that at the conclusion of the study another hearing will not even be necessary.

I would assume that if the Commission grants the motion that some type of order cancelling the interim order that is now in effect will be issued.

MR. KELLAHIN: Jason Kellahin of Kellahin and Fox for Hancock Oil Company. Hancock Oil Company concurs in the motion for dismissal on the same basis as stated by Mr. Buell. Hancock Oil Company did not desire a continuance at the previous hearing

Dearnley - Meier & Associates Incorporated General Law Beddiess Albuquerque, New Mexico 3-6691 5-9546 and was prepared to go forward with the testimony; subsequent to that Hancock with the other operators has worked up additional information and is prepared to offer it today.

Hancock did not feel then or feels now that waste is occurring in the Gladiola Pool. By that I do not want to infer that we question the good faith of Ralph Lowe in filing the application, and to me of equal importance, I want to emphasize the fact that Huncock feels that the Commission did the only thing it could do in entering the emergency order. We have no criticism of that action on the part of the Commission. However, if there is any further study on this, Hancock is most anxious to participate in it and will work with the other operators in developing all the information possible to determine just what the situation is in the Gladiola Pool. They are just as anxious that this pool be produced on a proper basis as Ralph Lowe or any of the other companies involved there.

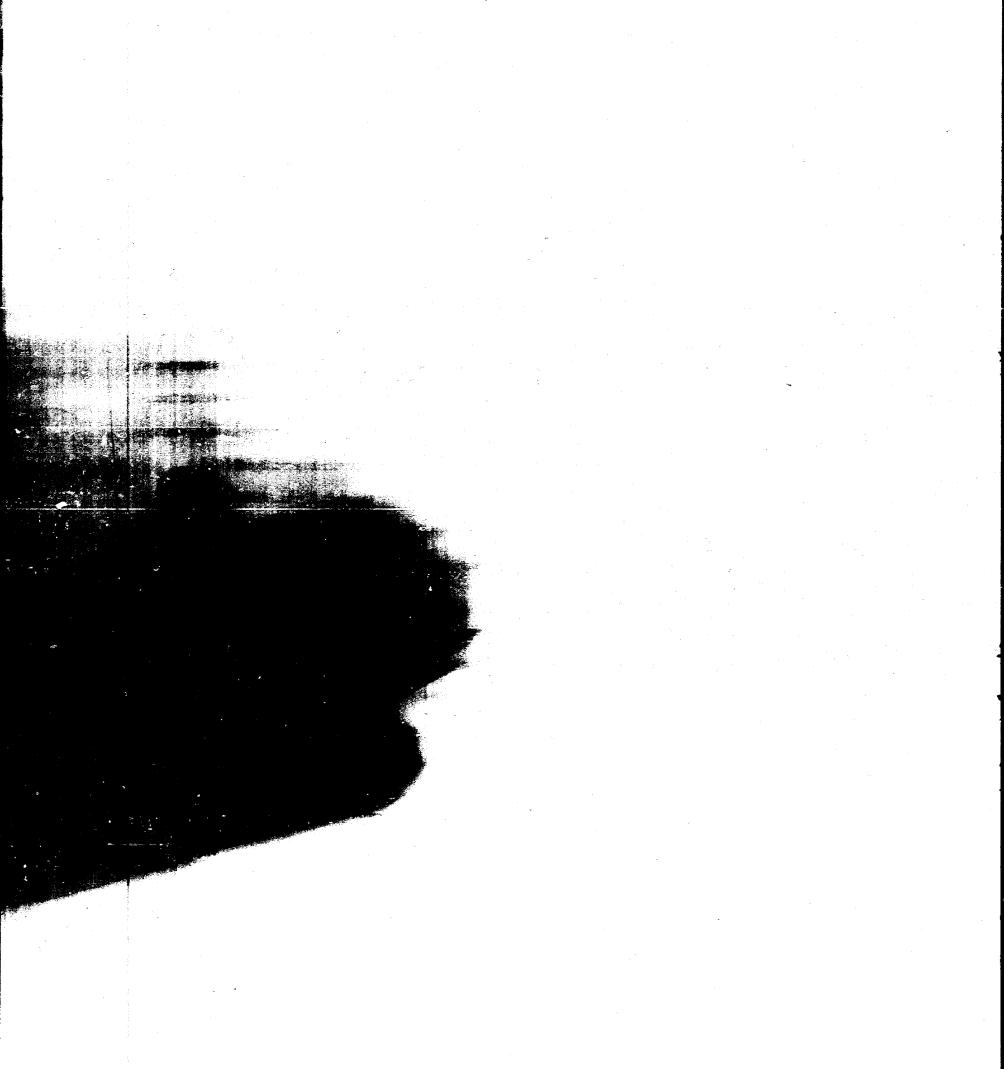
MR. WEBB: Layton Webb for Sinclair Oil and Gas Company.

I would like to concur in both the statements by Mr. Buell for

Pan American and Kellahin for Hancock; and also make the additional statement to the effect that since we were one of the parties requesting the continuance in this case, we have made what we consider a complete study of this field and are prepared to go forward with the case at this time.

We would like to thank the Commission for setting it down at as early a date as they did, although I want to apologize to

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the Commission for a statement I made that I said that I thought the Jalmat case would not take over a day or a day and a half.

MR. WATTS: Watts, with Aztec Oil and Gas Company. Aztec does not operate any wells in the Gladiola Pool. However, we do have interest in wells operated by Ralph Lowe, and because of our small interest in the pool we have not made a thorough study of the reservoir. However, we do recognize that water encroachment can be a valuable tool in production. We also believe that the data presented at the last hearing, data presented by Ralph Lowe, that is, concerning pressure drop in production was significant data. We would like to concur with Ralph Lowe, and at the time recommend a short period with reduced withdrawals so that data might be collected. I believe the operators have agreed to do this and we will concur with the dismissal of the case with that in mind.

I might add that during 1957, I believe the allowable, if you could call it an average allowable, was approximately 265 barrels a day, whereas beginning in April it will be 223 a day, so possibly that drop will aid in the collection and evaluation of the data.

MR. WEBB: I don't want to have to be sworn, and this is certainly no reflection on any evidence that was presented by Ralph Lowe; as a matter of fact, we just made the mathematical computation from the exhibit that they presented, and during this proration period I believe we calculated that the average production per well per day from Mr. Lowe's wells in the northernmost part was in

excess of 215 barrels per day. All we did was make a mathematical calculation from their own exhibits and checked those figures.

That is what it turned out to be. I don't know that we ever really had a period of cutback to 190 barrels.

MR. LANDUA: I think what Mr. Watts said was the average allowable for the whole year.

MR. WATTS: I said the average allowable of 265.

MR. BUELL: May we have the record show that I was authorized by Sunray Mid-Continent Oil Company to make a closing statement for them in support of returning the field to the normal allowable.

I am not advised as to what their position would be on this motion for dismissal, but I do want the record to show that they did authorize me to enter a statement supporting a return to the normal allowable.

(Discussion off the record.)

MR. EASLEY: If the Commission please, we withdraw our motion.

MR. BUELL: Pan American, as one operator who requested a continuance, as I stated before, we are ready to proceed. Since he has withdrawn his motion, I don't guess there's any need for us to withdraw our concurrence.

I might suggest it's rather late, and while we operators who are opposing this reduction are not opposing it in a group action, we have coordinated together in order to avoid repetition and duplication of effort. I believe the Commission would be

benefited in hearing all of the testimony uninterrupted, and it's getting rather late. I doubt if we could get through. We are willing to drive ahead and get as far as we can.

MR. KELLAHIN: On behalf of the operators who are opposing the cutback, I would like to know if there are any proponents who are in support of Mr. Lowe, I think they should proceed so they could have the benefit of the proponents' testimony. I don't know if there is anybody here who is supporting the application or not.

MR. EASLEY: I don't know of any other proponents, if the Commission please.

MR. PURTER: Is there anyone here supporting the application in this case? Mr. Easley, do you have additional testimony to present at this time?

MR. EASLEY: We don't have any testimony to present at this time, Mr. Porter.

MR. PORTER: Mr. Buell, are you ready to proceed?

MR. BUELL: We have our exhibits here. May we have a minute to get them ready and in order?

MR. PORTER: Yes.

MR. BUELL: We have one witness.

(Witness sworn.)

MR. BUELL: I think the position of Pan American is fairly clear, there is no need for a lengthy opening statement, so we will just get on with it.

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DANIEL R. CURRENS

called as a witness, having been first duly sworn on oath, testified as follows:

DIRECT EXAMINATION

By MR. BUELL:

- Q State your complete name, by whom you are employed, and in what capacity, and at what location?
- A Daniel R. Currens, employed by Pan American Petroleum Corporation as a Reservoir Engineer, Roswell, New Mexico.
- Q Does that office have supervision over Pan American's operations in the Gladiola-Devonian Pool?
 - A It does.
- Q Have you testified at prior Commission hearings, Mr. Currens, and are your qualifications as a petroleum engineer a matter of public record?
 - A Yes, sir.
 - MR. BUELL: Any questions?
 - MR. PORTER: No, sir.
- Q Let me ask you whether or not all the exhibits which we will present were either prepared by you or under your direct supervision?
 - A They were.

(Pan American's Exhibit No. 1 marked for identification.)

Q Let me direct your attention, Mr. Currens, to what has

DEARNUEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 been marked as Pan American's Exhibit No. 1. What is that exhibit?

A Exhibit No. 1 is a map of the entire Gladiola Field, reflecting the structure of the Devonian in this area. It shows the wells that have been completed in the Devonian and those wells that have penetrated the top of the Devonian. It further shows the trace of a cross-section from north to south through this field.

Q Directing your attention back to the March 13th portion of this hearing, Mr. Currens, do you recall the structural interpretation that was presented by Mr. Landua?

A I do, yes, sir.

Q In that connection, let me ask you this. Is there any material difference in your structural interpretation and that presented by Mr. Landua?

A There's only one thing that we reflect in different manners, actually.

Q Briefly describe this disagreement.

A In the northern portion of the field, the minus 8100 foot contour line on the top of the Devonian shows a slightly different picture in this exhibit than it did in Mr. Landua's. As you may recall, in Section 6, Township 12 South, Range 38 East, the Lew Wallace No. 1 was reflected as being low, and in Section 32, Township 11 South, Range 38 East, Lawton State No. 2 was reflected as being low. Now I also recognize that these wells are somewhat structurally lower than the surrounding wells. It is just that we depict it in a different manner. As you recall, he depicted

showing them in a sink hole, more or less. My interpretation would show them to be in valleys rather than in sink holes.

Q Other than the difference that you have just discussed, generally speaking are the interpretations pretty much in accord?

A Yes, sir, I would say they are substantially the same.

Q As I recall, he showed as the outermost contour line on his structural presentation minus 8150. Is that the outermost contour on your map?

A Yes, it is.

(Pan American's Exhibit No. 2 marked for identification.)

Q Mr. Currens, I direct your attention to what has been marked as Pan American's Exhibit No. 2. What is that exhibit?

A That is a cross section from south to north through the Gladiola Field. It reflects the top of the Devonian as we would encounter it along this trace. It starts in the southwest on Ohio State E-476-A No. 2 and proceeds north through the field to Ralph Lowe State "A" No. 2. It is located in Section 32, Township 11 South, Range 38 East. This is the trace of the cross section we saw on Exhibit 1.

Q This is just another manner of showing structure?

A Yes, this is just to show you the structure and the horizontal plane across the trace of the cross section.

Q I notice on some of the wells on this exhibit, Mr. Currens, that the log does not penetrate the entire Devonian productive section. Why is that?

A Well, there are a number of scratch-type completions in this field.

Q What do you mean by "scratch-type completions"?

A Well, scratch-type completion, which is not an unusual sort of thing in a water drive field of this sort, it means that you penetrate the top of the producing interval only. You don't drill all the way through your oil column.

Q Do you have any other comments to make on this exhibit?

A No, sir.

(Pan American's Exhibit No. 3 marked for identification.)

Q All right, Mr. Currens, I direct your attention now to what has been marked as Pan American's Exhibit No. 3. What is that exhibit?

A Exhibit No. 3 is a series of performance curves versus time for the entire Gladiola Field. We show in here the number of wells in the field, the daily production rate for the field, the cumulative production for the field, and the reservoir pressure.

Q I will ask you to discuss each of those curves starting first with the uppermost curve which I believe is the pressure curve. Briefly describe the pressure curve.

A The pressure curve which is the topmost curve here on Exhibit

No. 3 shows a discovery pressure of the field which was approximately 4820, and proceeds in a very flat manner, very little pressure decline throughout the life of the field to a point here on January 1st, 1958, of approximately 4357 pounds.

Q Mr. Currens, I notice some various symbols on that pressure curve. What do they reflect or signify?

A Well, you note that some of the points are represented by dots enclosed in circles, these are points that are taken from the fieldwide pressure surveys as run by the N.M.O.G.C. There are other points here that are dots enclosed in triangles. These are the pressures that were reported by Mr. Landua in the March 13th hearing as the pressures run on the Ralph Lowe wells at various times. There's one last point here on the end, which is enclosed in a square, which represents the pressure on some wells that we ran ourselves the first of March, certain Pan American wells.

Q Let me see if I understand the dot within a circle, field-wide survey?

- A Yes.
- Q Dot in the triangle, Ralph Lowe wells?
- A Yes.
- Q Dot in the square, Pan American wells?
- A Yes.
- Q Does that pressure curve also reflect the pressure of the initial well in the northern area of this reservoir?
 - A Yes, sir, the first triangular dot we see here is the

discovery well in the north end of the field, which was, oh, the latter part of March, 1956, Ralph Lowe's, 4708 pounds on the discovery well.

Q How did the initial pressure come in in the north end, with respect to the curve reflecting the average pressure in the southern portion of the field?

A Came in right on the line with the fieldwide surveys.

Q Would you go now to the next curve on that exhibit, the cumulative curve?

A The cumulative curve is simply a reflection of the cumulative production in this pool, showing out here as of 1/1/58 we have a cumulative production of slightly more than nine million barrels of oil from the field. It is easy to see from this with only a 459 drawdown and the production that we have a water drive field. I don't think anyone doubts that.

Q Will you go now to the next curve?

A This is the daily producing rate for the entire Gladiola Field, ending out here on the last day of 1957 slightly more than 20,000 barrels per day. The January rates also reflected on there, which is something over 21,000 barrels per day.

Q The bottom curve?

A It shows the number of wells that were completed in the field with respect to time, the end of the year was approximately 84 wells, as I recall.

Q All right, Mr. Currens, before we leave Exhibit 3, let me

DEARNLEY - MEIRIE & ASSOCIATES INCORFORATED GENERAL LAW REPORTERS ALBUQUEROUS, NEW MEX.CO 3-6691 5-9546 direct your attention back momentarily to the plot you have of the I.P. in the northern area of this reservoir.

- A Yes, sir.
- Q Approximately how far was that well located from the older producing wells to the south?
 - A It would be about two miles, maybe a little more.
- Q Would the fact that that well came in at the approximate range of pressure of the older producing wells indicate to you that in this reservoir production from wells in one area of the reservoir will affect wells or other portions or areas of the reservoir?
 - A Yes, sir, I certainly believe it does show that.
- Q Based on your study and analysis of this Devonian reservoir, are you of the opinion that to arrive at accurate engineering conclusions it is necessary to study the entire reservoir?

A Yes, sir, I believe that in this reservoir, with the small pressure differentials we might have between various areas, that the only valid way to make a reservoir study is to study it in the whole, not by parts.

Q Mr. Currens, I want to call on your memory again and ask you if you recall at the March 13th portion of this hearing where Mr. Landua testified as to, I believe it was production per pound drop for certain increments of time?

A Yes, sir. I remember that. He presented an exhibit which in part showed the barrels of oil produced per pound pressure drop

for periods of time.

Q In your opinion as an engineer, Mr. Currens, is that a valid method of calculation upon which you can base a sound engineering conclusion as to efficiency of performance or ultimate recovery?

A I don't see how you could base any conclusion of that sort on that type of information. It simply says that for a period of time we produced so much oil and had so much pressure drop while we were doing it.

Q Has it been your general experience in working on reservoirs, Mr. Currens, that when you use data accumulated over a short increment of time, when you consider the long life of an oil field, that sometimes the results of a calculation over such a period could be very misleading?

A It's often misleading, yes, sir, very often.

Q Can you recall, Mr. Currens, any other limitation on the type of calculation that Mr. Landua made at that hearing?

A Well, as I recall that was based on pressures which were run from the Ralph Lowe wells only, and further on the production from the North Gladiola Field as it was then called, only.

(Pan American's Exhibit No. 4 marked for identification.)

MR. PORTER: Let me ask you, Mr. Currens, while Exhibit No. 4 is being passed out, have you made a similar calculation for the same increments of time used by Mr. Landua, only your calculations were on a fieldwide basis?

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- A Yes, sir, using fieldwide production data.
- Q Directing your attention now to Pan American Exhibit No. 4. briefly explain what that exhibit reflects.
 - A Exhibit No. 4 as to what it reflects, is that what you said?
 - Q Yes, its composition, headings.

A Looking at Exhibit No. 4 we see we have a column which shows date, fieldwide pressure at that date, fieldwide production which would be an increment from the previous date to that date, the barrels of oil produced per pound of pressure drop for the entire Gladiola Field for that same increment of time, and the numbers that were reported by Mr. Landua at the March 13th hearing for that same period of time.

Q Mr. Currens, looking at the last two columns on this exhibit, do you see that these calculations form any kind of a pattern or trend or indicate anything in a uniform nature of any kind?

- A Between the two columns?
- Q Yes.

A No, there's no particular correlation between the two columns.

Q This is more or less self-explanatory and we won't go into each calculation for each period of time, but let me direct your attention to the first calculation you made for the period ending December 21st, 1956, compare the fieldwide with the North Gladiola area.

A Fieldwide would be 43,900 barrels of oil produced per pound

pressure drop. The North Gladiola area shows 1850 barrels of oil produced per pound pressure drop.

- Q Just looking at those two figures alone, Mr. Currens, and nothing else, that would indicate to you that one area of the field was operating much less efficiently than any other area?
 - A Just looking at those figures?
 - Q Yes, just the figures alone.
 - A Yes, sir, it might indicate that.
- Q But you as an engineer who studied this field know that circumstances and facts in the field completely explain that difference?
 - A Yes, sir, I think there is a very good explanation for that.
- Q For the benefit of the Commission, you might briefly tell them what causes the difference between those two calculations.
- A Well, it would depend on the number of wells that were completed during that period of time, the wells that were in the field at that period of time. Certainly the development in 'North Gladiola area was small in comparison to the fieldwide development as a whole.
 - Q And we are dealing with a common reservoir?
 - A Yes, sir, it is certainly common reservoir.
- Q Now if I interpreted Mr. Landua's testimony correctly, the figures that caused him the greatest apprehension were for the last two periods of time, the period ending August 1, 1957 when he compared it with December 1, 1957. Would you briefly discuss

the result of the calculation for the North area as presented by Mr. Landua, and compare those with the fieldwide calculation?

A Well, for those two periods of time you named, the increments ending August 1st and December 1st, the North area as the information presented by Mr. Landua shows had a production of 19,200 barrels of oil per pound of pressure drop during the first period and a production of 6,580 barrels of oil produced per pound pressure drop for the period, indicating that it was going down there. Looking over at the entire fieldwide results, we can see that for the first period it was 20,000 barrels per pound drop and for the second period there, the latter period I'm discussing, 20,200 barrels of oil produced per pound pressure drop.

Q In other words, on fieldwide, if this is a measure of efficiency, you show that the reservoir is improving in its efficiency, do you not?

A I would think that if this were a measure of efficiency of the reservoir it would show that it was producing at a more efficient rate.

Q If you believe that a calculation such as we have been describing was a valid thing from which to draw an engineering conclusion, could you conclude in any way that the rate should be reduced, based on that calculation?

A If I were of the conviction that this showed us that information, I could only say that the reservoir was being improved as time went on, based on these numbers that we show, these data.

Dearnley - Meier & Associates Incorporated General Law Reporters Albuquerque New Mexico 3-6691 5-9546 Q You can see nothing there to necessitate a reduction in allowables?

A No, sir, I couldn't see anything from that that would necessitate a reduction in allowables.

Q Let's put Exhibit 5 up on the board.

(Pan American's Exhibit No. 5 marked for identification.)

Q Mr. Currens, I now direct your attention to what has been marked as Pan American's Exhibit 5, and I'll ask you to explain what that exhibit is, please.

A Exhibit No. 5 is a plot of reservoir pressure versus producing rate for the entire Gladiola Field. We can see that we start up here early in the life of the field with the first information we have, with a low producing rate and a high pressure. We extend along a very straight and flat curve to a point out here something in excess of 21,000 barrels per day and a pressure, oh, on the order of 4300 pounds.

Q Now on our Exhibit 3 we plotted pressure versus time. Is this simply another method of plotting pressure?

A 'es, sir, it is another method of plotting pressure, changing the variable and making it rate this time.

Q you see anything in the attitude of the pressure curve which you we plotted against producing rate that would give you any alarm f. m the standpoint of efficiency or ultimate recovery?

A It i. certainly a very flat sort of curve. We have rate

varying from 300 barrels to 21,000 barrels and very little pressure drawdown.

Q Let me ask you this, Mr. Currens, are you of the engineering opinion that in this Devonian reservoir the greatest ultimate recovery of oil will result from pressure maintenance or through drawing down the pressure?

A It's my firm opinion that we will recover the most oil from this reservoir if we can drop the pressure as far as is possible.

If we maintain pressure in this reservoir, we are going to leave oil behind, thereby causing waste.

Q Will you then assume for the purpose of this question that pressure maintenance would result in the greatest ultimate recovery. With that assumption let me ask you this. If you were of that opinion, is there anything in the attitude of hat pressure curve that would alarm you?

A If I were of the opinion that we could recover more oil by pressure maintenance, I certainly wouldn't be alarmed by this curve. We have a very flat curve, it's very little drawdown for this period of time for the wide increase in rates that we show here. It couldn't alarm me, no, sir.

Q All right, Mr. Currens. Let's put Exhibit 6 on the board, please.

(Pan American's Exhibit No. 6 marked for identification.)

Q What is Exhibit No. 6?

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A Exhibit No. 6 is another map of the Gladiola Field. It is essentially the same as we presented in Exhibit 1; however, the trace of the cross section is not on this, and certain wells are encircled in blue.

Q Does this exhibit have plotted by each well certain basic data relating to that well?

A Yes, sir, it does. As an example, here, let's look in Section 18, the Slack Hancock No. 2 in the southeast quarter of the northwest quarter of Section 18.

Q All right.

A You will note here that we show the elevation and the well number by the well. You'll see a single number which is a negative number below it, in this particular case, minus 8090, that reflects the top of the Devonian for that well. Beneath that you see two other numbers, in this case minus 8092 to minus 8107, which would reflect the completion interval in that well, and above it a number, plus 43, this shows the bottom of the completion interval with respect to minus 8150.

Q Now, with reference to minus 8150, in your opinion is that a reasonable pick of the water-oil contact?

A Yes, sir, I would say it was a reasonable estimate of the water-oil contact within say, oh, ten or fifteen feet.

Q I believe you said the wells colored in blue are wells that are now making water, is that correct?

A Yes, sir, this is through February, information as reported

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 to the Commission.

Q In that connection, let me ask you this, Mr. Currens. Generally speaking are those wells around the edge of the structure or completed low in the producing formation?

A You only need to follow them around and see that they are all edge wells on the structure, practically without exception.

There is one exception here in Section 18, Sinclair's Rosa Schultz

No. 1. Otherwise they are all very low wells structurally.

Q With respect to Sinclair's Schultz well, did the operator have some trouble in effecting a completion in that well?

A He had a great deal of trouble getting a completion in there, they were pretty deep in there.

Q In a water drive field such as we have here, and the cumulative production which we have enjoyed, do you find anything unusual or unexpected about low wells or edge wells making water?

A No, sir, I don't see anything unusual about that. On the contrary, I would be surprised if these edge wells in these low structural completions weren't making water in a field of this type with this type drive mechanism; anything else would be a surprise to me.

Q Directing your attention back again to the March 13th portion of this hearing, and in view of your statement that you just made, I take it then that you are in general agreement with Mr. Landua that as of that time that the edge wells making water was normal?

A Yes, sir.

Dearnoley - Meier & 7550.771 Incorporate 1 Geneval Lay Paro 1955 Auguqueroue, New Mexico 3-6691 5-9546 Q And that the only unusual factor that existed at that time was the performance of Lowe's Lawton State No. 2; are you in general agreement with that?

- A Yes, sir, I am in general agreement with that.
- Q What was the status of the Lawton State No. 2?
- A That well had gone to 100 percent water as of that time.
- Q Was testimony introduced to the effect that a workover rig was over the hole at that time?
- A Yes, they did say that workover was being attempted on this well.
- Q In the interim period between March 13th and today, what has happened to that well, based on information furnished to us by Mr. Landua?
- A Mr. Landua furnished information to Pan American that Lawton State 2 had been worked over and it was now producing pipe line oil without a trace of water.
- Q I realize that Mr. Lowe's representatives will probably put in full detailed information about the workover and the completion, if they see fit, but let me ask you this. Did he also furnish us the present completion interval?
- A Yes, sir, he furnished us the present completion interval in that well.
 - Q Would you compare it with the old completion interval?
- A Now he has some eighteen feet of section open, all but two of those being section that was opened previously before this

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 workover.

Q All right. In view of the apparent successful completion of Lawton State No. 2, in that it is now producing without any water at all, would you say that there is no unusual or unnormal or abnormal condition in the field at this time?

A Now that that well has been brought back to an oil producing status and is now an oil producing well, I fail to see anything unusual happening in this field at this time.

Q I will ask you to put up Pan American's Exhibit No. 7.

(Pan American's Exhibit No. 7 marked for identification.)

Q What is Exhibit No. 7, Mr. Currens?

A Exhibit No. 7 is a plot of reservoir pressure versus cumulative oil production for the entire Gladiola Field. It simply shows the pressure versus the production at any time.

Q Let me direct your attention to the extreme left portion of that exhibit and ask you the significance of the dashed line that goes in a downward manner, or what that dashed line reflects? Yes, sir, the one to the left.

A The dashed line here on the left simply would be what the predicted performance of this field would be with a depletion type drive field, comparing the recovery that we could expect with the drawdown to the bubble point pressure, which is 537 pounds; we can see that it's,oh, something slightly over six million barrels of oil. It will serve to point out again that we have a water drive

field here.

Q Let me direct your attention again, still on the left portion of the exhibit, to the solid line that starts at the left and goes right in a more or less horizontal manner, what is that solid line?

A The solid line we show up here with the points is simply a plot of the reservoir pressure versus the cumulative production for the entire reservoir.

Q All right. I notice where the solid line stops, a dashed line picks up and continues on to the extreme right portion of your exhibit. What does that line reflect?

A Well, that line is simply an extrapolation of the trend of pressure cumulative that we have had previously here. It's certainly not a prediction, it'just says if this trend were to continue what would happen. You will note that it stops at a point down here which is thirty-four and a half million barrels of cumulative recovery. That's the recoverable oil from the reservoir, by my calculations.

Q All right. In other words, to draw that horizontal dashed line you just assumed that the present trend that we have noticed to date would continue?

A Yes, sir, that's all.

Q You recall Mr. Landua's testimony to the effect that in his opinion the pressure in this Devonian reservoir would never decline to anything near the bubble point, do you not?

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- A Yes, sir, I recall that.
- Q Are you in agreement with that testimony of Mr. Landua?
- A I certainly am. We have a bubble point pressure point here of 537 pounds, we'll never reach that bubble point pressure. I certainly wish we could. We would recover more oil if we could.
- Q From the standpoint of increased recovery, then, it is your opinion that the nearer or the more approximate the pressure is drawn down to bubble point, the greater the increased recovery of oil?

A If we were to draw this pressure down to the bubble point and slightly below, if we were able to do that, that's the place that we would realize the maximum recovery from this reservoir.

Q Since we know, or both of our witnesses that we have had are in agreement that we will never approach the bubble point, let me ask you this. What factors will come into play between the current pressure that we now have and a point above the bubble point pressure that will tend to increase ultimate recovery? What are those factors?

A Well, there are certain physical factors that we would have to consider. Naturally you have got your reservoir volume factor; as you decrease pressure on the crude oil, it's above its bubble point. You decrease pressure, you cause that oil to expand. As it expands it helps drive more oil out of the reservoir. You would have an improved viscosity relationship with a decrease in pressure. As you release the pressure from the crude, you make the oil less

viscous, and cutting its viscosity allows it to flow more easily. You have got the expansibility of the reservoir rock, as you decrease pressure on the rock in a reservoir. We have a reservoir here of 12,000 feet, you decrease the pressure on that rock, the rock expands, squeezing more oil out of the pores. You would have connate water expansion, the connate water from the reservoir would expand. All these things would be factors that would help increase ultimate recovery with a decline in pressure. If we can draw the pressure down we will get more oil out.

Q Mr. Currens, I will ask you to put up Pan American's Exhibit 8.

(Pan American's Exhibit No. 8 marked for identification.)

Q What is Exhibit No. 8, Mr. Currens?

A Exhibit No. 8 is designed to show the increased oil recovery that we can get from this reservoir as a result of oil expansion, simply by increasing the reservoir volume factor as we lower the pressure.

Q All right. Let me direct your attention to the extreme right portion of that reservoir and ask you what that set of curves thereon represent?

A Well, on the extreme right we show three curves on this figure. The top one is the reservoir volume factor, which shows that as the pressure decreases the oil expands, the reservoir volume factor increases, oil viscosity, which shows as the pressure is

OEARRIEN - ME ER & ASSOCIATES INCORPORATED GENERAL LAW ROCCIONS ALBUQUERQUE NEW MEXICO 3.6691 5-9546 decreased the oil becomes less viscous and can flow more easily; and a rock expansibility curve which will show that as the pressure is taken off the reservoir rock, it too will have a certain expansion.

Q All right, now I direct your attention to the portion of the exhibit shown in red and marked Figures I, II, and III in Roman numerals. What do they reflect?

A Figures I, II, and III here are designed to show the increased recovery that we can gain from this reservoir as a result of raising the reservoir volume factor, expanding the oil, and driving it out as we reduce the pressure.

Q Go right ahead with your explanation.

A Well, looking here at Figures I and II, they're identical with the exception of the pressures shown on top of them. We can say that they represent the reservoir. Looking at Figure III, this is what we might call a combination figure, since it will reflect the recovery under these two conditions as shown in Figures I and II. Now with a fifty percent recovery factor, we will produce fifty percent of the oil, we will leave a residual oil saturation of fifty percent.

Q Excuse me, Mr. Currens, what do you mean by residual oil?

A Residual oil, saturation of residual oil is that oil that is left behind in the reservoir. Now we depict residual oil on the exhibit as the portion cross-hatched; the recovery is the portion shown in red not cross-hatched. If we were to get this reservoir with a pressure maintenance where the pressure stayed essentially

DEAPNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS -ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 what it was on the 1st of January, 1958, or approximately 4375 pounds, we would produce this amount of oil shown in Figure III as colored in red, not this part that is cross-hatched, just the part colored in red. That would represent some thirty-four and a half million barrels of oil. Now taking another condition, at abandonment pressure of 2820 pounds, I have used that figure on a previous exhibit, taking the abandonment pressure at 2820 pounds we can look over at Figure III and we can see that in addition to this solid red amount of oil, the thirty-four and a half million barrels of oil, we will get some of this oil that is cross-hatched. This is what would be residual oil that we have squeezed out of that reservoir as a result of lowering the pressure, increasing the reservoir volume factor, and expanding the oil.

Q All right, what is the magnitude of the increased oil recovery under your two pressure situations that you have set up that would result from the increased reservoir volume factor?

A This additional oil that would be residual that we would recover?

Q Yes, sir.

A That is in excess of 260,000 barrels. That is over threequarters of a million dollars' worth of oil that we can recover that we would normally leave behind if we maintain pressure, but we can recover if we drop the pressure to 2820 pounds.

Q That takes care of one of the factors you mentioned. Would you not only expect an increase due to the other factors you described?

A Yes, sir, you would have to expect certain other bonuses over here. I have only used reservoir volume factor because it lends itself to the most precise calculation. Certainly we have the viscosity improvement, the oil is less viscous and can flow more easily, has a better chance of being recovered. The rock expands, which will help squeeze more oil out of the pore spaces. I mentioned one previously in addition to these, the connate water, that will help some, too. These are bonuses in addition to what I show here, three-quarters of a million dollars' worth of oil.

Q As I see the problem that is before this Commission here today, it's concerned with the problem from their standpoint of waste from an individual well standpoint and from a reservoir standpoint. Now let me ask you this. Based on all the data that you have analyzed and evaluated on this entire Devonian reservoir, have you seen anything that indicated to you that the reduction of the allowable in this field would serve conservation?

A No, sir, I don't. I see nothing that would cause that to serve conservation.

Q On the contrary, would a reduction in allowable in this Devonian water drive reservoir actually be a dis-service to conservation?

A I think that by reducing the allowable, of course we are going to have to force the pressure up and cause a certain amount of maintenance of pressure in the reservoir, and that if we maintain pressure in the reservoir, we are going to leave behind oil

DEARNLEY: MEIER & ASSOCIATES INCORFORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 that could otherwise be recovered. If we can bring the pressure down, we are going to get the most out of the field.

MR. BUELL: That's all we have at this time.

MR. PORTER: Anyone have a question of the witness? Mr. Easley.

CRUSS EXAMINATION

By MR. EASLEY:

- Q Mr. Currens, you've testified that this unquestionably is a water drive field?
 - A Yes, sir, I believe it is a water drive field.
- Q Water drive reservoir. As far as a water drive reservoir is concerned, I will ask you if it's a fact that the oil naturally goes before the water or above the water?
 - A Yes, sir, that is generally true.
- Q Is it true also that as you remove the oil from the well bore that by virtue of that you reduce the pressure, thus bringing the other oil in with the water forcing it on in, the oil naturally coming before the water?
- A As I understand your question, you are saying that as we produce oil from the field, water comes along behind it?
 - Q Yes, sir.
 - A Yes, sir.
 - Q That is a natural consequence in a water drive reservoir?
 - A Yes, sir.
 - Q And now, in this particular reservoir here, do you have

DEARNILEY - MEIER & ASSOCIATES INCORFORATED GENERAL LAW REFORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 considerable amount of water?

- A Being produced?
- Q Yes. No, I'm sorry, in the aquifer.
- A I think there is a pretty large aquifer there, yes, sir.
- Q In the dry holes that have been drilled around the area, have you had any experience with those?
 - A live looked through the reports and records on them.
- Q Do you find water in those dry holes at approximately the level, the water-oil contact that you find in the reservoir?
- A Yes, sir. That generally would be true, particularly on the east side of the field.
- Q Let me ask you directly, do you know from your experience in the field and from the knowledge that you have of the wells that have been drilled whether or not you have an unlimited supply of water in this reservoir?
- A No, sir, I don't know that we have an unlimited supply of water in the reservoir, in the area.
- Q Would you say that you have a sufficient supply of water in this reservoir to produce the oil in place?
- A I think we have a substantial amount of water there, yes, sir.
- Q Would you say that you have a strong water drive in this reservoir?
- A Yes, sir, I would say that there's certainly the effect of a water drive being seen here.

Q Would you say that is your principal drive?

A Well, depending on what you mean by "principal drive". Now the principal drive, of course, is going to be that we will have water coming along behind the oil and pushing it ahead of it. Now the thing that we would like to do, of course, is keep a big pressure or certain pressure differential between it.

Q Ordinarily in a water drive field don't you have a sustained pressure? You don't have a real drastic drop in pressure as you would in a depletion drive field?

A No, sir, you don't expect to get as big a pressure drop in a water drive field.

- Q You have indicated in your exhibit, is that No. 8?
- A This is No. 8.
- Q You have elaborated on the expansion of the oil as you remove the oil from the well bore, and expansion of the fluids, as being a drive for the production of the field?
 - A Yes, sir, it will help drive, it sure will.
- Q Now you have approached this right here from the standpoint of how much will be produced by an expansion drive, expansion of the fluids in place?
 - A Yes, sir.
- Q Now this hasn't been on consideration of the additional water drive behind this oil pushing it before it, pushing the oil before the water?
 - A Are you talking about the increase that we would get as a



pressure drop?

Q Yes.

A No, sir, that is only the increase we would get due to the pressure drop by expansion of oil.

Q In other words, you have ignored the question there, or have eliminated the question from your consideration as to whether or not the water would produce that oil anyway, if you have a strong water drive?

A I don't believe it could produce that additional oil there.

Q Well now, suppose you explain why the oil would not be forced ahead of the water, if you have a strong water drive.

A Well, it ties to your residual oil saturation. We have to leave so much residual in the reservoir. If we leave fifty percent oil saturation, it is simply a case whether we want to leave behind compressed oil or expanded oil. If we can leave expanded oil, oil under less pressure, certainly we leave less behind and produce more. If we maintain the pressure, we keep the oil compressed, that it can't expand, it can't help.

Q Suppose we consider this point in this reservoir, now you are talking about an ideal situation, aren't you?

A This could easily happen. I am not saying it will. I'm saying we should give it the opportunity, I think it can.

Q In other words, the substance of your statement here to the Commission is that you could produce this at an unlimited allowable, say a thousand barrels a day, and by virtue of reducing the pressure

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTEDS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 that you are going to produce more oil?

A I'm not recommending a rate, but I think we can go to substantially higher rates than we now have and it won't hurt us.

Q Let's say how far can you go? You are saying that the pressure can be reduced, and because you reduce the pressure that you are going to have more in the way of an ultimate recovery. Let me ask you this question. If you produced it at the rate of 2,000 barrels a day, do you think that because of the reduction in the pressure you would have more in the way of an ultimate recovery?

A Well, I don't think we could ever see 2,000 barrels a day from this field, the situation being what it is. That would be an awfully high basic normal unit allowable. I don't care to set a number on the upper limit that we could produce this field. I think we can do it at substantially greater rates than we are now.

Q The theory that you have advanced here, that the problem of getting ultimate recovery depends on reducing the pressure; the maximum ultimate recovery depends on reducing the pressure, if possible, down to the bubble point?

A If we could possibly reduce the pressure in this field to the bubble point and even below, we would realize the maximum oil recovery from this field, in my belief.

Q Now, Mr. Currens, there are other factors which enter into each individual case which might limit the application of your theory, aren't there?

A You talking about for an individual well?

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- Q I'm talking about the reservoir.
- A Would you state that again, please?
- Q Your theory of reducing the pressure being the point which makes for more ultimate recovery varies with the situation, doesn't

A You mean --

MR. BUELL: I can't understand, may it please the Commission, what the situation is.

MR. PORTER: Just a minute.

MR. EASLEY: Excuse me, I didn't know I was being so obscure in my questioning.

Q What I'm driving at, Mr. Currens, is that the idea of dropping the pressure may not work in every instance if there are other factors like the premature encroachment of water to prevent the oil recovery?

A I think if you had a field where there was premature encroachment of water, that what you say might be true, but I don't see any premature encroachment of water in this field. We are talking about this Gladiola Devonian reservoir, I think that it is reacting just as it should, and if we could draw the pressure down we would increase the recovery.

Q Now in what manner do you propose to reduce the pressure?

A Well, sir, I wasn't advocating that we go in for some method to bring about a greater pressure reduction. All I'm saying is that there is no point in keeping the pressure up. If we're experiencing

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a pressure drop by producing at the normal rate that this reservoir would be assigned, that this field would be assigned, if then we are getting a pressure drop it is helping us.

- Q With regard to a water drive field, would you state whether or not it is rate sensitive?
 - A This field?
- Q Any water drive field. Generally would a water drive field be rate sensitive?
- A I couldn't testify on any water drive field, but I don't believe that this field is rate sensitive.
 - Q What did you find the gas-oil ratio to be here?
 - A Solution gas-oil ratio?
 - Q Yes.
 - A It is in the neighborhood of 175 cubic feet per barrel.
 - Q Is that a high or low ratio?
 - A That is very low gas-oil ratio.
- Q In cases where you have a low ratio of gas, do you have a considerable amount of expansion or a lower rate of expansion of the oil in place?
- A Possibly I could clear this up by saying that these data were taken from a bottom-hole sample that we obtained in this field, and run by our laboratory, so these are actual data pertinent to the crude in this reservoir.
 - Q Are you talking about --
 - A (Interrupting) The reservoir volume factor, the viscosity,

actually we didn't have a piece of reservoir rock in original conditions, this is a curve that you'll find in A.I.M.E. transactions as a typical carbonate curve for rock expansibility.

- Q Those were actual tests that were run on the oil and rock?
- A Yes, on the oil.
- Q On the oil?
- A Yes.
- Q Excuse me, what did you say about the rock on the bottom?
- A I said it is a typical curve as taken from A.I.M.E. transactions. I didn't make a calculation on that because it wasn't exact reservoir data.
- Q With regard to a water drive reservoir such as this, is it possible that the fast rate of production will bring the water through the permeable rock and bypass some of the oil?
- MR. BUELL: May it please the Commission, what advanced rate of production?
 - MR. EASLEY: I'm trying to get at this as theory.
- MR. BUELL: I don't want to interrupt you any more than I have to, but I would like to be able to understand the question, and some of these I'm having a little trouble with. I apologize for interrupting.
- MR. EASLEY: I'm sorry. I'm struggling with this engineering, I'll have to admit.
 - MR. BUELL: I know what he's going through.
 - Q (By Mr. Easley) Let's ask this question, if I can rephrase

it. In say the edge wells in this particular field, do you recognize that any rate of production might possibly cause premature water encroachment and leave oil in the formation?

A Well, by premature water encroachment, do you mean something like coning?

Q That, and then bypassing the oil in the formation.

A I don't believe we could bypass the oil in the formation even on these edge wells that we're speaking of, and I really don't think we could have any coming in this reservoir.

Q In other words, what you are saying is that you could produce it at any rate and you wouldn't have --

A (Interrupting) What I am speaking of there is any rate that we are liable to be granted as an allowable as a result of the normal unit allowable in this study.

Q But in other words, you recognize the principle that in a water drive field that you can produce it so fast that you commit waste in the reservoir?

A It depends on the reservoir conditions, the type of completions and things like that. Yes, that could be a case, but I don't think so in this field.

Q With reference to this field, what studies have you made with regard to the permeability of the formations?

A Well, sir, of course, we had the core analysis that Mr. Landua presented, we have core analysis on a well that we operate.

Q Have you arrived at any sort of idea about the average

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL CAN REPORTERS ALAUGUERQUE, NEW MEXICO 3-0691 5-9546 permeability in the entire reservoir?

- A I don't have the figure on the tip of my tongue, I could give you a pretty good idea if you want me to look at it.
 - Q Never mind that, I am asking if you did.
 - A Yes, I had an idea.
 - Q On the basis of the analysis of those two cores?
 - A Yes, sir.
 - Q You haven't made an analysis of any other wells in the field?
- A I have information that people have told me. I don't have access to any actual, other core data myself, as such.
 - Q On how many wells do you have the data?
- A I have the data, of course, on the well that Mr. Landua presented and Texas Crude A-19 No. 1, I believe it is, Pan American operated well.
 - Q How many cores have you the data on?
 - A Those two.
- Q And on the basis of that you have arrived at what you think is the average permeability in the reservoir?
- A No, sir, I said that what the average of those two might be, I looked at it and got an idea, yes, sir.
- Q And that's part of the basis on which you have estimated the reserves and the amount of recoverable oil?
- A The reserves are not normally estimated on the basis of permeability, Mr. Easley.
 - Q I'm sorry, but isn't that figured in as far as determining

the amount of recoverable oil?

- A You want to know where I have my recovery factor?
- Q Yes.
- A I took an average recovery factor for a Devonian reservoir, a normal expected recovery factor for a water drive field.
 - Q It isn't keyed to this particular reservoir?
 - A No, sir, but it is certainly reasonable.
- Q That is the basis on which you estimated that there would be 35.5 million barrels?
 - A Thirty-four and a half million barrels, yes, sir.
 - Q Is there homogeneity in the reservoir?
- A This reservoir, of course, I have -- no reservoir is completely homogeneous, there are certain localized conditions that can be found spot-to-spot in any reservoir that you would find.

 I wouldn't say that this is an untypical reservoir.
 - Q Untypical Devonian reservoir?
- A I said I would not say it was. I would say it was probably typical.
- Q Did you have any analysis, did you analize the porosity as far as these cores are concerned?
 - A Yes, sir.
- Q I'm wondering, I might ask you this, if we could have those as a part of the record.
 - MR. EAGLEY: Do you have those here?
 - WR. BUELL: By "those", Mr. Easley, what do you mean by "those"?

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 MR. EASLEY: The analysis of the cores.

MR. BUELL: One of them is already in the record, and the core that we have on our well, we don't have it here but we will be glad to furnish it. You put one in the record?

A Yes.

MR. EASLEY: That would be fine.

- Q (By Mr. Easley) You also have analyzed the fluids, in other words, the oil?
 - A Our laboratory did, yes, sir.
 - Q And do you have those with you?
 - A The curves that are pertinent here were drawn from those data.
- MR. EASLEY: I'm wondering if we could also request that the data be put in the record.
- MR. BUELL: We will be glad to furnish any data that we obtained from the bottom-hole samplings, a part of which is reflected on the two uppermost curves of Pan American's Exhibit No. 8.

MR. EASLEY: Thank you.

- Q (By Mr. Easley) On your pressure chart there, reservoir pressure, it is No. 7?
 - A Yes.
- Q Exhibit No. 7. Mr. Currens, on that you have shown the reservoir pressure versus cumulative oil production, and you have extended the curve there, up to the point that is shown to be nine million barrels produced; now that represents the oil produced?
 - A Yes, sir, that's oil recovered.

Q Now you have extended your curve on the basis of the amount of oil produced there?

A Sir, all I have got on that curve is to draw the line on out from the last trend that we have, following the trend out to my predicted recovery.

Q Would the increased production of water have any influence on that curve?

A Well, I didn't consider anything there. I just drew the line on out from the trend it now has. I'm not trying to predict anything there.

Q In other words, you are not representing that will be the

A (Interrupting) No, sir, I am not saying that will be the reaction of the reservoir.

MR. LANDUA: That just so happens to be my total reserve prediction.

MR. EASLEY: May I ask permission for Mr. Landua to repeat the question? What was your question?

MR. LANDUA: My question was that in Mr. Currens' analysis he estimated that he would recover thirty-four and a half million barrels by some other means, and projected from his last pressure point on to the reservoir figure?

A That simply is a projection of the last trend; that covers some four or five points to that reserve, it's not a prediction.

Q You have stated here that the chart which is represented by your No. 4 Exhibit, I believe you said that these figures were taken from Mr. Landua's report of the bottom-hole pressures?

MR. BUELL: By "these figures", Mr. Easley, what do you mean? There are several columns.

MR. EASLEY: Yes, I am sorry.

- Q These figures with regard to Mr. Landua's report of the per pound pressure drop for the production of the oil in the last column. Now those were taken from his report?
 - A Those numbers are the ones that he showed on his exhibit.
 - Q I notice that you duplicate the dates over here --
 - A Yes, sir.
- Q -- on which he took the bottom-hole pressure surveys, is that correct?
 - A Yes, sir.
- Q And then will you explain to me how you related those to the other bottom-hole pressure surveys that were made in the field?
- A Well, if I have your meaning correctly, here, you say what pressure did I use for the cumulative production?
 - Q Yes.
- A I have shown the pressures that I would find at that period of time on the figure which was Exhibit 3, was it not?

MR. BUELL: Yes, 3.

A Or the performance time curve. On these dates I have come up to fieldwide pressure curve and taken the pressure that would be reflected by that pressure on those dates.

Q Your testimony is that you don't think that is representative,

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE - NEW MEXICO 3-6691 5-9545 that that is significant at all in the determination of the production of the oil?

- A That those pressures?
- Q Yes.

A Sir, all I have said about this exhibit is that it only reflects how much oil was produced for some period of time with a certain amount of pressure drop. I don't really see where it has any further significance than that, just a factual report of what happened at some period of time.

Q You are not attempting to show that this would be the per pound drop, then, of pressure over that period of time?

A You mean that this would be the oil produced over that period of time?

Q Yes.

A Well, sir, this is the incremental oil production for that period related to the pressure as shown on the curve in Figure III for the field-wide pressure for this field.

Q But it's your testimony that you don't think that either one of the figures is significant?

A No, sir, I don't think either one of them is significant.

MR. LANDUA: May I interject a question here? I want to be sure, Mr. Currens, that these pressures are at what datum?

A Which pressures?

MR. LANDUA: The pressures on your chart.

A The pressures that are the field-wide survey are at minus

DEARNEY MEITR & ASSOCIATES -INCORTOBATED GRIPAL LAW SELDRICAS -GRIPAL LAW SELDRICAS -ASBOCIEBLIST NEW MELICO -3-6691 5-9546 8,000 feet, which is the datum for the Commission. The pressures shown for Mr. Lowe's wells are just exactly as you have reported them to the Commission, 8150. The pressures as shown here by the six wells of Pan American are at 8,000 feet.

MR. LANDUA: There may be some discrepancy in your data because you made the statement when our well was brought in that it had pressure that was tied in with the field-wide pressure. The pressure we measured was 4808 at minus 8150.

A Yes.

MR. LANDUA: You corrected the pressure back to 8,000 feet in your statement?

MR. BUELL: I requested that they be shown that way on this exhibit because I thought it would eliminate confusion that might be created if we converted them to a common datum. For that reason we plotted them exactly as he reported them. It seems that we may have caused confusion rather than saving confusion.

MR. LANDUA: He took the pressure that we measured in the discovery well when he made the statement that the pressure in our well, even though two miles from the other production, was the same as the pressure that existed in the south quarter at the time.

MR. BUELL: The question was, did it come in at approximately the same range. His answer was yes. Surely you agree with that, Mr. Landua, that it did come in at the approximate pressures of the older wells.

MR. LANDUA: If he made that at the same datum; if he didn't,

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENEPAL LAW REFORMERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 there would be about 100 pounds difference.

A Pardon?

MR. LANDUA: If you corrected our pressures back to your 8,000 datum.

A Yes, there would be how much?

MR. LANDUA: If you made your correction, if you took our 4708 and corrected it back to the 8,000 foot datum.

A Yes, sir.

MR. LANDUA: Then I would say that the range would be right. Do I make myself clear?

A I'm afraid I didn't follow you, really.

(By Mr. Easley) Would you get the exhibit there and point it out, in which you indicated the wells that were producing water

A Yes, sir, this is Exhibit No. 6.

Q I'm wondering if you would point out the wells on that map that your company operates that are producing water, and indicate the percentage of water, if you know.

A The Pan American State No. 1 in Section 19 and the State "AN" No. 1 in Section 19 are water producing wells. I don't recall the exact figures on them, it seems like one is about fifty percent and I don't know that the other is significantly different, right off-hand. I could check and see,

Q In other words, both of them are producing about fifty percent water?

A Well, one of them is, I believe. I can't think of the figure

on the other.

- Q Can you say off-hand when those wells were drilled?
- A I can look it up for you.
- Q Does that show on the map?
- A No, sir, it doesn't show on the map.
- Q Well, suppose we wait on that and then you can supply it later.
 - A All right.
- Q Do you know about the water production in the other wells along there? Are those the only two that you have that are producing water?

A The water production that we reflect on this map is the water production as reported by the operators to the Commission for January and what other operators have told me that their wells were producing water in February. They are taken from engineering committee records.

- Q Do those records show it in percentage?
- A No, they show it by barrels.
- Q By barrels?
- A Barrels of oil and barrels of water.
- Q Have you made any study of the balance of materials or the amount of water that is coming in as compared with the amount of oil that is being taken out in the reservoir?
- A Well, sir, we have only had cumulative water production, and you have something on the order, as I recall, about the first

of the year, of around 100,000 barrels. We produced nine million barrels the first of the year.

Q Does the decrease in pressure indicate that the water drive is keeping up with the withdrawal of the oil?

A Well, if you had it absolutely keeping up with the withdrawal of the oil, you would have absolute pressure maintenance.

Q Does that indicate that there is any absence of permeability that prevents the water from coming in to push the oil forward?

Is there anything significant about that?

A Well, let's look at this. If we have a large connected aquifer to that field, that thing has a lot of inertia in it, it takes some time in a water drive field before water shows up. You expect to see it show up, certainly, because it is a water drive field. You shouldn't produce water with the first drop of oil you produce from a water drive field.

Q Now your statement that it's good for the pressure to drop depends upon whether or not you flood the wells out, isn't that correct? If you are going to decrease your pressure to the point where you flood some wells out, then that would not be economic recovery, would it?

A You mean that by decreasing the pressure, suck a whole lot of water into the reservoir?

- Q Yes, or suck a whole lot of oil out.
- A Out of the ground?
- Q Yes.

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- A That is recovery.
- Q I'm talking about the ultimate recovery.
- A I think the only way we can effect the maximum ultimate recovery from this field is to get the pressure down as far as it will go. Anything we do to keep the pressure up is going to deplete the ultimate recovery and leave more oil behind.
- Q At the expense of producing a lot of water in some of the other wells?

MR. BUELL: I wonder if you could be a little more definite.

I think Mr. Currens is trying to answer your questions.

MR. EASLEY: Let me try again.

Q In the event that the allowable is held up to the point that it is now, say 223 barrels, but that as a result of that that the water is prematurely drawn into wells in the reservoir, do you think in your judgment that the reduction of the pressure or the allowable is justified?

MR. BUELL: May it please the Commission, this witness has already testified that in his opinion coning does not exist in this field and would not be created producing at any foreseeable normal unit allowable for the State. He has already answered that question once.

MR. EASLEY: It is a hypothetical question.

MR. BUELL: You want him to assume that you have coning?

MR. EASLEY: Yes.

A You want me to assume you have coning?

DEARNLEY: MÉIER & ASSOCIATES INCORFORATED GENERAL LAW REFORTERS ALBUQUESQUE, NEW, ME 000 3-8691 5-9546 Q Or premature edge water being pulled in because of the rapid withdrawal.

A If I were to assume that water production was premature, which I don't think it is, but if I were to assume that water production was premature, then I would have to assume that that condition was unfavorable.

Q Then your theory of reducing the pressure is predicated on the fact that you have to avoid the premature production of water?

A I don't think we have any premature production of water in this field.

MR. EASLEY: If the Commission please, may Mr. Landua ask a question or two here?

MR. PORTER: Surely.

By MR. LANDUA:

Q I would like to start with the Exhibit 3, that is the one I would like to ask you a few questions about.

A Performance time.

Q Yes.

A Yes.

Q Mr. Currens, isn't it the usual practice whenever you plot your performance curve on a reservoir to go ahead and include the water production as well as other production?

A Well, sir, we have -- are you talking about, say here on cumulative?

Q I'm just wondering why the percent water or the amount of

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUEROUE NEW MEXICO 3-6691 5-9546 water taken out of the reservoir hasn't been depicted on your curve?

A Water production is very small. If I were to put it, say the cumulative water production on the cumulative curve, you couldn't see it.

Q You could have a large scale on the side to depict the increase in water that has occurred?

A Yes, it wouldn't be on the same scale, it wouldn't be a fair comparison.

Q I understand that, but your pressure is on a different scale, too. It is possible to put it on?

A Yes. I have the figures, if you would like them.

Q I have them, too. I just wondered why they weren't shown on the curve.

A They were rather small amounts and I didn't show them because they would hardly show.

Q Good. You made the statement, I believe, that this barrel per pound drop was not any measure of the efficiency at which a reservoir was being produced?

A I think that only says that this reservoir did that at that time.

Q Then on down in your testimony, you use these figures on Exhibit 3 to say that you thought the reservoir efficiency was being increased?

A No, sir.

MR. BUELL: Hold it. May it please the Commission, Mr.

DEARNLLY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS - ALBUJUERGUE, NEW MEXICO 3-6691 5-9546 Landua must have missed this, and I am sorry; but I specifically asked him to assume for the purpose of this question that that is a valid engineering tool to use, and it was on that assumption only that he said, with that assumption, from 2,000 to 2,200, that assumption, that would be good efficiency, but he assumed that, Mr. Landua, that is not his opinion.

MR. LANDUA: He believes that the barrels per pound drop is no measure.

MR. BUELL: He testified to that, over a short increment of time. When you look at the long life of a reservoir, he testified it isn't a valid basis to drawing an engineering conclusion to reservoir efficiency and what you might expect in ultimate recovery.

Q (By Mr. Landua) Now he said that the efficiency was being improved, if you assumed that was a measure; now your first increment of 43,900 barrel per pound drop, and the last one, you only have 20,200?

A We were only --

Q Would you assume from those figures that the reservoir was being produced half as efficiently as it was in your first increment?

A Well, sir, we were only discussing the last two points in here.

MR. BUELL: I don't believe either Mr. Currens or myself understood that question, if it was a question.

Q Exhibit 3 --

A Exhibit 4.

Dearnley . Meier & Associates Incorporated General Law Reporters Albuquerque, New Mexico 3-6691 5-9546 Q Exhibit 4, the question is, in the first pressure increment that you report by your figures you say that 43,900 barrels of reservoir oil was obtained for each pound drop in bottom-hole pressure?

A Yes, sir.

Q Then on 12/1/57 for that increment you say that the barrels recovered for each pound drop was only 20,200?

A Yes, sir.

Q Is it your assumption or conclusion here based on these figures that this reservoir was being produced half as efficiently?

MR. BUELL: Pr.don. May it please the Commission, I believe that I can clear that up. My hypothetical question, Mr. Landua, and the question on which I asked him to assume the validity of such a calculation from an engineering basis, was on the last two figures, the last two increments of time.

MR. LANDUA: Was there any reason for forgetting the first one?

MR. BUELL: No, I would be glad to ask him that, it is meaningless.

MR. LANDUA: We shouldn't be taking up time with meaningless things.

MR. BUELL: Very simple calculation, it didn't take five minutes.

Q I think that what Mr. Easley was trying to establish in Mr. Currens' testimony on reservoir pressure drop, we believe that

DEPRILEY - MEIER & ASSOCIATES INCORPORATED STREMAL LAW RESISTAN ALEQUERQUE, NEW MEXICO 3-6-691 5-9546 voir, that it's conducive to water encroachment of one nature or another, and that much oil would be bypassed, much more than would be gained by his theoretical expansion of 276,000 barrels for that reservoir.

MR. BUELL: May it please the Commission, it appears Mr. Landua is doing more testifying than asking questions.

MR. MORGAN: I agree. I think it ought to be placed in the form of a question. Ask him if he agrees with that.

MR. LANDUA: Thank you.

Q Mr. Currens, would you say that if you produced this reservoir at a thousand barrels a day per well that you would cause waste?

A I don't think we'll ever have to look at producing this reservoir at a thousand barrels of oil per day per well, so I don't know.

Q Okay. You are of the opinion that it's impossible to bypass oil and have coming in this reservoir?

- A In this reservoir, yes, sir.
- Q No matter what producing rates you would have?
- A I don't think you'll leave behind any oil that should be recovered, no, sir. Beg your pardon, sir, you said with what producing rates you had?
 - Q Yes.
 - A Any reasonable producing rate that we would have, anything

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that we might expect as a normal allowable for the field.

- Q Would you take Exhibit 6, the one that has the structural map of the water wells?
 - A Yes, sir.
- Would you count for me the number of wells that you would consider edge wells in that reservoir, from your structure map?
 - A I would say sixteen.
 - Q Edge wells?
 - A Oh, edge wells, total.
 - Q Not water edge wells.
- A Total edge wells, I may have missed one, but I got about thirty-eight there.
- Q Thirty-eight out of a total of how many you consider in the field?
- A There is something in excess of ninety, I would say right now.
- Q In other words, about four-ninths of the total wells in the field are some type of an edge well?
 - A Yes, sir, the field is rather long, so we have a big periphery.
- Q So whenever we have happenings to an edge well, we are talking about four-ninths of the reservoir?
- A Yes, sir, if you want to say that. We are not talking about four-ninths of the reservoir, we are talking about four-ninths of the wells.
 - Q Four-ninths of the wells in the reservoir. In your opinion

can we completely ignore edge well happenings whenever we analyze this reservoir?

A No, sir, we can't, and that is why I think the reservoir is acting as it should, the edge wells make water. I don't know what else you would expect. Edge wells and low structural wells make water in water drive fields.

Q In examining your plat, I think you will see that some of the edge wells are making water at a higher interval than some wells located in other productive limits of the field. Is that unusual?

A No, sir, because if you get on the edge of the structure, let's say that you have a triangular sort of thing on the edge of a structure, if that's clear, you don't have as much oil on those edge locations as you have farther up-structure. You produce so much oil out of a well. You have voided that much reservoir space.

Q Even though that structure, even though the location of a pay is higher than it is at some well within the limits of the field?

A Depends on what you have as the entire volume underneath the well. You have got a smaller volume, so as you produce, your water has to come up somewhat higher.

Q Let's assume for the minute that the wells in this terracelike part of this large structure of curs would go to 100 percent water and be washed out. Would the recovery of the 600-acre part of the field that is so thick be increased appreciably?

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MR. BUELL: Do you understand that question, Mr. Currens?

A I wanted to ask him which was the terraced and which was the 600 acres.

Q I'm talking about in the northern part of the field, that is relatively flat.

A This part here, on north and this part on down south, from say here to here?

Q Not quantitatively in any way, but do you think that you would get more oil if the low thin wells would be washed out?

A In both ends of the field, up here in what you are calling the thinner end of the field, you have some good structural relief, you are coming up-structure. If the oil moves, it has to move that way, so I don't see where you would leave any oil behind that you would recover, as these wells are depleted, their methods of getting more oil or less out of them. I think you will get more if you drop the pressure.

Q If we drop the pressure and would cause premature coning, which we think happens?

A I don't agree with you. I don't believe there is premature coming in this field.

Q But the oil that would be left in the relatively thin area would be recovered in some other part of the field, in your opinion?

A Well, if the oil is left, it can't be recovered. If you are talking about recoverable oil, I believe that the -- you have got to expect in a water drive field wells to go to water and to

of the recoverable oil in place. Any oil that is ahead of that would move on forward and be produced. I don't think you are going to bypass any.

- Q In your opinion, then, there's nothing that could be done that would cause you to bypass oil in any one of these well bores in this reservoir?
 - A No, sir, I wouldn't say nothing.
 - Q Something happened in Lawton State 2?
 - A Yes, sir.
- Q We left some oil, we were lucky enough to do a workover and try to get it. You testified, Mr. Currens, that the reservoir pressure in our discovery well was in line with field average?
 - A Yes, sir.
- Q How could that pressure have been drawn down, since there was no wells in that area?
- A Well, as I recall the well came in at 1955, and the field was discovered in 1951. There's a long period of time.
- Q Are you saying there would be drainage of oil from that area to the south?
- A I would say there was an equalization of pressure between the two.
- Q The only way you could equalize would be to have some travel fluid?
 - A If you had equalization of fluid, you would have expansion

of fluids, too.

Q It would have to travel?

MR. BUELL: What was that?

Q If the oil had to travel from the north end to the south end to cause the pressure drop, for our pressure to be in line with the field average pressure at the time?

A There would have to be a pressure average across the field.

The pressures in the field reflect the drainage from the reservoir, of course.

MR. LANDUA: That's all. Thank you.

MR. PURTER: Anyone else have a question of the witness?
Mr. Nutter.

By MR. NUTTER:

Q Mr. Currens, to what do you attribute the change in the barrels of oil obtained from the entire pool as of the bottom-hole pressure survey taken in December of 1956, the figure being 44,000 barrels of oil per pound drop, as compared with 8,800 barrels per pound drop in April of 1957?

A We produced more oil. We had less pressure drawdown. There were very few completions, or not nearly so many completions in the field at the first interval of time as at the second interval of time, which of course is going to have to be a reflection of this, too, as the actual numbers are.

Q Do you think that the completion of additional wells caused the recovery of less amount of oil per pound drop from December of 156 to April of 157?

A Well, I can't really give much credence to these numbers, it is just a mathematical computation, where we have taken the amount of oil and the pressures for the period. I don't really see where it says anything more than that. I don't think it is a reflection of anything, particularly.

Q You attach no significance whatsoever to the number of barrels of oil that are produced per pound of reservoir pressure?

A Not over these increments of time, no, sir, these small increments.

Q You think the increments of time are too short in these comparisons here?

A Well, you have very short periods. Well, not very short, but you have short periods of time in this, one of them is about eight months. It's just a factual statement there, that during this period of time so much oil was produced. When we started we had this pressure and when we ended we had this pressure. I don't really know much more to say about that than that.

Q What causes the change in pressure in the reservoir?

A Well, certainly withdrawals would be a function, have something to do with it.

Q Do you attach any significance whatsoever to the last three figures on the right-hand side column on your Exhibit 4, being the amount of oil that was recovered per pound drop from June to August to December of 1957?

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- A I don't attach any significance to these numbers.
- Q Mr. Currens, on your Exhibit No. 6, you depicted the water producing wells with blue circles, is that correct?
 - A Yes, sir.
- Q What did you say was your estimate of the oil-water contact in this pool?
- A I think it's approximately 8!50 plus or minus, say 10, 15, feet.
- Q Are all of these water producing wells completed in an interval that falls below that oil-water contact?
 - A Below it?
 - Q Yes.
 - A Of 8150?
 - Q Yes.
 - A No, sir.
 - Q What is the reason that they are producing water?
- A Well, we have edge wells. As I have said before, you are on the edge of the structure, the structure is coming up, you have less productive area to void the smaller average oil column over your entire 40-acre lease. It is what I would expect, you withdraw oil and water comes in.
- Q Now, the Lawton State No. 2 well up in Section 32 in the north end of the pool --
 - A Yes, sir.
 - Q What was the interval of completion on that well?

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- A Original?
- Q Yes, sir.
- A Minus 8117 to minus 8157 are the numbers I have.
- Q Did that fall within or did the interval of completion on that well fall below your pick of the oil-water contact?
 - A Minus 8157 would be below minus 8150, yes, sir.
- Q I don't know if you made any statements of your opinion as to why that well went to water or not. Do you have any opinion as to why water was produced in that well?

MR. BUELL: I have no particular objection if Mr. Currens wants to answer that. Actually, insofar as I know we have been offered nothing in the way of evidence that would even show that it was producing Devonian water, so until you know the source of your water it is pretty hard to analyze its performance. We see nothing that would preclude it from being water from up the hole.

Q Are you acquainted with the manner in which the well was worked over?

A Generally, sir, I believe by the information that Mr. Landva presented to Pan American.

Q Would the manner in which the well was worked over cause you to think that the water was from any source other than the Devonian?

A No, sir, I don't necessarily believe it would make it look like it came from anywhere else.

Q Do you think it was Devonian water?

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- A It very likely could have been, yes, sir.
- Q Do you have an explanation for what Devonian water was encountered in that well overnight?
- A I don't really know, it was an unusual factor in this field.

 However, it has now been cured because instead of 100 percent water
 that well now produces 100 percent oil, according to our information.
- Q Mr. Currens, on your exhibits -- you don't have to turn to them, I can refer to them.
 - A All right, sir.
- Q Exhibits 3, 5, and 7, in which you show various reservoir pressure statistics --
 - A Yes, sir,
 - Q -- for the pool as a whole?
 - A Yes, sir.
- Q You show pressure declines and so forth, versus producing weight, cumulative oil production, and such other things?
 - A Yes, sir.
- Q Do you think that you would have had the same curve if you had been dealing with the two pools separately, as you have with one curve representing the entire pool?
- A I really couldn't say. I don't know, Mr. Nutter. I hadn't looked at it in that way.
- Q Is there substantial variation in the thickness of the pay in the two parts of the pool?
 - A Well, yes, sure. There's a portion of the south that is

DEARNLEY - MEIEP & ASSOCIATES INCORFORATED GENERAL LAW REFORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 thicker than the north, certainly.

Q Would you expect pressure decline at a given rate of production to be greater or lesser in an area where the pay is thicker or thinner?

A It would depend on the type reservoir, of course. I think that very possibly where the pay is a little thinner, you could draw the pressure down a little bit faster.

Q So you think you might have a pressure decline in the north end of the pool?

A Yes, I think very likely that the pressure might be, well, in looking at the pressure surveys, field-wide pressure surveys in the field seem to indicate that slightly lower pressure in the north end than in the south.

Q Now, Mr. Currens, you made the statement that with the consideration of reservoir volume factors, viscosity of the oil, expansion of connate water and such --

A Yes.

Q -- that you feel the pressures in the water drive pool such as this should be dropped as low as possible?

A In this field I think it should be, yes.

Q Is this a theoretical observation or a fact that has been proved?

A Well, sir, of course, we can't go past the basic allowable rate here, but I firmly believe from the physical facts involved that by drawing the pressure down we will get more oil recovery.

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- Q Has this ever been substantiated in field tests?
- A I couldn't cite one right off-hand, no, sir.
- Q Do you feel that a pressure maintenance program such as is conducted in the East Texas Field is in error, then?

A I'm not familiar with the East Texas Field. I think that
the most desirable method and means of producing a reservoir, particularly a water drive reservoir, let me say, is to drop the
pressure to slightly below the bubble point pressure, establish a
small residual gas saturation, and produce it at a pressure maintained
below the bubble point pressure.

Q But you also stated that it was impossible to drop this field below the bubble point?

A Yes, we will never get this far here, unfortunately.

MR. NUTTER: I believe that is all. Thank you, Mr. Currens.

MR. PORTER: Mr. Kellahin.

By MR. KELLAHIN:

Q You have referred to the water-oil contact as being 8150 feet. Is that the original water-oil contact in the pool?

A I would have to say it would be somewhere in that neighborhood.

Q Wouldn't the withdrawal, something in excess of nine million barrels of oil, have any effect on the water-oil contact?

A You should have a rise, it might be evidenced in different places in different ways.

MR. PORTER: Does anyone else have a question of Mr. Currens?

MR. LANDUA: If it please the Commission, I would like to

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MR. PORTER: Mr. Landua.

By MR. LANDUA:

Q In your opinion in this type of reservoir, would it be possible to predict that waste is going to occur before it actually occurred?

A Well, sometimes I think it is rather hard to say that waste occurred until after it occurred. I think that looking at the physical factors involved, we can say that we will realize more oil recovery if we can drop the pressure. Leaving behind oil that is possible to recover, in my opinion, is reservoir waste.

Q If your management asked you to determine whether waste was going to occur in this reservoir at a certain producing rate, you could not do it, is that correct?

- A Absolutely?
- Q Yes.
- A No, si, but I could sure give them my opinion.
- Q That is what I wanted, your opinion.
- A I could sure give them my opinion.
- Q In your testimony you cannot predict that waste is going to occur?

A I think in my opinion I could tell them that if we were going to follow a certain set of conditions and so on we would probably recover more oil.

Q. You don't have any practical yardsticks or practical

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happenings in your mind that would indicate to you that waste is occurring and will possibly continue to occur?

- A That waste is occurring in this field now?
- Q Yes.
- A You are talking about while producing under the normal rate?
- Q Yes, that is correct.
- A I don't believe that waste is occurring in this field while we are producing under the normal rate.
 - Q If it were occurring, could you detect it?
 - A Unly after it had happened.
 - Q Then you could detect it?
 - A Yes, sir, possibly.
 - MR. LANDUA: Thank you.
- MR. PORTER: Anyone else have a question of the witness?

REDIRECT EXAMINATION

By MR. BUELL:

- Q Mr. Currens, the East Texas Field was brought up, and you said you knew nothing about it, is that right?
 - A I don't have any certain particular knowledge.
- Q Then you couldn't disagree with me when I say that the East Texas reservoir is below the bubble point at the present time?
 - A No, sir, I surely couldn't.
- Q One more question. I'm afraid that we have talked so much about reducing pressure that we might have actually lost sight of

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 the physical factors that existed in this reservoir. Do you anticipate very much of a pressure reduction while we are producing at only the normal allowable rate?

- A That we would get a large pressure reduction?
- Q Yes.

A I don't think it would be as large as we would like to have.

It will not be too large.

MR. BUELL: Thank you. That's all. May I offer Exhibits l through 8 inclusive, please?

MR. PORTER: Without objection they will be admitted. The witness may be excused.

(Witness excused.)

MR. WEBB: May I be permitted to ask what we're about to do now?

MR. EASLEY: It is stipulated that the figures that are contained on this paper, which we will mark as Exhibit "A" to this hearing; we move that it be introduced in evidence.

If the Commission please, we would like to submit for the record letters from Jake L. Hamon and Colorado Oil and Gas Corporation supporting the position of Applicants, and I believe the Commission received a telegram from the McAllister Fuel Company, if there is no objection.

MR. PORTER: Is there objection to the admission of these letters?

MR. BUELL: Not from us.

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MR. KELLAHIN: I have no objection to the letters being submitted to the Commission, but we would object to their being treated as evidence.

MR. EASLEY: We offer them under those conditions.

MR. BUELL: I assume they are statements of position?

MR. PURTER: That is correct.

MR. KELLAHIN: If they are mere statement of position, we have no objection.

MR. BUELL: They do contain evidence, which I am sure the Commission will not consider, since they are unsupported by sworn testimony or exhibits in any form. There is evidence in the letters. As far as statement of position is concerned, we have no objection.

MR. EASLEY: We offer those as statement of position only and do not offer them as evidence in the case.

MR. PAYNE: Do you gentlemen have any objection to stipulating for a dismissal at this time?

MR. EASLEY: We are not prepared to stipulate.

MR. BUELL: I might move that the Commission dismiss because in my opinion, certainly, all the probative evidence is to the effect that waste will not result.

MR. WEBB: I would like to concur in that motion and state to the Commission that we have approximately thirty exhibits which we believe will support the testimony offered by Pan American and will show the same thing that they have offered.

MR. KELLAHIN: We would like to concur in the motion to

DEARNLEY - MEIER & ASSOCIATES INCORPORATED GENERAL UN REFERENS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546 dismiss, and we have about thirty minutes' testimony and two exhibits.

MR. PURTER: Do you have any objection to the motion for dismissal?

MR. EASLEY: Surely, we'll have to object to the motion for dismissal.

MR. PURTER: The motion is sustained and the case will be dismissed.

The hearing is adjourned.

* * * * X

CERTIFICATE

STATE OF NEW MEXICO)

COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Notary Public in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Proceedings before the New Mexico Oil Conservation Commission was reported by me in stenotype and reduced to typewritten transcript under my personal supervision, and that the same is a true and correct record to the best of my knowledge, skill and ability.

WITNESS my Hand and Seal this // day of April, 1958, in the City of Albuquerque, County of Bernalillo, State of New Mexico.

NOTARY PUBLIC

My commission expires: June 19, 1959.

> DEARNLEY MEIER & ASSOCIATES INCORPORATED GENERAL LAW REPORTERS ALBUQUERQUE, NEW MEXICO 3-6691 5-9546

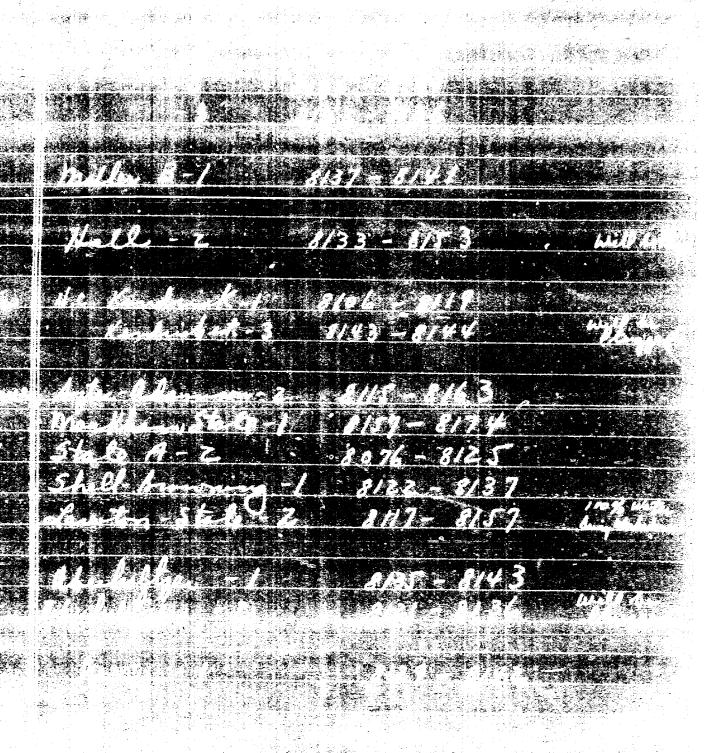
RALPH LOWE

WELL TEST RECORD

3-17-58

<u>Well</u>	Ebls. Water	Bbls. Oil	% Water
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Markham-State	140	230	38
Shell-Browning	200	385	34
#2 Aztec-Adamson	70	275	20

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WEST TEXAS OIL REPORTS

EVERETT L. BMITH

TELEPHONE B-1678 - P. O. BOK 988 B PETHOLEUM LIPE BUILDING MIDLAND, TEXAS

INDIVIDUAL WELL DATA SHEET

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Calculations and Remarks:

COMPLETE ENDINEERING BERVIDE BOTTOM HOLE PRESSURES BAS-CIL MATIGS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

RYBRETT L' BHITH STUIS CARD PROFESSIONAL ENGINEER AND ENBINEERING SERVICE
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EVERETT L. OMITH Registered Professional Engineer

Calculations and Remarks:

TELEPHONE B-1678 - P. D. SOX 958 S PETROLEUM LIFE SUILDING MIDLAND, TEXAS

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Feet Depth Libs. Eq. in. Pressure Libs./Ft. Surfage 365 Tubing Press. 7900 2588 SP Top of Field 7900 2973 Top of Weise 2000 566 SP Hrs. Shut in Section 2000 11,900 1284 Elev. D.F. Gr. 11,900 1284 Elev. D.F. Gr. 11,900 129 Ress. Dest Test 11,2,019 1322 E. H. P. Change Loss/Day Choke Size Off Bisis/Day Water Bisis/Day Water Bisis/Day Orifice & Line Static & Differential Gon Sp. Gr. - Cur Pt./day GOR GFR PRODUCTIVE BIDEX-BILE/DAYS/LIM Since Production Between Tests Between Tests	Denth	•	Processos	•	0	······································	•		E1
Surface 365 Tubing Press. 7900 2973 Top of Paid 7900 2973 Top of Paid 7900 2000 646 377 Hrs. Shirt in 14 9900 368 Tunp. 6 11 2000 56 325 Elev. D.F. Lost Test Dote 1 11,900 1264 Des Press. Lost Test 1 12,019 1322 B. H. P. Chonge Lose/Day Choke Sine Oil Bhis/Day Water Biss/Day Total Bhis/Day Orities 6 Line State 6 Differential Gas Sp. Gr. Cur P./day GOR GPR Production Production Between Tests	Foot I	Popth :	Lbs. Sq. in.	Presua					<u>.</u>
7900 2973 Top of Plate 7900 2973 Top of Water 7900 2000 666 Top of Water 7900 2000 666 Tomp. 11.00 11.						Contin	o Print	-W.	1
7900 2973 Top of Weiter 2000 665 M7 Bra-Shut In St. 9900 3466 Temp. 2000 Ever.Dr. 11,990 L264 Lost Test Date 11,990 L264 Press. Lost Test 11,900 L278 Press. Lost Test 11,12,019 L323 B. H. P. Change Lose/Day Choke Size Oil Bhis/Day Water Bhis/Day Ortice & Line Static & Differential Gas Sp. Gr. Cur Pt./day GOR GATS PRODUCTIVE BIDEZ-BHIS/DAYE/LINE DECE Production Production Between Tests	urfage		385						
2000 3488 Temp. 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		200		2588				AND AND AND ADDRESS.	S
9900 368 Temp. 2000 5/6 395 Elev.DF. Ga. 11,900 1284 Lost Test Dois 119 39 328 Press. Lost Test 12,019 h323 B. H. P. Chonge Choke Size Oil Bisis/Day Water Bisis/Day Ortice & Line Storic & Dillegentical Gon Sp. Gr. Cur Pt. disy GOR GPR PRODUCTIVE BEDEX-BILL/DAYS/LIM. DECE Production Production Between Tests			2973					24	
2000 556 325 ElevD.F. 11,900 1263 Lost Test Date 19 39 328 Press. Lost Test 11,2,019 L323 B. H. P. Change Loss/Day Choice Size Oil Bhis/Day Water Bhis/Day Water Bhis/Day Total Bhis/Day Ortice & Line Static & Differential Gas Sp. Gr. Cur PL/day GOR GPR PRODUCTIVE SEDEX-SHA/DAYS/LMS. DECE Production Production Between Tests		200		695					
11,900 12,019 13,12,019 13,12,019 14,123 15,12,019 15,12,019 16,12,019 17,12,019 18,12,019			3625			Temp	-114		3
119 30 Jan Press. Lost Test 11 12 019 B. H. F. Change S. Lose/Day Choke Sine Oil Bible/Day Water Bible/Day Water Bible/Day Total Bible/Day Ortice & Line Static & Differential Gas Sp. Gr Cur PL/day GOR GPR Prococcurve Bedel-Shal/Days/Line Since Last Cumulative Production Between Tests		200	1.4	- 550				<u> </u>	Ļ
Loss/Day Loss/Day Choke Sise Oil Bhis/Day Water Bhis/Day Total Bhis/Day Ortice & Line Static & Differential Gas Sp. Gr. Cor PL/day GOR GPR PRODUCTIVE BIDEX-SHA/DAYS/LSA DECE Production Production Between Tests	1,900		112051					44	ألمة
Loss/Day Choke Bise Oil Bible/Day Water Bible/Day Total Bible/Day Ortice & Line Static & Differential Gas Sp. Gr. Cur PL/day GOR GPR PRODUCTIVE BEDEZ-BILE/DAYS/LINE Dace Last Cumulative Production Production Production Between Tests	2 222	7.9	1.000		I			***	Ļ.
Choke Size Oil Bbls/Day Water Bbls/Day Total Bhls/Day Critice & Line Critice & Line State & Differential Gas Sp. Gr. Cur PL/day GOR GPR SPR PRODUCTIVE BEDEX-BILE/DAYS/LINE DECE Last Cumulative Production Production Between Tests	2.014		LIK.					-76-	}-
Oil Bold/Day Water Bold/Day Total Bold/Day Orthes & Line Static & Differential Gas Sp. Gr. Our PL/day GOR GPR PRODUCTIVE BEDEZ-BHLE/DAYS/LINE DECO- Last Cumulative Production Production Between Tests					• • • • • • • • • • • • • • • • • • •				7
Water Bble/Day Total Bble/Day Ortice & Line Static & Differential Gas Sp. Gr. Cur PL/day GOR GPN PRODUCTIVE BIDEX-BILE/DAYS/LINE DECO- Last Cumulative Production Production Between Tests									*
Total Biss/Day Ortics & Line Static & Differential Gas Sp. Gr. Cur PL/day GGR GPR PRODUCTIVE BIDEX-BILE/DAYS/LINE DECP Last Cumulative Production Production Between Tests									-
Ortice & Line Static & Diffusential Gas Sp. Ge. Cur Pt./day GOR GPR PRODUCTIVE BIDEZ-BILE/DAYS/LINE DECP Last Cumulative Production Production Production Between Tests		-		<u> </u>					,
Static & Differential Gas Sp. Gr. Cur PL/day GOR GPR PRODUCTIVE BIDEX-BHA/DAYS/LINE DECE Last Cumulative Production Production Production Production Between Tests		-							3
Gos Sp. Gr. Cu: PL/dicy GOR GPR PRODUCTIVE BIDEX-BILE/DAYS/LISE DECE Lost Cumulative Production Production Production Between Tests	· · · · · · · · · · · · · · · · · · ·								
Production Production GOR PACOUCTIVE BEDEZ-BHA/DAYS/List. Dage Production Production Production GOR GPR Production Production Production GOR Production Production Production Between Tests	-								-
Production Production GPR PRODUCTIVE BIDEX-BILE/DAYS/LINE DROP Production Production Between Tests						Cor F	Liday		
PRODUCTIVE BIDEX-BILE/DAYS/LIM. DROP Last Cumulative Production Production Between Tests					_	GOR	- 10 - Co. 1		
Last Cumulative Present Cumulative Production Production Between Tests					1	GPR			
Production Production Between Tests			*	**					
					79	Batwas	E Tests		7
Instrument Americal Number 11266 Bbis/pound loss	ument	Amerada	Nu	ımber	11266	Recove	ry Paster		

DEMPLETE ENBINEERING SERVICE SCTTOM HOLE PRESSURES HAD-QIL RATIOS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. SMITH REGISTERED PROFESSIONAL ENGINEER TELEPHONE 8-1678 - P. D. BOX 966 8 PETROLEUM LIFE SUILDING MIDLAND, TEXAS

REDIBTERED PROFEDERAL BHOMSES

Test Date 12-2-57 Time 3125 P. M. Storus of Well Statis Top of Pay 11,998 Total Depth 12,014 Producing Formation Detroiting Tubing 2 EPE Depth 12,012 B.H.C. Packer Pressure Datum 32 Casing 52 Depth 11,958 Perf. Liner Packer Depth * Pressure Line Res. In Pressure Line/P. Sur/Reg hog 256 Tubing Press. 102 7600 2596 Top of Phild Septh 102 7900 2596 Top of Phild Septh 102 2000 656 328 Dev. D. G. 11,900 17 2000 656 328 Dev. D. G. 11,900 17 11,900 L296 Lost Test Date Septh 102 112,019 1335 Lost Test Date Septh 103 R Press Lost Test Date Septh 103 Castrag Press Packer Tubing Press. 102 Top of Phild Septh 102 Top of Water Room Temp. 11,900 17 Lost Test Date Septh 103 R Press Lost Test Date Septh 103 Confine Septh				ty Les		State Bear Men	1
Tubing 2	Test Date	2-2-5?	Time 3:15 P.	Me Status of Wel	ı <u>s</u>	Mile	
Depth A Pressure Depth Lines Pressure Depth A Pressure Depth Lines Rq. Ins. Pressure Lines	Top of Pay	11,998	Total Depth 12	OLÉ Production	g Formation	Devenian	
Depth	Tubing 2"	EUR Der	oth 12,012	B.H.C	Packer	Pressure Dorium	
Costing Press. Pasking Surface	Casing 5	Depth	11,958 Per	L 4	ner	Packer :	
Sur/s.ge LOE		A Depth		Proseuro			. = 1
Surface 102						Casing Press. Package	
7900 2000 650 127 Hrs. Shut in 154 Flowing 9900 360 Evv.D.F. 6. 11,900 5296 Lost Test Date 1,1200 11,900 5296 Lost Test Date 1,1200 110 30 300 B. H. P. Charges 1,1200 Choke Size Oil Bels/Day Choke Size Oil Bels/Day Writer Bels/Day Writer Bels/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu. Ft./day GOR GPR PRODUCTIVE INDEX.8 I.S./DAYS/LBS. DROP Lost Cumulative Production Between Tests Recovery Factor	Surface		i de			Tubing Press. Log	
2000 1940 11.90		7900		2580	.327		
9900 1640 Temp. (1) 1900 17. 2000 664 322 ElevD.F. (2) 11,900 5296 Lost Test Doils 5.5. 112,016 1335 B.H.P. Chomps 51 Loss/Day 133 Choke Size Oil Bols/Day Writer Bols/Day Orifice & Line Static & Differential Gas Sp. Gr. Cu. P./day GOR GPR PRODUCTIVE INDEX-8 SLS./DAYS/LBS. DBOP Last Cumulative Production Between Tests Recovery Factor	7900		25.96		·		· .
2000 654 328 Elev.D.F. 11 a 900 b 296 Lost Test Date 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		2000		63,	.327		
11,900 196 196 196 197 198 199 199 199 199 199 199 199 199 199	9903	8000	300			Flow D. S.	
119 39 328 Press. Lost Test B. H. P. Chonges Loss/Doy Choice Size Oil Bible/Doy Weter Rhim/Doy Total Rhim/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GFR PRODUCTIVE INDEX-BILS./DAYS/LBS. DBOP Last Cumulative Production Production Production Between Tests Recovery Factor	11 600	2000	Lend	656	328		20
Loss/Day Loss/Day Choke Size Oil Bbls/Day Wester Bbls/Day Total Bbls/Day Orifice & Line Static & Differential Gas Sp. Gr. Cu. Ft./day GOR GPR PRODUCTIVE INDEX-SUS_/DAYS/LISS. DROP Last Cumulative Production Production Production Between Tests Recovery Factor	11,700	370	8279	•	404	Part Colors No. 1	-
Loss/Doy Choice Sise Oil Bible/Doy Worter Rible/Doy Total Bible/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BILS./DAYS/LBS. DROP Last Cumulative Production Production Between Tests Recovery Factor	1 12 019				-,324		-
Oli Bible/Day Water Bible/Day Total Bible/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BILS./DAYS/LBS. DROP Last Cumulative Production Production Production Between Tests Recovery Factor							
Woter Bble/Day Total Bble/Day Orifice & Line Static & Differential Gas Sp. Gr. Cu. Ft./day GOR GPR PRODUCTIVE INDEX-BELS/DAYS/LBS. DBOP Last Cumulative Present Cumulative Production Production Production Between Tests Recovery Factor							
Total Bible/Day Ortfice & Line Static & Differential Gas Sp. Gr. Cu. Ft./day GOR GFR PRODUCTIVE INDEX-BILS./DAYS/LBS. DROP Last Cumulative Preduction Production Production Production Between Teets Recovery Factor							7
Ortice & Line Static & Differential Gas Sp. Gr. Cu. Ft./day GOR GFR PRODUCTIVE INDEX-BILS./DAYS/LBS. DROP Last Cumulative Production Production Production Between Teets Recovery Factor							
Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GFR PRODUCTIVE INDEX-BILS_/DAYS/LBS. DROP Last Cumulative Present Cumulative Production Production Production Between Teets Recovery Factor				·	· · · · · · · · · · · · · · · · · · ·		
Gas Sp. Gr. Cu. Ft./day GOR GPR PRODUCTIVE INDEX-BILS_/DAYS/LBS. DROP Last Cumulative Production Production Between Tests Recovery Factor		- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1					
Cu. Ft./day GOR GPR PRODUCTIVE INDEX-BILS./DAYS/LBS. DROP Last Cumulative Present Cumulative Production Production Production Between Tests Recovery Factor				 			<u>.</u>
PRODUCTIVE INDEX-BILS_/DAYS/LBS. DROP Last Cumulative Present Cumulative Production Production Production Between Tests Recovery Factor					· · · · · · · · · · · · · · · · · · ·		
PRODUCTIVE INDEX-BILS_/DAYS_LBS. DROP Last Cumulative Production Production Between Tests Recovery Factor					·		-
Last Cumulative Present Cumulative Production Production Production Between Tests Recovery Factor	ويوسوندونداك منتوه فاورد المواجعة						
Production Production Between Tests Recovery Factor					DAYS/LBS. D		v
		V e		- · · · · · · · · · · · · · · · · · · ·		Between Tests	
	Instrument	Amerad	Numi	×r 11266		Bols/pound loss	منسخه

SUMPLETE EMBIMERRING BERVISE SUTTOM HOLE PRESSURES GAS-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH HEDISTERED PROPERSIONAL EMBINEER

TRLEPHONE 2-1878 - P. Q. BOX 968 9 PETROLEUM LIFE SUILDING MIDLAND, TEXAS

LAMAR EDGMBERBER REGISTERED PROFESSIONAL BIGMESS FIELD ENSIMESS

MOIVIDUAL WELL DATA SHEET

Field Korth	Gladicia	De vonian	County	Les		St.	to New Mexi
					9	tatio	
Test Date	N+1->1	Time	15 P. M. Status	of Well		evera	
Top of Pay	11.255	Total Depth	12.005	Producting For	mation	Devenian	
Tubing 20	BUE De	pth 12,003	BHC_	Pa	cker	Pressur	Datum -81
Casing 5	Depth	11,955	Pert	Liner_		Pocker.	
Decth	ali e ★	Promose		, Q	odieni		-
Foot	Dopts	Line sq. in.		<u> 1)</u>	-/P		
			*			Costog Press.	
Syrfage		183				Tubing Press.	343
	7900		2581		12	Top of Padd	
7900		2964				Top of Water	
	\$000		650	المــــــــــــــــــــــــــــــــــــ	2	Has Shot in 27	Firming
9900		3618					175
	-8000		65)	3	27	Elev. D.F.	G. 3471
11,900		1,272				Last Yest Date	-1-17
	121		1.0	3	27	Press. Last Test	147
m112,000		4328				B. H. P. Change	-260
	-	· · · · · · · · · · · · · · · · · · ·				Loss/Day	1.11
			1, 1			Choke Size	•
		-				Oil Bbls/Day	<u> </u>
					, ,	Water Bbis/Day	
						Total Bible/Day	
						Ortfice & Line	
						Sicilic & Different	al
						Gas Sp. Gr.	
		-				Ou PL/day	
						GOR	
						GFR	
Last Cumulati	vo	P	DUCTIVE DEDE		VLINE. D	BOP Production	
Production			induction			Between Tests	
Instrument	Lucre	49 1	lumber	11266		Recovery Factor Bbis/pound loss	
Run By	A. P. Pa		Calibration No.	'n		Calculated By	L. Parr

Calculations and Remarks;

TENEDAS COMMITTION REPORTS PREPARED

SAFE APPRAISALS

SVALUETIONS

COMPLETE EMBINEERING GENIDE EUTTOM HOLE PRESSURES SAS-OIL SATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS AND ENGINEERING PROVICE TELEPHONE BIRTS - P. O. BOX 985 H PETROLEGY CIPS BUILDING ENGINEER MIDLANC, TEXAS PEGISIERA

S TEMETY L. BENETH HE SERVICE STREET STREET STREET STREET

LAMAR ENCHMERMER PEDINTERALO PROFESSIONAL ENGINEER PIELG ENRINEER

		Perrentan Coun	· ·			State New Mercia
Test Date 12	-8-57	Time 4 sti P.	Status of W	el Stat	16 :	
Top of Pay	12,000_	Total Depth 12	108 Produc	ing Formation	Devestan	
i'ubing 28 1	na Der	oth 12,039	B.H.C.	Facker	Praes	ure Datum -615
Casing 5	Depth	12.108 Peri	Annual Control of the	Liner	Pack	K.
				• • •		
Depth	Depth	Pressure Lbs. Sq. In.	Pressure	Gradient Lbs./Ft.		•
Fasi	Depta	rper ad. mr	Pressure	100-786	Casing Press.	Do alexan
	المسارة المطابق والمريدي ليوسي	156	alium uningenamania antaren alem manifestaren eta em filitarioren de		Tubing Press.	Pasker U16
Surface	7900	136	2577	306	Top of Fluid	Serface
7900	7 YUU	2993	25//		Top of Water	
	2000	4773	443	326	HrsShut In 2	
9500	-ANG-CK	3646				1,900* 17591
	2000		663	326	Elev.D.F.	Gt. 3867
11,900		1,299			Last Test Date	
	117		38	.326	Press. Last Tes	11.96
12,017		4337			B. H. P. Chan	
					Loss/Day	1,12
					Choice Size	
					Oil Bble/Day	
					Total Bols/Day	
					Ortice & Line	
					Static & Differe	ottol
					Gas Sp. Gr.	
					Ou FL/day	
					GOR	
-					GFR	
. "		PRODUC	TIVE INDEX-BBLS	./DAYS/LBS. D	DEOP	
Last Cumulative Production		Prese: Produ	nt Cumulative		Between Tests	
Instrument	Amerad	Numb	per 11266		Recovery Factor Bbls/pound loss	
Run By	. P. Far	Calib	ration No.	•	Calculated By	

DOMPLETE ENBINEERING BERVIGE BOTTOM HOLE PRESDURES BAR-DIL RATIOS TEMPERATURE, BURVEYS

WEST TEXAS OIL REPORTS

AND ENSINEERING BERVICE

EVERETT L. SMITH REGISTERED PROSEDSICHAL ENGINEET TELEPHONE BISTS - P. Q. BOX VES R PETELLEUW LO'C BUILDING MIDLAND, TELAS

LAMAN EBUH**RENDEN** Rebitterd propesiinnal **Empineer** Piklo enbih**ee**

Total Depth 12a h 12a085 12a0k0 Peri Pressure Libe. Sq. In. 1421. 3000		ng FormationPacker	Pressure Dotum Packer Cosing Press & Backer Tubing Press Inches Top of Fluid Backer Top of Water	833
12,085 12,0k0 Peri Presence Lhe. Sq. In. 421. 3000	B.H.C.	Packer Liner Goudlout Libs./Pt	Pressure Datum Packer Casing Press. Tubing Press. Top of Fluid Top of Water	
12,0k0 Peri Presence Lhe. 8q. In. 421. 3000	2579	Conditions Libs./Pt.	Casing Press. # Balance Tubing Press. 101 Top of Fluid Casing Top of Water	
Pressure Line. Sq. In. 1427. 3000	Pressure 2579	Gradient Libe/Pt.	Cosing Press , Balance Tubing Press Late Top of Fluid Company Top of Water	
Lhs. Sq. In. 421. 3000 3654	2579	Lba./Pt.	Tubing Press. Let Top of Fluid Surface. Top of Water	
42). 3000 3654	2579	.386	Tubing Press. Let Top of Fluid Surface. Top of Water	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -
3000 3654			Tubing Press. Let Top of Fluid Surface. Top of Water	
3000 3654			Top of Fluid Top of Water	
3654			Top of Water	
3654	654	297		
			Has Shut in 261 Flowing	7
			Temp. @ 11 9000 1	
	651	327	ElevD.P. Gr. 2	
1308			Lost Test Date 7-31-6	
	38	.327	Press. Lost Test	
4346			B. H. P. Change 137	
		····		- 5
*	· · · · · · · · · · · · · · · · · · ·			
		· · · · · · · · · · · · · · · · · · ·		-
				
· · · · · · · · · · · · · · · · · · ·				
		*	Gas Sp. Gr.	-
			Oa. PL/day	
			GOR	۵.
			GFR	•
	PRODUCT		PRODUCTIVE DIDEX-BRIS./DAYS/LISE I	Loss/Day Choke Sine Oii Bibls/Day Water Bibls/Day Water Bibls/Day Total Bibls/Day Orthor & Line Static & Differential Gas Sp. Gr. Ca. Pt./day GOR GFR PRODUCTIVE DIDEX-BBLS./DAYS/LBS. DEOP

HAILPDAO COMMISSION REPORTS PREPARED LEASE APPRAISALS EVALUATIONS COMPLETE ERBINETHING BERVISE BOTTOM HOLE FREEBURES BAB-OIL RATION TEMPERATURE BURYEVS

WEST TEXAS OIL REPORTS

AND ENDINEERING SERVICE

EVERETT L. BMITH REGISTERED PROFESSIONAL ENDINSER TELEPHONE SUBTE - P. D. SOX 958 B PETROLEUM LIFE SUILOINS MIDLAND, TEXAS

LAMAR EBCHBERBER REBISTERED PROPESSIGNAL ENGINERA FIELD ENGINEER

. PROVIDUAL WELL DATA SHEET

Field North	Claticla	Devonian	County	Les	1.3		State	Mari
•		Time 8:1				+	•	,
1691 DOIN	#4-E-#	11110		ORDITION OF AL	W		1.13	·
Top of Pay	12,023	Total Depth	14,011	Product	ng Formatian	Derenda	<u> </u>	
Tubing 20	De De	nth 12,00	O RH	4	Pocker	Pres	mana Deibassa	-81
						Paol		
casing	Depu	1 10 1400	. Pacz		Liner	Pod	ter	
			e e e e e e e e e e e e e e e e e e e				**	
Dopth	*	Prosume		n 🖈 🖰 e			, * - · .	
Post	Depth	Lba, Sq. ba		-	Lbe/ft	Control Precs.	_ #-	
						Tubing Press.		}
Surftee		k10				Top of Plate		
7900	7900	0.00		2680		Top of Water		B
700	6000	2990		652	.526	HrsShut In	hi Pigur	-
9900	2000	3612				Temp.	11.900	
7700	2000			60.	.327	Elev. U.F.	G.	1
11,900		4296				Last Test Date		
	122	4-/-		ko	. 387	Press. Last Te		l-Grayer-
1 12,022		4336				B. H. P. Cha		
						Loss/Day	1.22	
	*************************************		1.		•	Choke Sime		
	. Y			_		Oil Bols/Day		
						Water Bble/D		
					•	Total Bole/Do		
						Oritice & Line		
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		Static & Differ	entici	
						Gas Sp. Gr.		-
	<u> </u>				· · · · · · · · · · · · · · · · · · ·	Ou PL/day		
		·		·		COR		
		·				GER		
	•	290	DUCTIVE	BENEZIA BILL	/DAYE/LDS.	DROP	* * * * * * * * * * * * * * * * * * *	
Last Cumulat Production	i ve		Present Cu Production	mu lati ve	13 13	Production Between Teets		ė.
Instrument	Anere	44	Number	11266		Recovery Factor Bbls/pound los	*	
Run By	A. P. Pa		Calibration			Calculated By	A. P. Pe	177

PELERAND COMMISSION REPDATS PREPARED LEASE APPRAISALS FLATONS

COMPLETE ENGINEERING BERVIGE RGITOH HOLE PRESSURES DAB-DIL RATIOS TEMPERATURE BURVEVE

WEST TEXAS OIL REPORTS

EVERETT L. SMITH REUISTERED PROFESSIONAL ENSINEES TELEPHONE 3-1872 - P. D. BOX 488 H PETROLEUM CIT C SUICO-NS MIDLAND, TEXAS

LAMAR EBUHBRBER PEUISTERED PROFESSIONAL EMBINGER PIELD ENBINERR

Fleid Horth 3	<u> </u>	Davonian Cou	nty	Les			Sta	to Im	Man
Test Date 12	-1-57	Time_7145_4		i Well	Statt	<u> </u>		•	720
Top of Fay 12	,003	Total Depth 12	,030 Pro	ducing	Formation	Devoniar	1		
Tubing 2* B	THE De	pph 12,008	P.H.C.		Packer	P	Leeam.	Dațum.	-
Cosing 5km	Dept	n 12,033 Pe	rf	Line	1	Po	acker_	·	1
Depth Feet	* Depth	Pressure Lbs. Sq. In.	Pressure		Gradient Lbs./FL				
						Casing Pres	S .	Panker	12
Surface		200			· · · · · · · · · · · · · · · · · · ·	Tubing Pres		400	-
	7900		2579		326	Top of Fluid		Surfa	
7900		2979				Top of Wat		None	<u> </u>
	2000		654		.327	Hrs. Shut In			
2200		3633				Temp. @	11.	2001	175
	5000		45).		.327	ElevD.F.		Gr.	
12,900		<u> 1267</u>	<u> </u>			Last Test De		8-1-1	-
12.015	هدد		38		.327	Press Loss			
is in the		1,325				B. H. P. Ch Loss/Day	cinge	-157	
						Choke Size		1.30	ـــــ
			-			Oil Bbls/Day			
e e e escende de la companya del companya del companya de la compa						Water Bbls/			
		* **** * **** ************************		·		Total Bble/L			3
			karanan karan Karanan karanan karana			Orthon & Li			
The second secon	······································				12	Static & Diffe		ıl	
	The second secon	-				Gas Sp. Gr.			•
						Cu. Fl./day			
						GOR			
						GFR			
		PRODUC	TIVE INDEX-8	Bls./Da	YS/LBS. D	ROP		•	
Last Cumulative Production		Presi Prodi	ni Cumulative uction)	,	Production Between Tests			
Instrument	Areses	u Num	ber	11266		Recovery Fac Bbls/pound l			
Rua By 1	P. Fer	- Calif	oration No.	13		Calculated B y	7 1	. Po I	

SEMBERATORS ROWARAS SERVICE CORECTE EVALUE BUT BERATORS

WEST TEXAS OIL REPORTS

AND ENDINGER DESCRIPTIONS ORA

EVERRET L BM TH.
REQUESTRED PROFESS OWEL ENDINESE

4-r'enlations and Remarks:

TELEPHONE SILEYS . M IS AUX 96% B FEINDLEUM LIST B. 1776 F MICHAND, TEXAS

LAMAR ERCHBERGER : nedisterfo professional enbineer fil; > pagineer

Alandar A	Re in the second	\ /{6 	Leuss	lawton-Stat	The company of the co	Well No
San North	Oledicia	Deronder Cour	ty diameter 1	5 <i>K</i>	Sic	te New Mexic
Cant Date	2-2-57	Time 11.100 a	Status of \	Wet Stat	1.9	en fina nav miner control of the second final second fina
Top of fory	11,956	. Total Depth	p017 Frodu	cing Formation	Deventan	
Appropriate the	THE LIS	oth 12,018	B.H.O			e Datum <u>-815</u> 0
Coning . side	Depti	12,73' Per	en e	Line:	Packer	•
Depth Feet	Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient		
					Cosing Presa.	Packer
our file		357			Tubing Fress.	359
	7200	عامات المالية	2536	- 32.Z	True of Fluid	Surface
7800		2915	كالسيار كروجة داب ببديد	ing a managan memering di kacamatan memering di kacamatan memering di kacamatan memering di kacamatan di kacam Memering di kacamatan di kacamat	Top of Water HeseShut Ia 27	N ZDO
	. 2007	?600	£5.	327	This Shut m 27	Flowing
93.05	الدوجع للاسم معيوس		Company of the second of the s	garana ar ar annsa an	Temp. @ 11.	900 <u>1 175</u> 07
والمستورة والمستورة	2002	4236			Last Test Date	Gr. 3875
-1,501		4350		فالتعاصين ويوضلا عاجب	Press. Last Test	7-31-57
		1.4.49	41	. 128	B. n. P. Change	1436
and \$ 4 (图第)	••••••	1651	and the same of th		Louis, Day	-139 1-12
					Choke Size	
					Cil Ebis/Day	
مسوشف للتنا للك				a ta san in a man a sa sa sanagan maga	Water Bbla/Doy	
					Total Bbls/Day	
					Orthog 5 Ltrie	-
		• • • • • • • • • • • • • • • • • • • •	managan da ana ana managan da Pengeran da Ana ana ana ana ana ana ana ana ana an	, (2,21 <u>2</u> 1,24 2 2)	Statta & State	al
·				in the second se	Gas Sp. Gr.	-
			والمرادي والمستعلق بشموريس بنات بسعو	, i la company de la compa	Cu. Ft/day	-
	چان باللغ چانندرو <u>گا</u> . ا		and a second of the second of the second	daran barangan kecambah Kanangan	GOR	
	-		A AND A SHAPE A SHAPE AND A SH	The second secon	GFR	
Lust Cumulati			TIVE INDEX BELI	e./d a ys/ljs. 1	Production	
Tensi Vidinada	• •	Produ			Botweer, Tests	
	Azure i			11266	Recovery Factor Bbls/pound loss	
Bern Bir	A. 7. 71.	r Calib	ration. No.	1.	Oriculated By	A. P. Fart

SOMPLETE ENGINEENING SERVICE COSTON HOLE PRESEURES CONFOIL RATIOS TEMPERATURE OURVEYS

WEST TEXAS OUT REPORTS

EVERETT L. SMITH REGISTERED PROFEREISTAU ENGINKER

TELEPHONE 8-1878 - P. O. BOX P68 B PETROLEUM CIPE BUILDING MIDLAND, TEXAS

LAMAR THOMBERBER TEGIPTERED PROPERSIONAL ENGINEER PIELD ENGINEES

Company	alph La	<u>re</u>		.eane	Awton-Stat	<u>e</u>	Well N	o
Fiold North G	lacicla	De rocian	County	Let			_ State	w Marci
Test Date 12	-1-57	Time 11	115 A. M. Sto	ntus of Wel	Stat	<u> </u>		·•
Top of Pay 1	2,010	Total Depth	12,070	Producing	g Formation	Egvenia	a	·
Tubing 20 B	UE De	pth 12,03	BH.C.		Packer	Pr	essure Datu	<u>8</u>
Casing 54	Dept	h 12,081	_ Peri	14	ner	Po	cker	·
		<u>.</u>				· · · · · · · · · · · · · · · · · · ·		
Depth Feet	Depth	Pressure Lbs. Sq. In	ı. Pro	# 66020	Gracilesi Lbs./Pt.			
						Cosing Pres		R
Surface		360				Tubing Pres		
	7900		2	(4)	. 327	Top of Fluid		-
7900	·	2943		-		Top of Water		
	2000			151	-327	Hre. Shut In		
9900		3597				Temp. @	D. 9001	175
	\$000			555	.327	ElevD.F.	Gr.	1075
12,900		4252				Lost Test Do	***	
د معسمور ووزنده فرغوا جمود	125			<u> </u>	.327	Press. Last		
mi 12,025		1,293	·	·	· · · · · · · · · · · · · · · · · · ·	B. H. P. Ch.		
·					· · · · · · · · · · · · · · · · · · ·	Loss/Day	1.15	
						Choke Stre		
						Oil Bbls/Day		
		·				Water Bbls/		
						Total Bbis/I		
			· · · · · · · · · · · · · · · · · · ·			Ortfice & Li		
			************************************		·	Static & Diffe		
						Gos Sp. Gr.		
	->- 				····	Cu. FL/day		· .
						GOR		
						GFR		
	* "**	PRO	DUCTIVE IND	EX-BBLS./	days/les. D	ROP	•	
Last Cumulative Production	!	•	Présent Cumui Production	lative		Production Between Tests		1.2
Instrumerit	Amered					Recovery Fac Bbls/pound le	tor oes	
Run By	P Pau		Calibration No	o. 11		Caiculated By	A. P.	Part

SOMPLETE ENGINERAME SERVICE BOTTOM HOLE PRESSURES GAS-GIL MAYING TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

TELEPHONE 5-1978 - P. D. BOX 888

EVERETT L. BMITH REGISTERED PROFESSIONEL ENDINESS B' PETAGLEUM LIFE JOULDING MIDLAND, TEKAR

LAMAR ENDMERROER REGISTERED PROFESSIONAL ENGINEER FISCO ENGINEER

DIDIVIDUAL WELL DATA SEIZET

	01 a 44 a 1 a	Damand &	?		The state of the s
field ##FI	ATEGICA	na marrism (CountyLe		StateState
lest Date 12	-2-57	Time 12:	O P.N. Sighus of	Well St	Mio
			12,128 Prod		Remotes
lop of Pay	, ~~	Total Depth .	Prod	ucing Formation	
Tubing 🔭	EUB De	oth 12,03	BHC.	Pocker	Pregeure Datase =\$1
-		T			
Casing 2	Dept	h is also	Peti	Liner	Pocker.
Depth	*	Prospero	★ .	Gradient	
Foot	Depth	Lbs. Sq. bs.	Pressule	Lba/R	-
					Casing Press.
Surface			*		Tubing Place. 166
	7900		2580	927	Top of Pluid
7900	-	2945			Top of Water
	8000				Het. Shall la sale claylos.
9900		3599			arap. G. Harris L. Marie L. Ma
	2000	_		381	Ber.D.F.
11,900		1253			Last Teet Date
·	127			327	Press. Dat Test
12,027		1295		10	E. H. P. Chonge
	···				Loss/Day
				<u> </u>	. Choke Shee
· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·	Of Biole/Day
					Water Bols/Day
· - 	·	·			Total Biols/Day
					Ortice & Line
		· · · · · · · · · · · · · · · · · · ·			Static & Differential
		~			Gas Sp. Cr.
				· · · · · · · · · · · · · · · · · · ·	Cu. PL/day
			······································		GC/R .
					GPR .
	, e ^a	790	DUCTIVE MIDEX & R	A /DAYE/LIG. 1	
Last Cumulatin	re	F P	resent Cumulative roduction		Production Between Teets
instrum ent	Aserede	}	lumber	11266	Recovery Foctor Bbis/pound loss
Run By	. P. Farz		Calibration No.	11	Calculated By A: P. Bases

Calculations and Remarks:

COMPLETE SHEINEERINE SERVICE BUTTOM HOLE PREBBURGE CAB-OIL WATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH RED BEERED PROFESSIONAL ENSINEER TELEPHONE STUTE - P. C. BOX 968
P PETROLEUM LIFE CUILDING MIDLAND, TEXAS

LAMAR ECCHEERBER REGIGTERED PROFESAIONAL ENGINEER FIELD EMPINEER

		Devonian Count			3. **	Nav Nexto
Test Date	2-1-57	Time 12:30 P.	Status of W	'ell	<u> </u>	
Top of Pay	1,996	_ Total Depth12	030 Produc	ing Formation	Downian	
Tubing 2 ^m	FUE D	pth 12,007	B.H.C	Packer	Pressur	Datum
Casing. 54	Dept	12,030 Perf		Liner	Pocker_	
Depth Feet	* Depth	Pressure Lbs. Sq. In.	*	Gradient Lbs./Ft		
					Coming Press.	Project
Spring		363			Tubing Press.	16
	7900		2585	.327	Top of Fluid	3-3-6
7900		29.8			Top of Water	Name .
	2000		655	.327	liraShut in 25	
5900		3603	<u></u>		Temp. @ 11.	200 1750
11,900	2000	1253	653	327	Last Test Date	<u> </u>
11,500	127		1/2	_397	Proce. Last Test	1-11-67
m112.027		4300			B. H. P. Change	
***************************************				· · · · · · · · · · · · · · · · · · ·	Loss/Day	137
					Choke Size	A. A.
					Oil Bloke/Day	
					Water Bble/Day	•
					Total Bole/Day	
				-	Orifice & Line	
	· i 		·		Static & Differenti	od .
					Gas Sp. Gr.	<u> </u>
					Cu. PL/day	
					GOR GER	
					Gra	
·			AR BEDEXTRE	DAYS/LDG. D		
Last Cumulative Production	/e 	Presen Produc	Cumulative		Production Between Tests	
Instrument	Amera	Number 1	<u> </u>	1266	Recovery Factor Bbls/pound loss	
Run By		Colthe	stion No.	11	Calculated By A	D

GEMPLETE ENGMERNING BERVISE BETTEM HOLE BARBSURGE GAR-GIL BATICS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

TELEPHONE S-1878 - P. O. BOX 788

EVERSTT L. SMITH
ACCIDERED PROFESSIONAL ENDINEER

B PETROLEUM LIFE BUILDING MIDLAND, TEXAS LAMAR ESCHBERGER REGISTERES PROFESSIONAL ENGINTER PIELD ENGINEER

INDIVIDUAL WELL DATA SHEET

Field North	Oladiola	Deventan	County _	Les		State Hear	
Test Date 1	1-30-57	Time 2	00 P. M.	Status of W	al State		
						Devenian	
Tubing 2	HIE De	pth 12,00	B.H	a	Pocker	Pressure Dotum.	<u> </u>
Casing 51	Dopti	12,010	. Peri		Liner	Pocker	·
		1		· ·	•		
Depth Fect	A Depth	Pressure Lbs. Sq. in	-	* Promute	Cloudlout Libs./Ft.		
244	Depts .	200, 600 12	<u> </u>	770000	AND CO.	Contog Press. Backers	
Surface		1,32				Tubing Press. 197.	
MINITEDE	7900			2574	. 104	Top of Plata Birefalls	<u> </u>
7900		3005				Top of Water Home	
	2000		···	652	326	Hra-Shut in 24 Plout	bg
9900		3657					77
	2000		·	653	.326	Elm.D.F. Gr. 1	
11.900	- AM	1,320				Lost Test Date Paris	Total
	112.			37	.326	Press. Last Test	
m: 12,C12		h 167	-			B. H. P. Change	
						Loss/Day	
	* -					Choice Strie	
	^ <u></u>				1	OR Bule/Day	a de
					. •		. C '3,
						Total Bbis/Day	
						Ortifice & Line	
						Static & Differential	
						Gas Sp. Gr.	
						Ca. PL/day	
						GOR	
						GFR	
	÷	720	DOCIIAE	INDEX-BBLE	L/DAYS/LDG. I	BOP	
Last Cumulativ	7.0		Present C	and of the last	•	Production	
Production	•		Production			Between. Tests	
Instrument	Amerad	ande de la constitue de la con	· • • • • • • • • • • • • • • • • • • •	112	 56	Recovery Factor Bbls/pound loss	

Calculations and Remarks:

WEST TEXAS OIL REPORTS

TELEPHONE 3-1878 - P. O. BOX 988 9 PETROLEUM LIPC SUILGINE MIDLAND, TEXAS

EVERETT L. BHITH

LAMAR ESCHÉTORES
ACGISTERES PROPERSONAL ENGINEER
PIOLO ENGINEER

POTVEDUAL WELL DATA SHEET

3: A				• •	r Agri		
Field Nort	r Uladiala	Devonian	County	Let		Sta	by Hear March
Test Date	12-2-57	Time 8:00	A. H.	Status of Well	State	lg .	
Top of Pay	11.978	Total Depth	12.010	Producina	Formation	Downlas	
					• •		Detail #81
		opth 12,00		• • • • • • • • • • • • • • • • • • •	1.5	Processor.	Delua
Casing 51	Dep	12,010	Perl	<u>Lin</u>	X	Packer_	
Depth					- Company		
Foot	Dopte	lba Sq. ba.		Распиро	Lbe/R		
		3 .7	- ;	•		Cosing Press. Tubing Press.	
Surface	79.CO			1579	. 326	Top of Pluid	her the
7900		2925		654	202	Top of Water Hrs. Shut in 194	Figures :
9900	2000	3560			.327	Temp. @ 11.9	
	2000			455	.327	Elev. D.F. Last Tost Date	- M
11,900	134	435		<u></u>	.397	Press. Last Test	14.
11 12,036		1279				B. H. P. Charge	-11
		-			······································	Loss/Day Choice Stee	
						Of Bhis/Day	
	 					Worker Miller/Door	
						Ortice & Line	
						Static & Differentia Gas Sp. Gr.	
-						Ou PL/day	
						GOR	
			•	7 (A)	4 A	SIR	
		PRO	DOCTIVE	MOEK-BRIS /D.	RYB/LDG. DI		
Last Cumula Production	tive		resent Cur reduction	mulative		Production Between Tests	
Instrument	Amera	ا هه	Vumber	11266		Recovery Factor Blois/pound lobs	
Itun By	h. P. Is		Calibration	1.5		Calculated By	. P. PATE

TAILEDAD DOMMITTION REPORTS PREPARED LIABE APPRAISALS
EVALUATIONS

COMPLETE ENGINERING HMI BOTTON HOLE PRESSUIN BAR-DIL RATTOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. MINITH
PEGINYERED FROTEBBEONAL ENGINEER

TELEPHONE 8-1873 . P. O. BOX 983 8 PETROLEUM LIFE BUILDING MIDLAND, TEXAB

LAMAR ESOMBERSTE RESISTERED PROFESSIONAL (HIIIII FIELD ENSIMEES

TIGIO TELLEMENT	Partial AT.	D 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	County		· · · · · · · · · · · · · · · · · · ·		. State
Tost Date 12	2-51	Time_91	Die Ke Sico	us of Well	Stat	10	
Top of Pay	12,971	_ Total Depti	12,092	. Producing	Formation	Permiss	
Tubing 2"	EUR De	pth 12,0	DIS BHC		Packer	Pro	esure Datu
Casing 530	Dept	12,002	Peri	Lin	~	Pax	te
Depth Foot		Pressure Lha So, la	a. Proc		Gruffent Lbs.//L		2010 - Samuel Sam - Samuel Sam
						Cosing Press	Real
Suriaca		379				Tubing Press	379
	7900		25	79	. 326	Top of Fluid	
79.80		2955				Top of Water	
	£330		6	2	-327	Hrs. Shut In	254 Plo
9963		3612				Temp. @	11,900!
	2000		6	56	.325	ElevD.F.	G.
11,900		1,262	ny i ny anima Marie II dia manana anima anima anima			- Lost Test Da	
	135			61	المادات	Press. Lost T B. H. P. Cho	
1.32,018		1329				Loss/Day	TIMES.
						Choke Size	
				·	~	Oti Bible/Day	
						Water Bole/I	
						Total Bble/De	
						Ortfice & Lin	
						Static & Diffe	
				· · · · · · · · · · · · · · · · · · ·		Gos Sp. Gr.	
						Ou. PL/day	
			e se s			GOR	
						GFR	
		PSK	DOUCTIVE IND	ex-bels./d	AYS/LDS. I	380 0	1
Last Cumulative Production	70		Present Cumule Production	evito		Between Tests	
Instrument	Amero		Number	11266		Recovery Fact Bbls/pound to	

KARLEKO GOMMIGORA REPORTO AREPARES. ENSE AREPARIBALO ENSE AREPARIBALO.

GDMPLETE ERENETRING BERVICE BOTTOM HOLE PRESEURES BAS-211: RATIOS TEMPSHATURE: SURVEYS

WEST TEXAS OIL REPORTS

AND KNOTHERSING BERVICE

TELEPHONE 3-1873 - P. G. BOX 938 B PETROLEUM LUE BU LOINE MICLANG, TEXAS

LAMAR EBUMBERBUR REGISTERED PROFESSIONAL ENGINEER FIELD ENGINEER

	Ralph Lor		leas		-		Well No.	
ela Vicià	Oladicle	Devonian Cou	nty Les			S	tote Ken	
st Dute	11-30-57	Time 6:20 P	. Me Status	LleW to	Stati	•		
		Total Depth						
		epth 12,135					ne Datum	-025
		12 115 p.		4			*	<u> </u>
Depth Feet	***	Pressure Lbs. Sq. In.	* Pressur		Gradient Lbs./Pt			
1.001	. Depus	100. 0q. 10.	* Leading		22/0-/ 1 %	Cosing Press.	Nober	
inribos		362		· · · · · · · · · · · · · · · · · · ·		Tubing Press.	362	·····
	7200		2564		325	Top of Fluid	Surfac	•
72-20		2926				Top of Water	Regag	
مستدينة عالم علي والداد	2000		650		. 325	HrsShut in 2		
5900		3576				Temp. @ U	,900	175
-	2000		651		.325	Elev.D.P.	Gr.	121
200		4227				Last Test Date		£1
	124		ميا		.325	Press Last Test		
7.00		1267				R. H. P. Chang		-
						Loss/Day	1.44	
	مداد شوافت بداری بهای بیار					Choke Size		
						Oil Bols/Day		
						Water Bhis/Day Total Bhis/Day		
						Oritice & Line		
			·			Static & Different	461	
		 				Gas Sp. Gr.		
						Ou PL/day		
· · · · · · · · · · · · · · · · · · ·					·	GOR		,-
						GFR		,
		NAODIO CONTRACTOR DE CONTRACTO	TIVE PIDER		LVE/TRE T			
_	Vig					w.		
et Cumulati eduction	ive	Prese Produ	ent Cumulativ uction	'		Production Between Tests		· .
stroment	Ameri	da Num	ber	11266	in and the second	Recovery Fortor Bbls/pound loss		
in By	A. P. Par		oration No.	11		Calculated By	A, P.	

DUMPLETE RNBINKERME SERVICE SOTTOM HOLE, PRESSURES BAB-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

RESISTERED PROFESSIONAL ENSINEER

TELEPHONE 5-1872 - P. C. BOX 988 ** PETROLEUM LIFE BUILDING MIDLAND, TEXAS

LAMAR ESCHSERSER RESISTERED PROFESSIONAL EMBINEER FIELD FHOINEES

Field Morth	Gladiola	Dev.	Jounty . L	M		·	State New	
			P. M. Status				74210	
			12,116 p		The second second			
Tubing	EUE D	opth <u>12.3</u>	B.H.C.		_ Packer	Pres	ture Datum.	
losing. 5	Dept	h 12,115	Peri.	Lin	9 7	Pack	or	
Depth	. . .	Procesto	*	•	Gradient			
Feet	Depth	Lbs. Sq. in.	Press	50	Lie/TL			
						Casing Press.	Beker	
Surface		362		 		Tubing Press.	768	
	7900		256	<u> </u>	.325	Top of Fluid	_ tribe	3
7900		2928				Top of Water		
	2000		65	2	.325	lire. Shut in		
9 900		3578				Tomp.	1,900!	_17
	2000		6	ļ	_385	Elev. D.F.	Gr.	_11
11,900		1,229	····			Last Test Date		17_
كنسيت سننس	124			7	,325	Prem. Last Tes		
1 12,024		<u> 1269</u>				B. H. P. Chan		
	· · · · · · · · · · · · · · · · · · ·					Loss/Day Choice Stee		- 4. ⁽
		····		•		Oil Bble/Day		-
	· · · · · · · · · · · · · · · · · · ·					Water Bloke/Da		
			 			Total Bola/Day		
					 	Ortfloe & Line		
	·					Static & Differe		
						Gas Sp. Gr.	CERCIA .	
	 			· · · · · · · · · · · · · · · · · · ·		Cu. Ft./day		
					•	GOR		
					· · · · · · · · · · · · · · · · · · ·	GFR		
								
		,	OCTIVE INDEE				•	
Last Cumulat Production	ive		resent Cumulati roduction	Ve		Production Between Tests		
nstrument	Ameras	ia N	umber	11266		Recovery Factor Bbls/pound less		ţ
Run By	A. P. Fai	er C	alibration No.	. 11		Calculated By	A. P. P.	

SATURDAD COMMISSION REPORTS PREPARED LEASE APPRAISALS EVALUATIONS

DOMPLETE ENGINEERING BERVIDE BOTTOM HOLE PRESGURES BAS-DIL RATIOS TEMPEDATURE SURVEYS

WEST TEXAS OIL REPORTS

RESIDENT JANDISSETORE OFFICER

TELEPHONE S-1878 - P. D. BOX 968 8 PETROLEUM SIFE SUICDING MIDLAND, TOXAS

LAMAR ESUHSERGES RESISTERED PROFESSIONAL ENGINEER
PIELD ENGINEER

Test Date 11	-30-57	Time 3130	P. K. Status	of Well	Stati	le .		
Top of Pay	11,989	_ Total Depth _	2,010	Producing	Formation	De venian		
Tubing 20	EUE De	pth 11,999	B.H.C		Packer	Pr	essure Dotum	-81
Casing 5	Depti	12.010 p	et	Lin	or		cker	·
	•				•		-	
Depth Feet	* Depth	Processo Lbs. Sq. In.	P	· .	Gradient Lbs./Ft.			
760	No.	res ed. at.	Proces			Casing Press	Belos	
Suriage		389				Tubing Press		
	1900		2579	3	325	Top of Fluid	Ser. Cha	<u> </u>
7700		2252				Top of Wate	e San	
	3000		653	L	.126	HrsShut in		taq.
9900		3610				Temp. 6	11,000	-17
45	2000	1262	45	L	.126	Last Test Do		
11,300	126	17.64	· k		326	Press. Last 1		_X883,
112,026	750	4303				B. H. P. Ch		
B = 6 . G. die H					· · · · · · · · · · · · · · · · · · ·	Loss/Day		A F
4 - 4						Chuke Size		
						Oil Bble/Doy		
· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·	Water Bole/		
						Total Bible/D Ortfloe & Lin		
						Static & Diffe		
						Gas Sp. Gr.		
						Cu. Ft./day		
	·····		-			GOR		
						GFR		
•		PRODU	CTIVE INDEX	ABLS./D	AYS/LBS. D	nop		
Last Cumu <mark>laite</mark> Production	9		sent Cumulcti duction	ive	-	Production Between Tests		
Instrument	Amera 1	Nu.	mber	11256		Recovery Fac Bbls/pound k		
			•	11				

COMPLETE EMBINEERING BERVICE SOTTOM MOLE PRESSURES SAB-OIL MATION TEMPERATURE BUSYRYS

WEST TEXAS OIL REPORTS

EVERETT L. MMITH

TELEPHONE SIBTS - P. O. BOX 958

B PETROLEUM LIPE BUILDING
MIDLAND, TEXAS

LÄMAR ESCHBERSER REGISTEREG PROFESSIONAL ENSINEER FISLO KNBINGER

		Devorien Cou			State Ken Me	
				:	Devenian	
					Pressure Patum	82
					Re-	
Depth Feet	† Dopth	Pressure Lbs. Sq. In.	* Promure	Gradient Lbs./Ft.		
					Coming Press. Pagiter	
Surfage		385			Tubing Press. 385	
	7900		2570		Top of Fluid Surface Top of Water Rope	
79.30	2000	2955	200		Une Chief la de Elevator	
9350	SIATU	3605	650	.325		17
	2000	3947	651	.325	EavD.F. Gr. 3	17
21,920	<u> </u>	L256			Last Test Date 7-31-67	
			39	, 125	Press. Last Test	
12.021		L295			B. H. P. Change	
					· Loss/Day 1.37	-
					Choke Size	
					Oil Bbls/Day	
					Water Bbis/Day	
والمستجدد الأستدادات					Total Bible/Day	
					Ortfice & Line	
					Static & Differential	
· · · · · · · · · · · · · · · · · · ·			·		Gas Sp. Gr.	
	<u> </u>				Cu. Ft/day	
يست يتسادن بالشاد المساد	· 				GOR	
	 				GFR	
				ls./days/lbs. c	DROP	*
ast Cumulative reduction	9	Prese Produ	nt Cumulative	e derenin au v. dere dere manne anna gang dere	Freduction Between Tests	
asaument	Arerad	a Numl	per 1	1266	Recovery Foctor Bbls/pound loss	-
D	n w	Calib	mattan kis	n	Calculated By A. P. Farr	

RAJIRTAO ODMMISBION REPURTO PREPARED LEARE APPRAIDALS FIALUAT UNG SUMPLETE EMPHRESHING SERVICE S

WEST TEXAS OIL REPORTS

AND ENBINEERING SERVICE

FVERRTT L. EMITH ...

TELEPHONE B-1873 - P. D. BOX 565 6 PETROLEUM LITE EUROINA MIDLAND, TEXAS

LAMAR EUDHBERUER RECIGYERSO PROFESOIONAL ENDINCES FIELD ENGINSES

Field Nurth V						State	
				•	tion Devenism		
•	•			•		-	
Tubing 3.4.1	Depth Depth	17.300	B.H.C	Packe	r Pr	esure Datus	400
Casing 21	Depth	11,939 pa		Liner	Pa	ter .	
Depth	*	Pressure	•	Gradi			
Feet	nebu 1	bs. Sq. ia.	Pressure	Lbe/I	Casing Press	Da ab	
Guide as		339			Tubing Press		
Surface	7200		2571	,326	Top of Fluid		
7900		2912			Top of Water		
er var er er er er fan Kraffe Krammenne e	2000		651	.326	Hrs. Shut In		wing
99 0 0		3565			Temp.	11,900	175
	2000		653	.326	Blev.D.F.	Gr.	
200 نورت		1238			Lost Test Do		
	130		عبا	.386_	Press Loss T		
181 12.239		11260			R. H. P. Cho		
				·	Loss/Day		
					Chake Size	, 	
					Oil Bhis/Day Water Bhis/I		. <u> </u>
					Total Bble/D		
a tanina na managana a pagagana					Ortice & Lie		
					Startic & Diffe		
					Gas Sp. Gr.		
					Cu Ft/day		
					GOR		*
en de la casa de la ca Casa de la casa de la c		-			GFR		
-		PRODUC	TIVE INDEX 8	BLS./DAYS/LB	s. drop		
Lost Cumulative Production	•	Pres Prod	ent Cumulative luction		Production Between Tests		
Instrument	Amered	Num	ber	11256	Recovery Fact Bbls/pound ka		
Kiai By	A. P. Far	Q-40	bration No.	11	Calculated By	4. P. I	

DOMPLETE ENBINEEMING SERVIGE BOTTOM HOLE PRESSURES BAD-GIL BATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENSINEERING SERVICE

EVERETT L. MMITH REDISTERED PROFESSIONAL ANGINEER TELEPHONE 2-1878 - #. D. BOX 068 8 ATTROLEUM LIFE SVILDING MIDLAND, TEXAS

LAMAR KSCHÆÉRBER ALDISTERED PROFESSISHAL ENDINGER PIELD KNOWEER

		Peropian Cou	_			late Har Ma
		_ Total Depth				
Tubing 2"	EUR De	11,970	B.H.C.	Packer	Press	re Datum -8
Casing 5	Dept	h 11.995 Pe	d	Liner	Packs	
	en e				 Substituting the property of the	
Depth Feet	# Depth	Pressure Libe. Sq. In.	Pronoune	Gradieni Lbs./?l.		
			*,,,,,,,,		Casing Press.	Name of the last
Surface		340			Tubing Press.	3.4
	7900		2573	.326	Top of Pauld	Series
7900		2913			Top of Water	Design
	2000		. 652	.126	Hrs. Shut In 29	
9500		1565			Temp. @ 11	2001 175
	2000	~	653	.386	Dev.D.F.	6. 30
11,200		h218			Lost Yest Date	Dicus, fig.
	132			384	Press Lond Yout	3 (1/4/11)
12,032		1261			B. H. P. Chang	<u> </u>
	·				Loss/Day Choke Stee	
*				,	Oil Bole/Day	
					Water Bala/Day	
					Total Bole/Day	
					Ortice & Line	
:					Static & Differen	the state of the s
					Gias Sp. Gir	
		···			Cu. Pt/day	1.38
			_		GOR	
					GPR	
		PEODUC	CITYE DEDEK-S	ELS./DAYS/LMA.	DROP	
Last Cumulati Production	v.	Pree Prod	ent Cumulative		Production, Between Tests	
Instrument	Amerada		***************************************	266	Recovery Factor Bbls/pbund loss	
Run By	P. Part			11	Calculated By	A. P. Pap

COMPLETE ENGINEERING STAVIOR DOTTOM MOLE PRESSURES SAC-OIL RATIOS TEMPERATURE BURYSYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVIDE

WASTE & EMITH

TELEPHONE S-1873 - P. D. MOX 965 8 PETROLEUM LIFE BUILDING MIGLAND, TEXAS

LAMAR ESENGATOR

Field North Gadiola	_				toto Mar Bardan
Test Date 12-3-57	Time 11100 A.1	& Status of V	Vell Stat1	•	•
Top of Pay 11 936	Total Depth11	995 Produc	Ang Formation	Dewegian .	
Tubing 1 DE Det	oth 11 959 B	HC	Packer	Press	ire Datum -\$150
Casing H Depth	11,936 Peri		Liner	Packe	6
Depti 🗢 Feel Desgriph	Pressure Lie. Sq. is.	* Progueso	Gradient Lbs./Fi	5	
				Cosing Press.	
Surface	31			Tubing Press.	
		2570		Top of Water	
2000	1911	652		Hrs. Shut is	
9000	1563	B3/		Temp. 6	
2000		663	326	Elev.D.P.	
1: 900	216			Last Test Date	2000
127		<u> </u>	326	Press. Last Tes	
12,07	1257			B. H. P. Chang Loss/Day	
				Choke Size	
				Oil Bible/Day	
			,	Water Bole/Day	
	14		ž.	Total Bible/Day	
				Orifice & Line	71.7
				Static & Ditteres	
		<u></u>		Gas Sp. Gr.	
				Cu. Pt./day	
	· · · · · · · · · · · · · · · · · · ·	 		GOR	200
				<u> </u>	
•		a	L/DAYS/LDE D		
Last Cumulative Production	Present Product	Cumulative on		Production Between Tests	
Instrument America	Number	112	<u> </u>	Recovery Factor Bible/pound loss	
Run By I, P. Par	- Callbean	tion No. 1	•	Calculated By	

PATERDAD COMMISSION REPORTS PRESARED LEASE APPRAISALS

OFMPLETY EMBINERATION BERVINE FOTTOM HOLE PRESSURES OAS-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING SERVICE

AVERETT L. SMITH PERIFTERED PROPERSIONAL ENGINEER TELEPHONE 8-1878 - F. Q. BOX 958 8 PETROLEUM LIFE BUILDING MIDLAND, TEXAG

LAMAR ESCHSKÖSER AEGISTERED PROFESSISHAL EMSINEER FISLS ENSINEER

	. <i>0</i> 2 se44.2 s	Date		T.ess		State Hear Me
	**	Day. Cou				State
Test Date 500	-57	Time 22:30 A	Status of	Well Stat	10 •	
Top of Fay	<u> ७३६</u>	Total Depth	20 Proc	lucing Formation	Devonian	
					•	
Tubling	Dub Dep	th	B.H.C.	Pocker	Pree	sure Doham
Common 2	Lento	11,795 Per		Lines	<i>P</i> bd	مياضي فيمورج
CARBING III III III						
Depth	*	Pressure		Gradient		
Foot	Depth	Lbs. Sq. ba.	Pressure	Lbe/ft.		
					Costing Press.	
Strikes		₹ 62			Tubing Press. Top of Fluid	
5000	79 00	3132	2570	.25	Top of Woder	Surface
7900	2000	3134	650	.325	HrsShut In	2 Plowing
39∵≎		3762				119
	2500		650	. 25	ElevD.F.	G. 337
11,500		12.32			Lost Test Date	6-67
در <u>در سرج</u> درد	121		39	. 325	Press. Last Te	
112.C21		MTI.			B. H. P. Char Loss/Day	
					Choke Size	0.22
					Oil Bols/Day	
				-	Water Bbla/De	
					Total Bols/Da	
		· · · · · · · · · · · · · · · · · · ·			Orthoe & Line	
· · · · · · · · · · · · · · · · · · ·				· · · · · · · · · · · · · · · · · · ·	Static & Differ Gas Sp. Gr.	etigon.
					Ou. Pt./day	
-					GOR	
					GER	
		pmongo	THE DESCRIPTION	LS./DAYS/LIS. D	POP.	
Lasi Cumulatin Production	78		nt Cumulative etion	•	Production Between Tests	
instrument	Lucai	Num	ber 11	256	Recovery Factor Bbls/pound los	6
	L. Eschie		ration No.	7	Calculated By	A. P. Par

COMPLETE ENGINEERING BERVIOR SOTYOH HOLE PRESSURED S BAS OIL PATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. AMITH
REGISTERUD PRINCIPAL ANGINEER

TEURPHONE BRIGHTS - P. C. HOX BER R PETROLEUM LIFE SUPERIND MIDLAND, TEXAS

LAMAR ENCHBERGER
REGISTERSO PROFESSIGNAL ENSINEER
FIRE ENGINEER

INDIVIDUAL WELL DATA SPEET

Top of Pay	y 11,9%; 2* EDE 5i** Depth	Pressure Lba. Sq. In. 558 3131 3781	17,010 Produc	ring Formation Packer	Pressure Datum Packer Packer Tubing Press. 555 Top of Fluid Serfees Top of Water None HrsShut In 29 Flowing Temp. @ 11,900° 1° ElevD.F. Gr. 18 Lost Test Date 6-2-57
Tubing Casing Depth Feet Surfa 1950	2* EDF 52* Depth Depth 2000 2000	Depth 12,006 epth 11,98k Per Pressure Lba. Sq. In. 558 3131 3781	# Pressure 2573	Packer Liner Gradient Line/Ft 325 325	Pressure Datum — Packer Cossing Press. Tubing Press. Top of Fluid Surface Top of Water Home HrsShut In 29 Flowing Temp. @ 11,900° 1° ElevD.F. Gr. 18 Last Test Date 6-2-57
Depth Foet Surfa 19:00	Depth	Pressure Lba. Sq. In. 558 3131 3781	Pressure 2573 650	Gradieni Lhe./Ft.	Costing Press. Tubing Press. Top of Fluid Surface Top of Water Hone HrsShut In 29 Flowing Temp. @ 11,700° 1 ElevD.F. Gr. 18 Last Test Date 6-6-67
Depth Foot Surfa 1992 9900	Depth 7922 2000 2000 2000 2000 2000 2000 2000	Pressure Lba. Sq. In. 558 3131 3781	2573 650	Gradient Lbe./Ft	Cosing Press. Tubing Press. Top of Fluid Surface Top of Water None HrsShut In 29 Flowing Temp. @ 11,700° 1° ElevD.F. Gr. 18
Feet Surfa 1950 2200 11,90	2000	1.ba. Sq. In. 558 3131 3781	2573 550 650	.325 .325 .325	Tubing Press. 500 Top of Fluid Surface Top of Water Home HrsShut In 29 Flowing Temp. @ 11,900* 1' ElevD.F. Gr. 38 Lost Test Date 6.4.57
2900 2200 11,90	7900 2000 2000	558 3131 3781		.325	Tubing Press. 500 Top of Fluid Surface Top of Water Home HrsShut In 29 Flowing Temp. @ 11,900* 1' ElevD.F. Gr. 38 Lost Test Date 6.4.57
2900 2200 11,90	7900 2000 2000	3131 3781		.325	Top of Fluid Surface Top of Water Home HrsShut In 29 Flowing Temp. @ 11,900 1 ElevD.F. Gr. 18 Last Test Date 6-6-57
2200 21 ,9 0	2000 2000 13	3131 3781 4431		.325	Top of Water None HrsShut In 29 Flowing Temp. @ 11,700 1 ElevD.F. Gr. 18 Last Test Date 6.457
2200 21 ,9 0	2000 2000 313	3781 4431	650	.325	HrsShut In 29 Flowing Temp. @ 11,900 1' ElevD.F. Gr. 98 Lost Test Date 6.4.7
11,90	2000 3000	3781 4431	650	.325	Temp. @ 11,700° 1 ElevD.F. Gr. 38 Lost Test Date 6.257
11,90	2000 33	4431			ElevD.F. Gr. 38 Last Test Date 6.2.57
	329	·			Lost Test Date 6-8-57
	129	·	39	395	
16,1	129	11 -		795	
	^				Press. Last Test 14.65 B. H. P. Change 15
	.9	<u> </u>			
					Loss/Day 0.95 Choke Size
					Oil Bhis/Doy
					Water Bble/Day
				·	Total Bols/Day
					Orifice & Line
	· · · · · · · · · · · · · · · · · · ·				Static & Differential
					Gas Sp. Gr.
					Ou Ft/day
		,			GOR
				· · · · · · · · · · · · · · · · · · ·	GFR
		PRODUC	TIVE DIDEX-BBLS	L/DAYS/LBS. I	DROP
Last Cum Production			ent Cumulative uction		Production Between Tests
Instrumen	n .		ber 11266	6	Recovery Factor Zbls/pound loss

Calculations and Remarks:

COMPLETE ENBINESSING GERVICE EDITON HOLE PRESSURES DAB-GIL RATIOS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

MEVERETT L. BMITH RED-STERED PROFESSIONAL ENGINEER

TELEPHONE BILATE - P. U. SOX 983 B PETROLEUM LIFE SUILDING MIDLAND, TEXAS

LAMAR ESCHSERSER REGISTERED PROPESSISMAL ENGINEER PIELO ENSINEER

INDIVIDUAL WELL DATA SHEET

Test Date	8-1-57	Time_1t3	County		State
Top of Pay			0 P. M. Stotus	84.	
-	21.998			of Well	atic .
2.0		Total Depth	12,016 Pr	roducing Formation	Devonisa
Tubing	1072 D	epth 12,012	B.H.C.	Packer	Pressure Datum -81
_				•	
COBILIQ		M. B	. Pullanianianianianianianianianianianianiania		
Depth Feet		Pressure Libe. Sq. In	. Pronous	Gradieni Da./PL	
					Conting Proms.
Surface		573			Tubing Press. 571
	7900		2563	.324	Top of Fluid * Santhan
79.00		3134			Top of Water Manage
	2000		65 0	.385	HrsShut in 30 Plowing
9900		3764			Temp. @ 11,900* 17
33 000	2000		<u>651</u>		
11,900		4435			Press. Last Test AKAK
: 12.013	113	山水		325	B. H. P. Change
12,017		WAR.			Loss/Day 6.5
					Choke Size
					Oil Bbls/Day
					Water Bbls/Day
					Total Bible/Day
					Orifice & Line
					Static & Differential
					Gas Sp. Gr.
					Cu. Pt./day
					GOR
					GFR

Calculations and Remarks:

BOTTOM HOLE PRESSURES
RAGION RATIOS
TAMPENATURE SURVEYS

WEST TEXAS OIL REPORTS

EVEREUT EL AM 1 M SESSECENTADO PROFESAN ONAL ENGINERA

TELEPHONE 8-1572 P. O. BOX 488 6 METROLEUM LIFE SI, LO NO MIDLAND, TEXAS

LAMAR ESCHBERGER ACGISTEREN PROFESSIONAL ENSINEER PISLO ENSINEER

	7		ounty La				_ State .		
î'es' Dare	3-3-57	Time 10:3	Status	of Well	Stats				
Top of Pay	2.555	Total Depth _	12,005 p	roducing For	matton	Levonian	<u> </u>	· · · · · · · · · · · · · · · · · · ·	
Dubana 2*	E/E Dep	tin 12,003	B.H.C	Pa	cker	Pr	oesurio D	aturo.	-819
Oising 51	Depth	11.955	Perf	Uner		Pa	.L.		
e e e e e e e e e e e e e e e e e e e	•								
Depth Feet	* Depth	Pressure Lbs. Sq. In.	Procu		adient		•		•
			4 - 1474	Ny 1 J		Casing Pres			
Dir Bace		561			<u>.</u>	Tubing Press			
			2570		325	Top of Fluid		Chos	L
		3131		·		Top of Wate		-	<u> </u>
	2000		650		325	Hrs. Shut in		Flow	
. 53.22		3781				Temp. @ EevD.F.	11,500	C	107
and the second s			651		325	Last Test Do			3872
		4132				Pres. Lour.		-2-5	
3.11222	122	1472	l _C		325	B. H. P. Ch		18 - 18	
of oktober and						Loes/Day		0.30	
						Choke Stre		عرجانا	·
						Oil Bbls/Day	,		
ar a merel anagement			· .			Water Bbis		······································	
			1.			Total Bble/D	ζŢУ		
						Orifice & Li			
						Statte & Diffe			
						Gos Sp. Gr.			-
						Cu. Ft./day			
						GOR			
						GFR			
A.	e e	PROD	uctive index	BBLS./DAYS	/LBS. D	ROP	•		•
Lost Comulativ Production	70		esent Cumulati oduction	Ve		Production Between Tests			
instrument	Aperada	N	umber	11266		Recovery Fac Bbls/pound l			
F 5	. Eachbarg		alibration No.	7		Calculated By		P. P	

GOMPLITE ENGINECTINE SCHVIDE BOTTOM HOLE PREGURES SAS-OIL RATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH REGISTERSO SHOCESSIONAL ENGINEER

TELEPHONE 2-1878 - P. D. SOX SES PRINCIPUM LIFE SUICONE MIGLAND, TEXAS

LAMAR ESCHSSERSER REDIBTERED PROPESSIONAL ENSINEER FIELD ENSINEER

INDIVIDUAL WELL DATA SHEET

Test Date	(-21-0)	Time 7:35 A.	Status of W	rell State		
Top of Pay L.	11,170	_ Total Depth <u>12</u>	Produc	ing Formation	Devonian	-
Tubing	BT De	opth 12.119	B.H.C.	Packer	Press	ire Dotum6
Cirsing 5	Depti	12,208 Per	.	Liner	Packe	· · · · · · · · · · · · · · · · · · ·
Depth Foot	# Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient Lbs./Ft.		
					Casing Press.	And the same of th
SULTEGR		56u			Tubing Press.	584
	7530		2572	,325	Top of Fluid	Springe
230.		3136			Top of Water	Mone
	२००)	·	65)	.325		8 Flowing
5550		3787			Temp. @ 11.	900 175
	2000		652	.325	Elev.DF.	Gr. 1867
الله والله		<u>hh38</u>			Last Test Date	6-3-57
			38	325	Press. Lost Test	4516
8 32, 317		11476			B. H. P. Chang Loss/Day	
				, ,	Choke Stae	Q. 69
	·				Oil Bble/Day	
					Water Bble/Day	
	•				Total Bols/Day	 -
					Crifice & Line	
	 		 		Static & Differen	Hal
			·		Gas Sp. Gr.	
					Ou. Ft./day	
					GOR	
*****					GFR	
	· · · · · · · · · · · · · · · · · · ·	PRODUC	TIVE INDEX-BBLS	/DAYS/LDS. D	ROP	
Lest Cumulati Production	ve		nt Cumulative action		Production # Between Tests	**************************************
THE WAY THE TANK THE PARTY OF			per 112		Recovery Factor	

Calculations and Remarks:

SOMPLETE ENBINGERING SERVIDE SCTION HOLE PRESSURES SAS-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVICE

EVERETT L. BMITH
REGISTERED PROPERS ONAL ENGINEER

TELEPHONE \$-1878 P. D. BOX 968 B PETROLEUM LIPE SUILDING MIDLAND, TRKAS

LAMAR ESCH**OCRGER**PROJETERO PROFESSIONAL ENGINEER
FIELD ENGINEER

Field North Cl	adiola	Deventan	Caumbi		Les			_ State	Hen	
			•	_				- OKTM		
Test Date 7-3	1057	Time_583	<u>○ A. B.</u>	Status of V	We¥ .	257.526				
Top of Pay 12	e002	Total Depth	12,040	Produ	cing l	Cormation .	Devonica	_ 		
Tubing 2* 1	ne l	anth 12,02	5 RH	r:		Donker	Pr		Dominum	41
		. •			-					¥. 5. 54-
Casing 54	Dep	th 12,040	Peri		Liner		Pa	cker		·
								-	:	*
Depth Feet	Depth	Pressure Lbs. Sq. In.		Pressure		Gradient Lbs./FL	e year			7.,.
							Casing Press			·
Springe		372					Tubing Pres			
	7500			2572		.325	Top of Fluid		rfaa:	<u> </u>
79.23		37.4					Top of Wate		700	
99.50	2000		 	650		_325	HrsShut In	19		
	FARA	3794	· · · · · · · · · · · · · · · · · · ·	 -			Temp. @	11.3	00!	
17,900	2000			652		.226			Gr.	386
11.29.00	115	क्रीहरू					Last Test Do		. 9	-57_
12.015	113	l l de		37		_326	B. H. P. Ch			17
13 15 2010		EMILL			 -		Loss/Day	miAe .		5
					·		Choke Stre		<u></u>	22
• • • • • • • • • • • • • • • • • • •							Oil Bble/Dox			····
·							Water Bbis/			
• · · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·			1.9	 	Total Bble/D			
		····					Ortfice & Lt			
		· · · · · · · · · · · · · · · · · · ·	,				Stortic & Diffe			
· · · · · · · · · · · · · · · · · · ·							Gas Sp. Gr.			
		·····					Ou PL/day			
* *** ********************************							GOR	-		
				<u></u>		,	GFR			
		PRO	DUCTIVE	INDEX-BBL	8./DA	YS/LBS. DE		Ð		
Last Cumulative Production		1	Present Cu Production	mulative]	Production Setween Tests			
Instrument	Aner	rae .	Number	-1	1266		Recovery Fac Bbls/pound l	tor cas		
Run By Jre 1	solbar:	::::::::::::::::::::::::::::::::::::::	Calibration	No.	7	,	Calculated By	, å	P	ar-

BOMPLETE EMBINGERING BERNIGE BUTTUM HOLS PRESURES BAS-RIL RAYIGS TENPERATURE GURVEVS

WEST TEXAS OIL REPORTS

AND ENDINEERING PERVICE

EVERETT L. SMITH

TELEPHQNE 2-1978 - P. D. BUX 962 B PETROLEUM CIFE SUICDING MIDLAND, TEXAS

LAMAR EBOHRGRYCH HEBISTERED PROFESSIONAL EMBINEER FIELD ENGINEER

Field Borth	ladicla	De Per An	County		4		State	
			-		•			
Test Date 3= 1	-57	_ Time.L!	JU A. H.	Status of W	/ell	<u> </u>		
Top of Pay 12.	1152	m.a. 1 m	a 14 d	k1	and Property	Darman-Lan		•
Tob of Lay "FF	1X 4 2	TOACT DAS	U	Picau	ing formulation.			
Tuking 28	NO.	nah 12.	0 0 0 b	ש כי	Dookee	Press		6
I (III) II	L/0]	Pui	D.	B.V	F W			
Casing 5	Denth	12,04	1 Parf	in the same of	Liner	Por Paris		
Depth	*	Promise			Gradient		· §	
	Depth	Lbs. Sq.		Promoto	Lbe./N.		,	
						Cosing Press.		•
3:278.00		575				Tubing Press.	575	
and NAME AND ADDRESS OF THE PARTY OF THE PAR	7900		·	2567	.325	Top of Fluid	Sin	
7800		3142				Top of Water	Mone	-
	2000			650	325	Hrs. Shut la 1	Pion	-
3300		3792				Temp. @ 1	1.900	17
	2000			651	325	ElevD.F.	GZ.	. 167
11,500		والمنا				Last Test Date		-67
	122			ko	. 325	Press. Last Tee		07
u 12,022		1462	·			B. H. P. Choo		
· · · · · · · · · · · · · · · · · · ·				···		Loss/Day	O	1
			·			Choke Sine		
						Oil Bhis/Day Water Bhis/Da	3	• •
	<u> </u>		·			Total Bible/Day		
			·			Orifice & Line		
						Static & Differe		•
			• 			Gas Sp. Gr.	iiiiiii	
<u> </u>						Ou FL/Coy	1.	
			·			GOR		
er er er om er						GFR		
			· · · · · · · · · · · · · · · · · · ·		 			
		Pi	ODUCTIV	E DIDEX-BBLS	L/DAYS/LBS. D	ROP		
Last Cumulative			Druggani	Cumulátive		Production	till gester.	į
Production	,		Productk			Between Toots		i <u>.</u> e
						Recovery Factor	100	
Instrument	A	merada	Number	1126		Bbis/pound loss		
** P.			A. 111			h		
Run By	L. Beohb	mrrer	Callbrati	ion No. 7		Calculated By	AL P.	PATT

HAILNGAD GOMMISSION REPORTS PREPARED LEASE APPRAISALS EVALUATIONS OSMPLETE ENFINESHING BERWIRE SOTTOM HOLE PRESSURES SAS-DIL RATIOS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING GENTION

EVERETT L. SMITH

TELEPHONE 8-1878 - P. O. BOX 888 8 PETROLEUM LIFE BUILDING MIDLAND, TEXAR

LAMAR ESCHSERSER RECIBTERED PROFESSIONAL ENSINEER FIELD ENSINEER

Field Kork's	Alothaio	Derection	County .	Lea			_ State _	Her	<u></u>
Pest Date 8-	1-57	Time 2 8	30 P. M,	_ Status of V	Vell St	atio .			
Top of Pay 12	:03	_ Total Dep	th 12,030	Produc	ing Formation	Devonian		-	
Tubing 2"	EUB De	pti 12.	008 BI	i.C	Packer	Pr	essure Do	dum_	_1
Cosing 5	Depti	h 12.030	Perl		Liner	Pa	cker		
Dapth Feet	* Depth	Pressure Lbs. Sq.		* Pressure	Gradient Lbs./ft.				٠,٠
					,	Casing Press	L a		-
Surfege		575				Tubing Press			
	50A1			25.56	. 325	Top of Fluid		(Nee	
79.30		3:41_				Top of Wate			
	2000			651	325	HrsShut In	11	Flowt	
950%		3792				Temp. @			
	2000		·	652	326	EevD.F.		<u>Gr.</u>	8يّ
		- hill	· · · · · · · · · · · · · · · · · · ·			Lost Test Do		int	I.
	11/2	14.32				B. H. P. Ch			
18 38 GE		1111.58				Loss/Dury	mide		
						Choke Size			
	-		ماد و متند مدسوسات و ماد د		and the second s	Oil Bbls/Day			
and the second s						Water Bbls/			
						Total Bbls/D			
						Ortfice & Li	3.0	•	
						Static & Diffe	rential		
						Gas Sp. Gr.			
						Cu. FL/day			
						GOR			
						GFR			
		PE	ODUCTIVI	E INDEX-BRI	S./DAYS/LBS.	DROP			÷, ′
Last Curnulativ	e		Present C Production	Cumulative n	•	Production Between Tests			
Instrument	Lan	rade	Number	1126	6	Recovery Fac Bbls/pound l			
Eun By	L. Secti		Calibratio		h _i wet ⁱⁿ	Calculated By	/ 1.	P. Pa	. The

PAILEDAN DOMMINION PRIVATE PREPARED LINES AMERICANALS IN LICENSES

COMPLETE ENGINEERING GERVICE BOTTUM HOLE PRESSURES BAD DIL PAYIOS TEMPERATURE GURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH REDIRTERED PROFESSIONAL ENGINEER TELEPHONE B 1873 - H. G. BOX 968 B PETROLEUM LIFA 11/1/21N3 MIDLAND, YEDAB

LAMAN ERCHRENGEN Kred Proterrional Engineer FIELD ENGINEER

			Mo Statue of V		•		
		and the second	12,017 Produ		•		
			B.H.C.			esure Dah	
Casing. 5	Depth	12,034 pe	rt	Liner	Pac	.kor	·
Depth Feet	* Depth	Pressure List. Sq. In.	* Pressure	Gradient Lbs./Pt		•	
and the second s					Casing Press.		
Surface	نَّهُ	528			Tubing Press. Top of Fluid		
100 100 100 100 100 100 100 100 100 100	730)	30%a	2566	. 325	Top of Water		
7532	0.000	3373	650	. 325	HrsShut in		owing
5230	2000	3714			Temp.	2 0001	
	2000	2194	651	.325	ElevD.F.	G	. 18
12,902		4395		i.X.1	Lost Test Dat		2-57
· · · · · · · · · · · · · · · · · · ·	125		h1	. 325	Press. Last To		44
8 12.025		4436			B. H. P. Cho		24
					Loss/Day		3.47
					Choke Size		
					Oil Bbis/Day		
					Water Bible/D		
	· :				Total Bbls/Da		
					Orifice & Lin		
					Static & Diffe	rentici	
			-		Gor Sp. Gr.		
					Cu. Ft./day GOR		
				***	GFR		
		PRODUC	CTIVE INDEX-BBIA	s./days/lbs. d	ROP		,
Last Cumulativ Production	6	Press Prod	ent Cumulative luction	·	Production Between Tests		
	basyste.	Num	ibar 1128	5	Recovery Factor Ebls/pound lo		

DOMPLETE ENBINETHING STRVIDE BOTTOM HOLE PRESSUREE SAG-DIL GAYCOS TEMPERATURE BURYEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH HEGISTERED PROFESSIONAL ENGINEER TELEPHONE B-1678 - P. D. BOX 959 8 PETROLEUM LIFE BUILDING MIDLAND, TEXAS

LAMAR EBCHBERBER REDISTERED PROFESSIONAL ENGINEER FIELD EMBINEER

teld Harkle	Hadicla	Levonian Cour	aty			Storte	-
l'ost Date	-31-57	Time 11:30 A	ia. Ma. Status of V	WollStac	10		
						•	# V
or of Pay	Trofo	_ Total Depth _12	Produ	cing Formation	Dermeists		
, , . 9 1	MIR 5	12.034	5 11 4			sure Donne -815	5
uping		pth	B.H.C	Packer	Pres	sure Dunna	¥
raina ila	Tions	h 12.581 Per	4	Itner	Paci		
		i i i i i i i i i i i i i i i i i i i	2 have agreed to the same agreed to the				
Domith		D		Gradient			
Depta Feet	Depth	Processes Lbs. Sq. In.	Pronumo	Lbe/Ft			
					Createrer Pressure		
Sarting	· · · · · · · · · · · · · · · · · · ·	591			Publing Press.	522	
N + A-10 MMAR	79.00		2670	. 166	Top of Fluid	Acceptance	
7900	4	3001			Top of Water		
	2000		650	:326	HrsShut be		
5700		3792				1.900 . 1750	
	2000		652	326	ElevD.P.	G. 1816	
11,500		1,391			Last Test Date		
	125		<u>bl</u>	. 326	Prest Last Te		
2812,035		W135			B. H. P. Char		
					Loss/Doy	- 49	
		·			Choice Size Oil Bhia/Doy		
					Water Bbla/Do	ıy	 -
					Total Bols/Da		
		· · · · · · · · · · · · · · · · · · ·			Ortfice & Line		
· · · · · · · · · · · · · · · · · · ·			y		Static & Differ		
•	2.				Gar Sp. Gr.		- 1 (1)
• ··· · · · · · · · · · · · · · · · · ·	· 				Cu. FL/day		
					GOR		
					GFR		
	,	PRODUC	LIAN INDEX-PRI	S/DAYS/LES. D		i i i	
cast Cum ulcati	Ve .	Prese	ent Cumulative		Production		
roduction	-		uction ,		Between Tests		
					Recovery Pacto		
nstrument		Numl	ber 1126	6	Bbls/pound los		
lun By		C-10	vation No. 7		Calculated By	A. P. BIT	

EDMPLETE KNÖINKERING SERVIDE SOTTOM HOLE PRESSURES SASSOL HATIOS TEMPERATURE SUBVEYS

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WEST TEXAS OIL REPORTS

EVERETT L. MMITH

AND ENGINEERING DERVICE
TELEPHONE SHOPE . P. O. BOX PEE
B PETROLEUM LIPE BUILDING
MIDLAND, TEXAS

LAMAR ESCHSERSER REGISTERED PROFESSIONAL ENGINEER FIELD EHBINEER

Depth			ijan				2:30 P. K. opth 12,128				
Depth	-8150	re Datum	Pressu		_ Pocker		033 B.H.	epth 12.	B D	2 * 8 07	Tubing _
Costing Press. Costing Press. Surface Size Costing Press. Size Si			. Packer	1	ΘI	Lir	8 Peri	th 12,12	Dep	54*	Casing
Costing Press. Surface 532 Tubing Press. 7920 2563 32k Top of Fluid Surface 7920 3095 Top of Worter Bone 2020 650 325 Hira-Shut In 29 Flow 7920 2020 551 328 ElevD.F. Last Test Date 6:44 11,0720 1396 Last Test Date 6:44 127 1437 B. H. P. Change 30 Chike Sine Cit Bills/Day Chike Sine Cit Bills/Day Cottlice & Line Seatic & Differential Goe Sp. Gr. Cu. Pt./day GOR GFR PRODUCTIVE INDEX-BILS./DAYS/LIS. DBOP Less Cumulative Present Cumulative Production						*			*		
Surface S32			Proce.	Cosing Pre	1206/16		• 88+	TOP Od.			ा क्टर
79:00 2563 32h Top of Fulld Surface 79:00 3095 Top of Water Rece 2000 650 325 Hrs. Shul In 29 Flow 99:00 3745 Temp. 6 11 9000 11,0,200 1396 Lost Test Date 127 141 326 Press. Lost Test 1447 128 12,027 Loss/Day 6.51 Choke Size Cut Bhis/Day Water Bhis/Day Ortice & Line State & Differential Gas Sp. Gr. Cut Pt/day GOR GPR PRODUCTIVE INDEX BHS./DAYS/LBS. DBOP Loss Cumulative Production		110						532	•		Surfa
7900 3745 Top of Water 1000 2000 550 325 Hrs. Shut in 29 Plow 7900 2000 551 12 Elev. D.F. 11,900 Elev. D.F. 12,900 127 127 121 125 Press. Last Test 1249 12,900 Choke Size Cit Bhis/Day Water Bhis/Day Water Bhis/Day Ortice & Line State of Differential Gas Sp. Gr. Cu. R./day GOR GFR PRODUCTIVE INDEX BUS./DAYS/LIS. DBOP Loss Cumulative Present Cumulative Production					324	563					
9900 3745 Temp. 6 11 900* 2000 651 328 Elev.DJ. 11,900 1396 Lost Test Doie 644 127 14 Press Lost Test 149 12,027 Loss/Day 6 50 Choke Size Chi Bhle/Day Chile Size Oil Bhle/Day Total Bhle/Day Cottlos & Line Static & Differential Gos Sp. Gr. Cu. Pt./day GOR GFR PRODUCTIVE INDEX-BBLS/DAYS/LBS, DBOP Loss Cumulative Present Cumulative Production		Lone				r ·		3095			
2000 651 Last Test Date 127 12 Press. Last Test Life 127 13 Press. Last Test Life 128 Press. Last Test Life 129 Choke Size Cit Bible/Day Choke Size Cit Bible/Day Water Bible/Day Ortice & Line Static & Differential Gos Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BBLS./DAYS/List. DBOP Loss Cumulative Present Cumulative Production	ring	Flow	t la 29	Hrs. Shut I	.325	650			555		
127 127 128 Press. Lost Test 129 B. H. P. Change Choke Size Cit Bhls/Day Water Bhls/Day Water Bhls/Day Ortfoe & Line Static & Differential Gos Sp. Gr. Cu. Pt./day GOR GFR PRODUCTIVE HIDEX-BILS./DAYS/LNS. DROP Loss Cumulative Present Cumulative Production	7120	9001	11,	Temp.		-		3745			9900
127 12 12 12 12 12 12 12 12 12 12 12 12 12 1	<u> 211 </u>	- 1			, <u>)25</u>	<u>851</u>		1227	000	5(
Loss/Day Loss/Day Choke Size Choke Size Oil Blok/Day Water Blok/Day Total Blok/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu Pt/day GOR GPR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DBOP Last Cumulative Present Cumulative Production	<u> </u>							1395		<u> </u>	11,90
Choke Size Chi Bible/Day Water Bible/Day Water Bible/Day Total Bible/Day Oritice & Line Static & Differential Goe Sp. Gr. Cu Pt./day GOR GPR PRODUCTIVE INDEX-BBLS/DAYS/LBS. DROP Less Cumulative Production	<u> </u>				225			1148	127]	12 22
Choke Size Cti Bbls/Day Water Bbls/Day Total Bbls/Day Ortice & Line Static & Differential Goe Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BBLS/DAYS/LBS. DROP Less Cumulative Production								4431		<u> </u>	16 (C) K
Cti Bbls/Day Water Bbls/Day Total Bbls/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu Pt/day GOR GPR PRODUCTIVE INDEX-BBLS/DAYS/LBS. DROP Less Cumulative Production											
Water Bbls/Day Total Bbls/Day Orthon & Line Static & Differential Goe Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BBLS/DAYS/LBS. DROP Less Cumulative Production					· · · · · · · · · · · · · · · · · · ·						
Total Bhis/Day Ortice & Line Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BBLS/DAYS/LINE. DROP Less Cumulative Present Cumulative Production						ــــــــــــــــــــــــــــــــــــ				~ ~~ ~~	
Ortice & Line Static & Differential Gas Sp. Gr. Cu. Pt./day GOR GPR PRODUCTIVE INDEX-BUS./DAYS/LMS. DROP Less Cumulative Present Cumulative Production					·						
Static & Differential Gas Sp. Gr. Cu Pt/day GOR GPR PRODUCTIVE INDEX-BUS/DAYS/LIS. DROP Less Cumulative Present Cumulative Production					•		***				
Gos Sp. Gr. Cu Pt./day GOR GPR PRODUCTIVE INDEX-BILS/DAYS/LBS. DBOP Less Cumulative Present Cumulative Production		d									
PRODUCTIVE INDEX-BBLS./DAYS/LBS. DBOP Loss Cumulative Present Cumulative Production					·						
PRODUCTIVE INDEX-BILS./DAYS/LIS. DROP Loss Cumulative Present Cumulative Production			gay	Cu PL/da							
PRODUCTIVE HIDEX-BILS./DAYS/LIS. DROP Loss Cumulative Present Cumulative Production				GOR					*****		
Loss Cumulative Present Cumulative Production			, ;	GPR							
Instrument Aperada Number 11766 Recovery Foctor Instrument Aperada Number 11766 Recovery Foctor			Teets Factor	Production Between Te Recovery Po		lative	Present Cu Production			<u>n</u>	Production

PAULADAS COMMISSION REPORTA PREPARES LEATE APPRAISALS EVALUATIONS COMPLETE ENGINEERING GERVICE SCTTOM HOLE PRESSURES GAS-DIL RAYIOS TEMPERATURE GURYRYS

WEST TEXAS OIL REPORTS

AND ENGINEERING SERVICE

EVERSTY L. MITH PRODUCTION OF THE PROPERTY OF TELEPHONE 8-1672 - F. O. BOX 968 8 PETROLEUM CIPY BUILDING MIDLAND, TEXAS

LAMAR ENGINEERSER
REGISTERED PROFESSIONAL ENBINEER
FIELD ENGINEER

Test Date . In	31-57	Time 10:30	A. K. Status	of Well	Statte			
Top of Pay	11,596	_ Total Depth _	12,030 Pr	educing Form	nation Davis	mian_		
Tubing 2*	EUS De	pth 12,007	B.H.C.	Pac	ker	Pres	sure Datum	, -81
Casing 5	Depth	12,030	Perf	Liner.		Pacl		
Depth	*	Pressure			rdient			
Feet	Depth	Lba. Sq. In.	Pressur	Lbe	√PL		· ·	
						Press.		
a de de la constante de la con		531				Fluid	531 Surface	
المستسسسين المراث المستسسسين الحياض في الم	_7900	3096	2565			Wotter		
			650			nut in		ring
	س سند د بدو الانكال الانتقاب.	2745		A.	Temp.		1.900	
ு நாடுக்கு இதிக்குக்கையும்	2:00	e e e e e e e e e e e e e e e e e e e	651		25 ElevE			3677
1-,700		<u>4397</u>	-		Lost 1	est Date	6-2-	
	127		31	3		Lost Te	et LLC	
78 119727		4.35				P. Char	1ge 30	
				·	Loss/I		0.5	1
				-	Chcke			
						ls/Day		· 4
					W aler	Bbls/Da Bbls/Da	<u> </u>	¢ .
						& Line		
· · · · · · · · · · · · · · · · · · ·						& Differ		
	مشاعد فصما مديد				Gas 8			r .
***						/day		·············
					GOR			
					GFA			
		PRODU	JCTIVE INDEX-	BBLS./DAYS/	LBS. DROP			
Lost Curadiativ	· 6	Pre	esent Cumulativ		Product			
find num		Pro	duction	all announced and recommendation of the second	Between			
maji (ment	keria	Nu	mber	_nrig		ry Facto und los		· · · · · · · · · · · · · · · · · · ·
Bon By	io Maine	C	dibration No.		Calcula	ت و لک		_

BONPLEY2 ENGINERRING GENVIOR ACTTOM HOLE PRESBURES BAB-DIL RATION TEMPERATURE SURVEYS

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WEST TEXAS OIL REPORTS

AND ENGINEERING ALAVILE

EVERETT L. BMITM
GEGINTEREO PROFERBIONAL ENGINEER

TELEPHONE 2-1578 - P. O. BOX 463 8 PETROLEUM LIFE BUILDING, MIDLANG, TEXAS

LAMAR ESCHBERBER RESISTERED PROFESSIONAL ENSINEER FIGLO ENSINEER

Obst Date Is	31-52	Time 5:30 L.	Status of V	VellStat1	<u> </u>	
Top of Pay	11,978	Total Depth	12.010 Produ	ing Formation	Deventan	
Tribing	ZUR De	pth 12,000	B.H.C	Packer	Pressure	Datum
Oraina 51	Denti	12.010 p.		Imar	Packer_	*, •
		***************************************		441194		
Depth Feet	* Depth	Presence Lbs. Sq. In.	Pressure	Gradient Line./Pa		
			,		Casing Press.	
Surless		574				36
	7900		2575		Top of Fluid	
75.X		3091			Top of Water	
	2000		51	,326	HrsShut In 50	Flowing
2920		37.2			Temp. 11.9	17
33 000	2002	110	652	.326	Last Test Date	Gr. 300
12,937	194	1439h		100	Press. Last Test	6.2.67
ta 12.036_	135	Jah 38	bk	326	B. H. P. Change	
كونوعــ ٢١.					Loss/Day	0.30
					Choke Size	B.33
, a separation of the same sections of					Oil Bble/Day	
					Water Bble/Day	
					Total Bbls/Day	
					Orifice & Line	
	·				Static & Differentia	1
					Gas Sp. Gr.	
		· · · · · · · · · · · · · · · · · · ·		·	Cu. Pt./day	
		·			GOR GER	
	.,,				GE II	
		• • • • • • • • • • • • • • • • • • • •	tive index-bri			1
Last Cumulati Production	ve		nt Cumulative action		Production Between Tests	
	Anerada	Numl			Recovery Fattor Bbls/pound loss	•

SOMPLETE ENSINEERING GERVIOE BOTTOM HINE PREGRENES GAD UIL HUTION TEMPERATURE SURVEYS

- 1 € 1 €

WEST TEXAS OF REPORTS

EVERETT C BMITH FED-STERRO FROZERSIONAL ENGINEER TELEPHONE # 1872 A. O. BOX 988 EPHOLOUV COF BUILDING & BAKET CHADGIN

LAMAR ERGHRERIER PEGINTERNO PROFESSIONAL ENSINEER

Freda . Marsh	Claditia Dev	enter Coun	ty La	1		State May	March
			:"				
Test Date _If	21-27 Ti	ine. 1870 P.	. No europe Status of V	Veli Stati			·
Top of Pay	Noys: Tol	al Depth 12	230 Produ	cing Formation	Devonian		~
Tubing 28	EUE Depth	12,135	внс	Packer	Pre	ssure Datum	67
Casing 3	Depth_3	ialis Dud		Liner	Dow	-kar	-
	water to the transfer						
Depth Feet		essure s. Sq. In.	† Pressure	Gradient Lbs./Pt.	and the second		
1 001	Depth Lo	s. org. 146	Lidentia	104./56	Cosing Press.		-
					Tubing Press		
NAME OF THE PARTY	20.30		25.62	324	Top of Fluid		
7120		בחונ			Top of Water		-
Lites	2500	÷	850	325	-HrsShui la	97 Flow	ring
3902		3.753			Temp. @	11,9001	
	2000		650	325	Elev.D.F.	Gr.	
15,900					Lost Test Dor	to 6m3	-57
	174		ho	- 325	Press. Lost T	eet kh	
12,024		kili3			B. H. P. Ox	mge •	
					Loss/Day	Ç.	5
					Chake Size		
					Oil Bible/Day		
					Water Bbla/L		
					Total Bois/De		
					Ortfice & Lin		*
					Static & Diffe	rectici.	
	ing.	· · · · · · · · · · · · · · · · · · ·			Gas Sp. Gr.		
<u> </u>			· · · · · · · · · · · · · · · · · · ·		Cu. Ft./day	-	
					GOR GFR		
					Gra		
		PRODUCT	IVE DIDEX-BELL	S./DAYS/LBS.	DROP		**************************************
Lost Cumulative Froduction	ve .	Preser Produ	nt Cumulative ction	*	Production Between Tests		•
Instrument	Armysta	Numb	•	11266	Recovery Fact Bbls/pound lo	or or	
Ron By	L, Es Aber	calibr	ation No.	7	Calculated By	Aa Pa	There

SOMPLETE ENBINEERING GERVIUS BOTTOM HOLE PRESSURES GAR-CIL MATION TENPERATORE BURYEYS

WEST TEXAS OIL REPORTS

EVERET? L. MMITH VEGINIERCO PROFENSIONAL ENGINEER

TELEPHONE S-1878 - P. Q BOX 985 8 PETROLEUM LIFE SUILDING MIDLAND, TEXAS

LAMAR ZBUMBERGER REGISTERED PREFESSIONAL ENGINEER FIELD ENGINEER

Test Date	31-57	Time 4	00 P. M. Sk	atus of Well	5	tetté		•
						Devonina		
and the second second						Pn		805
	4.0	-					MANUAL TYCH	##
Oreing Fig.	Depti	12,115	_ Peri	Lin	· · · · · · · · · · · · · · · · · · ·	Pa	cker	
Depth	4. ★	Pressure.			Gradient			•
Feet	Depth	Lbs. 8q. 1	in. Pro	MENTE	Lbe/FL			
						Combine Proces		1 1 2
Surface		51.3				Tubing Press	91	
	75:00		2	559	324	Top of Fluid		
7900		31.00				Top of Water		
بستنده بنيج والسب	2000			850	325	Atra-Shut la		
9930		3752				Temp. 6		17.5
	2000			650	325	Elev. D.F. Loss Test Do		37
11,900	12L	117.05	·			Press. Last 1		<u> </u>
	124	it files		<u> </u>	.381	B. H. P. Co		FF
। 200		- Barts				Loss/Day		8-
						Choke Stree	¥1	
	-					Oil Bols/Day		
	· · · · · · · · · · · · · · · · · · ·			 	· · · · · · · · · · · · · · · · · · ·	Water Bbls		
						Total Bols/D		
	· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·	 ;-;	Orifice & Lit		
			· · · · · · · · · · · · · · · · · · ·		·	Stanic & Dide	rentical	
-		i.	· ·			Gas Sp. Gr.		
			e e e e e e e e e e e e e e e e e e e			Os Pt/day		
						GOR		
					**	GPR		Y
Last Cumulativ		73	ODUCTIVE DE	- · · · · · · · · · · · · · · · · · · ·		Production		
Production	-		Production		<u> </u>	Between Test		g ger der F
Instrument	Arm	orede _	Number	11265		Recovery For Bbls/pound k	or Xes	
Run By	L. Eson		Calibration N	10. 7		Calculated By		Ber

GOMPLEYK ENBINEERING SERVICE BOTTOM MOLE PRESSURES GABRIL PAYIOS TEMPLEATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVICE

REGISTERED PROFESSIONAL ENGINEER

TELEPHONE 2-1898 - P. O. SON 958 8 PETTOLEUM LIFE SUILDING MIDLAND, TEXAS

LAMAR CECHBERGER FIGURERO PROFEDENMAL CHOMICER FIELD CHAMCER

Park Data 7	_31_52	w 5100	P. Stotus of	tarin Rk	:tie
lest Date		11me2:33	TO SILIDIC CT	Well	
Cep of Pay	11.981 T	otal Depth	12, 120 Produ	acing Formation	_ Broster
'ubing 2"	BJE Depth	11,956	B.H.C	Packer	Pressure Datum -8150
Casing 54	Depth	12 <u>.010</u> 1	Perl	Linet	Pocker
Depth	•	Propoure		Gradient	
Fe ct		be. Sq. ls.	Prousuro	Lbs/PL	
					Casing Press.
Serfice		559			Tubing Press. 559
	7990		25 84	.325	Top of Fluid Burface
7900		3123			Top of Water Home
	2000		550	.325	Hrs. Shut In 29 Flowing
9900		3773			Темр. @ 11.900 17507
	2000	2.4	650	. 325	ElevD.F. Gc. 1877
11,900		14.23	• •		Lost Test Date Plant Test
	121		39	325	Press. Last Test
3 10,0771		1.62			B. H. P. Charge
					Loss/Day
					Choke Size
					Ol Bols/Day
	·				Water Bols/Day
				· · · · · · · · · · · · · · · · · · ·	Total Bible/Day
		······································			Orifice & Line
·					Static & Differential Gas Sp. Gr.
	·				Cu. Pt./day
					GOR
		*			GFR •
		,			
		PROD	OCTIVE INDEX-BE	LS./DAYS/LSS. D	
Lest Cumulati Production	V 0		esent Cumulative		Production Between Tests
Instrument	Areneda	Nı	imber	11265	Recovery Factor Bhls/pound loss
Reco Re	La Einber	Cc	dibration No.	*	Calculated By A. P. Parr

COMPLETE ENGINEERING GERVIDE BOTTOM HOLE PREBURGE SAE-OIL GATIOS TEMPERATURE BUSYEYS

WEST TEXAS OIL REPORTS

AND ENDINEERING BERVISE

EVERETT L BAFTH
SEG-STEIN PROFESSONAL ENGINEER

TELEPHONE B-1878 - P. C. BOX 653 B PETROLEHM LIFE BUILDING MIDLAND, TEXAS

LAMAR ESCHSERSER PESISTRED PROPESSIONAL ENGINEER FIELD ENGINEER

		Marian County			
Test Date	-1-57	Time 2:30 A. W.	Status of \	Well Sta	110
Top of Fay . 1	2,939	Total Depth 11.9	70 Produ	cing Formation	Berestas
Fubina . 2*	NE Dept	11.54 B			Pressure Dotum =8150
Casing 53°	Depth	11.937 Peri			Packer
Depth Feet	* Namels 1	Promoure	* Pressure	Gradient	
1.641	Depth :	Lbs. Sq. In.	E. Company	Lbe/Pt.	Cosing Press.
Sentan		tao .			Tubing Press. 529
- 1140a		- 323	2573	.326	Top of Fluid Surface
7236	سسيب	3102			Top of Water Hope
	2000		652	.326	HrsShut in 26 Flowing
3900		3753			Temp. @ 11.9000 17901
	2000		652	. 196	ElevD.F. Gr. 3680
17,900		bb 06			Last Test Date 6-1-57
	130		<u> 12</u>	.326	Press. Lost Test
(3 12.030		1448			B. H. P. Change
					Loss/Day 0.19
·					Choke Size
وروا المستقر المرادة المستوارة والأ	-				Oil Bole/Day
					Water Bbls/Day
					Total Bible/Day Orifice & Line
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					Ges Sp. Gr.
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للا للسيون المنظم وللا المام والا المام المام المام والا المام والا المام والمام والمام والمام والمام والمام و المام					GFR
		PRODUCTIV	E INDEX-BBL	S./DAYS/LBS. D	
Last Cummath Préduction	70	Present (Production	Cumulative on		Production Between Tesis
Instroment	áusra.ia	Number		11266	Recovery Factor Bbls/pound loss
e. •.		ne'r Colibrati	, xx		Calculated By 4, 2, Par

COMPLETE ENGINEERING SERVICE ECTION HOLE PRESSURES SAS-DIL AATIOS TINGERATURE EURVEYS

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WEST TEXAS OIL REPORTS

AND ENDINESHING STAVICE

EVERETT L. AMITH STUIDTERED PROFESSIONAL ENGINEER TELEPHONE #-1872 - P. O. SOX 988 # PETROLEUM CIPE AUCOINS MIDLAND, TEXAR

LAMAR EGUMBERGER REGISTERED PROFESSIONAL ZUSINGER FIELD ENSINEER

Company Rel	it love	Lease.	Warret	-State Well No. 1
maid North Glads	la Berraian	County	Les ·	StateBer_Max
Test Date Rayas	7 Time 9.5	30 A. W. Status of	Well 34	atts
Top of Fay 11,930	Total Depth	11,995 Proc	ducing Formation	Dawelse
Turing 20 mil	Depth 11,975	В.Н.С.	Packer	Pressure Datum =87
Cosing 53.	Depth 11,936	Perf	Liner	Packer
Depth *	Processed	*	Gradie	
	w est of a	. Processo	Lbs/N	Casing Press.
Surface	<u>s</u> ,c			Tubing Press.
7900		2568	.325	Top of Fluid
79-30	3113	6300		Top of Water
		650	325	HrsShut in 27 Ploying
\$5.00	3763			Temp. @ 11.900* 1.5
2000		651		DevD.F. Gr. \$27
11,900	1614			Lost Test Dots 6-1-5
12'		h	-325	Press. Last Test
18 12,027	b455			A. H. P. Chemon
				Loss/Day 0
				Choke Stre
				Qu Bbla/Doy
			•	Water Bible/Day
		1 2		Total Bols/Day
				Orifice & Line
The same of the sa				Static & Differential
				Gas Sp. Gr.
dien wie in wie erstelle wie zeren megengenfelle flessken geschiede.				Cu. Ft./day
				GOR
	·			GFR
		DUCTIVE INDEX-81	LE /DAYS/LIG	
Last Cumulative Production		Present Cumulative Production		Production Between Tests
Instrument &	.ers.ds	Number	11266	Recovery Factor Bbls/pound loss
Run By L. Read		Calibration No.		Calculated By A. P. Berr

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" Ho	rin Cladlet		Jan ity	Lai	State New Mexic
Fast Cale	tion and	Time 12 800	Moon Signs of	Well Stat	ile
Tee et l'an	11,575		12,020 Proce		
			346		
					Previoure Datum
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Depih Feet	↓ Depth	Pressure Los. Sq. In.	r Pressure	Gradient Lbs./Ft.	
1 at 1 1 2 6	in the second second	530			Casing Press. Tobing Press. 598
1 faul \$ €ai.♥	7230		2555	.323	Top of Fruid Surface
	. 2000	31.53	647	. 324	Top of Woter No.
		3500			Temp. @ 11.900 17567
	2000	447	647	.324	Flev. D.F. Gr. 3877
Sapelle.	221		39	.324	Last Test Date halous
u vois links.	ek bos mitt	الله		1.29.0	B. H. P. Change
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					Water Bbls/Day
		. •			Total Bbls/Day
• • •	in the second section of the section				Carrice & Line
· · · · · · · · · · · · · · · · · · ·					* Static & Differential .
				en de la companya en estado de la companya de la co	Gas Sp. Gr.
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		PROD	ACTIVE INDEX BIL	S./DAYS/LBS. I	DROP
East Carral Production	rdive		osent Cumulative Soluction		Production Between Tests
jase jaket	५५मा	eda Ni	mber 11	266	Recovery Factor Biologramma loss
eleger, By	L. 72.5'15:	ergar C	althration No.	5	Calculated By A. P. Farr

Calmbufure and Resources

ODMYLETE ENDINEERING BERVIGE BUTTOM HOUSE ENTRECHEE BARTICUL KAT DE TEWSTELLE EUROSE

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WEST TENAS OIL REPORTS.

AND ENGINEER 45 HERVICE

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TELEPHONE 23572 M D 608 955
N PORCESS OF BUILDING

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est Dote 1.	(-2-57	Time, 131X P	• K. Status er	Weil Stat	
or off ay	er e	fota Depth	Pendi	icing Formation	and the state of t
		•	•		Pressure Datum -81
Sarang 💃	Similar Nept		gt	. Laer	Packer
				•	
Depth Feet	Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient Lbe./Ft	
······································					Casing Press.
Size		598	n rænami kan er er	and the second of the second o	Tubing Fress. 598 Top of Fluid Surface
	70 34	•	2555	.323	Top of Fluid Surface
\$ \$		3253			Top of Water Kone
	2000		646	,323	Hrs. Shut In 30 Flowing
200		A 101 10 A1		an alaman da da da da d	Temp @ 11,900 175 Elev. U.F . Gr. 3869
	2000	and the second of the second o	547	.Jeh	Eev. DF . Gr. 3869
11,37.0		: 1 : 7			Last Test Date 4-10-57
(1.38 c. 75.	119		39	321	Frees. List Test 4527
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e maj feed :				in the second second second	Loss Duy 0,79
	e verter en en en elle Erye. La company	in a service de la conservação La conservação de la		A. A	Choke Size
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					Static & Differential
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		Carrier de la			GFR .
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		PRODUC	CTIVE INDEX E 81	S./DAYS/LBS. I	OROP
gw Could write the	ative		ent Cumulative luction		Production Between Tests
athamart.	Ares	Non	iker in	26 6	Recovery Factor Bbls/pound loss
. F	La Bestina	•	oration No.	K .	Office of the A. P. Perr

COMPLETE ENGINERRING BERYICE ACTION HOLE PARESURES SABLUS PATICS TENNICHATURE BUSYEVS

WEST TEXAS OIL REPORTS AT VARE ENINESHIERS CHA

EVERETE L. SMITH HEW ETCHED PROFESS DYAL FRUINGER PERPHONE 2-1872 - P. D. HOX VES PERFOLEUM SPE 4., UN2 MIDLAND, TEXAS

LAMAR ESCHBERBER Perintere Prombesional Engineer Field Engineer

	a Ilaaicl		ty	·-		State Ker Marie
ोड्डा २० - प्र ेन	1:57	Type 2800 P.	🚂 Status of 1	Weli	<u>ttle</u>	
Sou ôt Say	11,958	Total Dept. 12.0	76 Produ	cing Formation	-	
14 to . 2* 1	ETE: Ner	otn 12 ₈ 012	E.H.C.	Pricker	Pres	sure Datum -415
Taramar Sign	Destric	11,988 Peri		line	Poc	rot
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		man oq. m.	1.000010		Cosing Press.	
\$25 '825		610	v		Tubing Press	610
· · · · · · · · · · · · · · · · · · ·	7900	and the second of the second s	2560	,32h	Top of Fluid	Surface
72/2		31.72		an in the processing of the state of the sta	Top of Water	None
	500C	7	6 u 7	324	Hrs. Shut In	31 Flowing
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	2000	and the second s	642	.325	F. C. vel3	Gr. 3840
D. SW.	e ginamenta a a ama	ulico	The second control of	ر است. مصافحات میشد است. ما شاهدان	Last Test Date	
	112	and in the second of the secon	39	.325	Press. Last Te	
32.7.62.5		1505			B. H. P. Char	
	and the second second second			·	Loss/Day Choke Size	0.49
The second secon				and the second of the second o	Oil Bbls/Day	
		enter meggene i kanalan kalan ka			Water Bbls/Do	TV
والمستوادة أي الماليات		e magni i sa sa santalan da a da a da			Total Bbls/Da	
		والقعدام ويتجام أحداره أحجيه والمحاجات أأدار		فيج مرسست واراعات العادات	Ortice & Line	
		e e e e e e e e e e e e e e e e e e e			Static & Differ	
				and the second second	Gas Sp. Gr.	
					Cu. Ft./day	
		e a management was as the course toward and particularly and the course of the course			GOR	
					GFR	
		PRODUCT	TVE INDEX-BBL	S./DAYS/LBS. D	ROP	
ast Camulative Reclauten		Frasen Produc	nt Cumulative	:	Production Between Tests	
nstrument	hammada.	Numb	er 1126	6	Recovery Facto. Bbls/pound los	s
ies Sy L.			ation No. 6		Calculated By	A. P. Parr

PALLADAD COMMINISCON REPORTA PREPARIO LENGO PERMICALA EVANDATIONA

GOMPLETE ENGINEERING SERVICE BOTTO - HCGE PRESSURES BAS GIL HATTOS TEMPERATURE BURYEYS

WEST TEXAS OIL REPORTS

EVERETT L. SMITH!
HEUSSTEILD PROFESSIONAL ENGINEER

TELEPHONE 2-1672 P. D. BOX 958 B PETROLEUM GARE BUILDING

LAMAR ESCHSCROCK NEGISTERED PROPESSIONAL ENSINEER FIELD ENGIVEER

INDIVIDUAL WELL DATA SHEET

Pield Wrth	Glasion	Со	untý L	Les	State Mark	Max
Test Date :	-57	Time 3:00	P. K. Status of	Well Sta	kto	
Top of Pay		_ Total Depth	Proch	acing Formation		
Tolong 2	De De	pth	B.H.C.	Packer	Pressure Datum	, -8
Casing 5	Deptl		ert	Liner	Packer	• •
Depth Feet	* Depth	Pressure Lbs. Sq. In.	t Pressure	Gradient Lbs./Ft.		:
Surface		59€			Casing Press. Tubing Press. 596	
7900	7900	3154	2550	.324	Top of Fluid Surface Top of Water News	
95 CQ	\$000	3801	847	.24	Temp. @ 11.9001	ring 17
11,500	scco	L1650	64.9	.325	Last Test Date	3871 -57
13 17 752	177	1430	40	.325	Press. Last Test B. H. P. Change	
					Loss/Day 6. Choke Size	B
					Otl Bbls/Day Water Bbls/Day	-
And the second s					Total Bbls/Day Crifice & Line	
		,			Static & Differential Gas Sp. Gr.	
	a ann a ann a				Cu. Ft./day GOR	
and the second second second second second	C				GFR	
÷: ¿			ICTIVE INDEX-BB	LS./D ays/lbg. I		* 1.
Leaf Containtly Production	v j		sem: Camulative duction:		Production Between Tests	
Centromont	. Absta	da Nu	riber 1	1266	Recovery Factor Bbls/pound loss	-

Oslawarions and Remarks:

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WEST TEXAS OIL REPORTS

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TELEPHONE 2-1672 - P. O. BOX 965 & PLINGLEUM CITE EURCHNE MIDLAND, TEXAS

LAMAR EBOMBERDER REDISTERED PROTEBBRIDHAL ERBINSER FIELD ENGINEER

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		the state of the same of the s			
er bute . 🚈	2-57	Time 12 :00 M	993 Status of V	Veil	
opeticrI	3,000	_ Tota Depth 12	108 Produc	ing Formation	
					Pressure Datum -8150
asia 🚰 🗆	⊅ep'	h 12,108 Per	1	Line	Packer
Depth Feet	Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient Lbs./Ft.	
					Casing Press.
Selate		619			Tubing Press. 639
المراجع فيعطم مراجع	7700	ار المراجعة المراجعة المراجعة المراجعة ال	2561	32h	Top of Phild Surples
. 770 <u></u>	والمتعلقة	3160			Top of Water Base
		3826	6ù8	.324	Hrs. Shu! in 27 Flowing
. 33X		3326	ستنبي فيستمسي		Temp. @ 11.900! 17509
	Sign	11/8	650	<u> </u>	Elev. D.F. Gr. 1067
. liji22	سنت سنتيت	101			Last Test Date 1-10-67
			38	325	Press. Last Test LC.8 B. H. P. Change
		4516			B. H. P. Change
					Chake Size
					Oil Bbls/Day
					Maria Dila Mari
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		ر المراكب الم			
					Ctation & Differential
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			and the second s	****	GFR

RECEPTERED PROFESSIONAL ENGINEER

COMPLETE ENGINEERING BERVICE BOTTOM HOLE PREBEUREE GAB-ON BATIME TEMPERATURE BURVEYB

WEST TEXAS OIL REPORTS AND ENGINEERING PERVICE

P SETAGLEUM CHE SCHLD NO MIDLAND, TEXAS

LAMAR ESCHBZROEN , REGISTERED PHOFESSTONAL ENSINEER FIELD ENGINEER

Company R				-		Well i	¥
Field . Nort	h Vladiol	<u> </u>	County	L		Ctate	
Tasi Date . 6-3	-57	Time 1:00	P. K. Status	of Well	Stat	ile	
Claret Da, II.		. Total Depth		roducing	Formation	-	
Subing 29 B	UE Dep	·	в.ч.с		Packer	Pressure Date	<u>61</u>
Casing 5	. Depth.		. Perf	Line	91	Packer	
Depth Feet	* Depth	Pressure Lbs. Sq. In	Pressu	no.	Gradient Lbs./Ft		
						Casing Press.	
Sor fere		678				Tubing Press. 619	S
	1200		2562		.324	Top of Fluid Surfa	10
79.30		3161					Z.
· · · · · · · · · · · · · · · · · · ·	2000		649		,325		owtog
22/22		3830				Temp. @ 11,900	177
	2000		650		.355	Elev.D.F.	. 95
11,900		_ Mi80				Last Test Date	17
	115		37		.325	Press, Last Test	<u> </u>
12,015		1517				B. H. P. Change	
						Loss/Day 0	<u>.</u>
		en en ante de francisco en accompanyo de la companyo de la company				Choke Size	
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The second second second second						Water Bbls/Day	
			en e man en staggement de la come de la colonia de la colo		1	Total Bibls/Day	
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اداری مانورد میدوسد اندازیزید کا دیداد	د دیدهاد استنادهای.					Static & Differential	
in the second				25.		Gas Sp. Gr.	
There is a common and an arrangement						Cu. Ft/day	,
						GOR	· .
		: ~			<u> </u>	GFR	
		PRO	DUCTIVE INDEX	BBLS./DI	AYS/LBS. D	ROP	
Last Curculative Production)		Present Cumulati Production	ve		Production Between Tests	
Instrument	Laserad	4.	Number	11266	r No san di San American di San	Recovery Factor Bbls/pound loss	
Ron By T.	Eschberg	- . (Calibration No.	6		Calculated By A. P. 1	Passe

CONTRACTOR MARKETING RESIDENCY FRANCE.

CONTRACTOR MARKETING

CONTRACTOR MARKETING

SOMMUTTE FILGINATENINE BERNICE BOTTOM HOLE PRESIDES OFF THE SATION TEMPERATURE BURIEFS

WEST TEXAS OIL REPORTS

AND ENGINEER NA BERVICE

ATGISTIQUE PROFESSIONE, PSQ.NESS

TELEPHONE \$4378 - CAM, G. WIN 988 II PETROLFON LET 40 LENY MIDLAND, TEXAS

LAMAR ESCHBERBER REGILTERED PROMESTIONAL ENGINEER FIELD ENVINEER

Company	Ralph.	Surre .	Leas	en i saco	ritel-Wallage	Well No. 1
Pieti Nazi	h Biadto	11 c	ounty	Lea		Strite Ben Mex
lesi Dete §	-3-57	Time 7860	to Me Storue	of Well	Statis	
op af fay	e competence of the contract	Total Depta _		oducing For	nation	
rubina - 29	ECE .	Dorm		Pac	kerPre	ssure Datum -815
Asma 53	Daj	,: 1); }	Ferf	Liner	Pro	rer
Depth Feel	* Depth	Pressure Lbs. Sq. In.	* Prossur		dient./Ft.	
					Casing Press.	
Surface.		421	e en	ar mar summar i vanagang	Tubing Press.	602
	7900	421	2550	.31	Top of Fluid	
. 13.30		3172			TOD OF MODEL	
8050	7000	3010			Temp. @ 1	
33.20	2000	383.9	Zi. O		L ElevD.F.	Gr. 3872
15 0.00		14.67			Last Test Dat	Piret Tont
	127	*** *** * *** *** *** *** *** *** ***	40		and the same and t	
		4507	ramenta à la carda (\$19 02) il		B. H. P. Cha	190
					Loss/Dory	
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r O se eseps ese eise.		معاموه المحاضية والمعاصرة		e de la composición	Oil Bbls/Day	
		يتواسسا أحساحا ماسوالعاج			Wuter Bbls/D	
		ان بدارومیو داخارسه معادات			Ibtal Bbls/Da	У
فاستعادات الأسا		د. مارید میداد این ام اندمه درد د	الله والإساد للتعالظ القطعة . التا والإساد للتعالظ القطعة .		Orllice & Line	
	بدايس بالمنشوب	en er en	والتفاهي والمراب بأراء فللتمس	يستبعلنا أالمنشف	Static & Differ	ental
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		e or experience of the second			Cu. Ft./day	
					GOR GFR	·
		DB/A	UCTIVE INDEX	ppic (have		
Lest Cumulati Preduction	və	Pr	*		Production Between Tests	
nsitusnen!	Armind	بللوم مداعي والهوامة المحادثة فالواقات	ımber	11266	Recovery Factor Bbls/pound los	
Pun By D.	Evel/Det	ger C	dibration No.	6	Calculated By	A. P. Fare

CERTARN PERDICA REPORTED PARAMED. CEAGE FEPPAINAUM LVACUATIONE

COMPLETE ENGINEERING SERVICE SOTTON HOLE PRESSURES GAS-DIL AATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. SMITH
REGISTERED PROFESSIONE ENGINEER

TELEPHONE 2-1672 P. C. MOX #58 V 16740.EUM LIFE 67.57N3 MIGLAND, TEXAB

LAMAR EBCHBERDER Sebieferes Professional Endinger Piklo enginerr

field do rta			cunty				_ State	
Pest Date :	-57	1'lme 7:50	A. M. Sla	tus of Well		stie .		
Top of Pay . 11	256	. Total Depth _	12,017	. Producing	Formation		·	-
Tubbia 2*			5.25				essure I	Vatum -67
- อิสสภาคู: วิวิ ริ	Lepth	12.034	Peri	Lir	191	Pc	cker	*
Depth Feet	* Depth	Pressure Lbs. Sq. In.	Pro	*	Gradient Lbs./Ft		ing the t	
						Casing Pres	<u> </u>	
Surian	en an army a francisco.	KAA	- 			"ubing Pres		J
	7900	angan mana magambahan kanan sa kanan sa manan sa	255	4	.324	Top of Fluid		la es
7920		3127				Top of Wate)
	2000		6	8	.324	Hrs. Shut In	24	Flowing
A A 4 4		A contract				Temp. @	11.90	20' 175
	2000		64	8	.324	ElevD.F.		Gr. 307
11,500		bb23	er en er			Last Test Do		1-10-57
12,725	125		<u> </u>	L	. 32h	Press. Last 2		MILE
1 12,725						B. H. P. Ch	ange	- <u>N</u>
			· 			Loss/Day	 	0,96
						Choke Size		
						Oil Bbls/Day Water Bbls/		
				~.		Total Bbls/D		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
•						~~~ * 12		
		e van de market en				Gas Sp. Gr.		
						Cu. Ft/day		
						GOR		-
						GFR		
		PRODI	uctive ind	EX-BELS./D	AYS/LBS. D	ROP		in the second se
Lost Cumulative Production		Pre Pre	esant Cumul oduction	ative	<u>.</u>	Production . Between Tests		
Instrument	Andres					Recovery Fac Bhls/pound 1	tor 088	
15 15 7	War a S. B. James	Co	dimenton Me	. 4		Calculated By	. A 10	. Marini

TOOLS THE COMMINGION NEEDS TO PREPARED ON ONLY SERVICES

COMPLETE ENGINEERING SERVICE BOITOM HOLE PRESSURES JAB-OIL PATIUS TEMPERATURE BURYEYS

WEST TEXAS OIL REPORTS AND ENGINEERING BERVICE TELEPHONE BIBTS - P. O. BOX 888 B. FEIRDLESH LIFE BILL NJ LA ENGINEER MIDLAND, TEXAB REGISTERS

EVERETY (, SMITH ANDISTERE FROMERBIONAL ENGINÉER

LAMAR EBCH**BERGER** Neg-Btered Propessional **Embineer** Pielo engineer

INDIVIDUAL WELL DATA SHEET

Company	Ralph Lowe	• • • • • • • • • • • • • • • • • • •	Lease	La ston-Stat	Well No. 2
Field Nord	th Gradio	Con	unty	les .	State New Mercles
lesi Dote 5	2-56	Time 5 100 A	Status of We	oli 🤧	esta
fop of Pay	12,010	Total Depth _1	7,070 Producti	ng Form ation	
Publing 2!	1978 D4	pth 12,034	B.H.C	Pocker	Pressure Datum -611
zang . F	Dept	12 ₂ 061 p		Iner	Packer :
Depth Feet	* Depth	Pressure Lbs. Sq. In.	Pressure	Gradient Lbs./Pt.	
					Casing Press.
Parties.		558			Tubing Press. 558
	7300		2543	.)25	Top of Fluid Surface
প্রে ১০		3121			Top of Water Sense *
	2000		643	324	HrsShut in 25 Flowing
9900		3769			Temp. @ 11.000 1750
	2000			. 124	Elev.D.F. G. 1875
11,900		1417			Last Test Date
	125		L 1	.324	Press. Last Test
1 12.725		Lk58			B. H. P. Change
					Loss/Day 0.96
	-				Choke Size
		en.			Oil Bbls/Day
					Water Bbis/Day
San . 	en e				Total Bbis/Day
					Orifice & Line
				· · · · · · · · · · · · · · · · · · ·	Static & Differential
					Gos Sp. Gr.
و مودند					Cu. Ft/day
					GOR
					GFR •
·		PRODU	CTIVE INDEX-BBIS.	/DAYS/LBS. D	PROP
ast Camulativ roduction	ve		sent Cumulative duction		Production Batween Tests
nstrum ent	Lucy	Nor	mber 11266		Recovery Factor Bbls/pound loss
Run By I.	. Bielden	ger Cal	ibration No. 6		Calculated By A. P. Parr

Calculations and Remarks:

HANNEAN COMMITTION ASSESSES ERPANTS CONTRACTOR OF THE APPRAISALS

DOTTOM HOLE PRESSURES BAS-GIL RATIOS TEMPERATURE BURYEYS

WEST TEXAS OF REPORTS

EVERETY L. SMITH
HEGITYERSO PROTEINGUNEUR

TELEPHONE 2-1872 P. D. BOX 968

A PETROLEUM SIPE BUILDING MIDLAHD, TEXAS

LAMAR ESCHBERBER REGISTERED PROFESSIONAL ENGINEER FIELD ENGINEER

hield	W Chilli	Cou	nty	Less	State New Man
Test Date 6	-2-57	Time 11:00 A	Status ci	Well State	<u> </u>
Top ct Pay	12,007	Total Derth _ 12	128 Produ	icing Formation	
Fobing 200	BUE 1	Depth 12.033	B.H.C.	Packer	Pressure Datum -
Casing. 530	Dej	oth 12,128 Per	d	Lines	Packer
	4	4			
Dèpth Feet	* Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient Lbs./Ft	
	<u></u>			ويونين والمناوي والمناوي أستان المناوات	Casing Press.
3375.00		5%		7	Tubing Press. 575
	7900		2547	.323	Top of Fluid
					Top of Water Bear
	2000		647	.324	HrsShut in 28 Flowing
2900		3773			Temp. @ 11.900 17
			6kA	324	ElevD.F. Gr. 387
11,23	·	معلنا			Last Test Date
	127				Press. Last Test
8 . A 2 . O 27		bi 67		·	B. H. P. Change
					Loss/Day 1.48
					Chake Size
		بالمسائدة والمواسوسية			Oil Bbls/Day
					Water Bble/Day
		والعربيسة تبرعه الماراء العالم معروا المعقوسة	and the control of the second		Total Bols/Day
					Orifice & Line
					Static & Differential
				Carlos a la carlo de la carlo de la companione	Gas Sp. Gr. Cu. Ft./day
		en an esta esta esta esta esta esta esta esta	and the second s	The state of the same of the state of the st	GOR
		and the second second of the second s	and the control of the party of the con-	and the second s	GFR
					Of R
		PRODUC	TIVE INDEX BAL	S./DAYS/LBS. D	ROP.
Last Cumulady Production	6	Presc Prod	int Cumuláli yə uctiori		Production Between Tests
In Hudraent	LatenA	a Num	ber 116		Hecovery Factor Birls/pound loss
Run By L.	Rankber	rav Calil	oration No. 6	· .	Calculated By A. P. Rega

TEACH POAD COMMINERION REFERES PREPARES
SCHOOL ANDRAINALS

BOMPLETE ENGINSERING BERVIDE BOTTOM MOLE PRESSURES 346 DIL FATTOS TEMPESATORE BURYSTS

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WEST TEXAS OIL REPORTS AND ENGINEER NO SERVICE TELEPHONE 2-1872 - H. O. BOX 888 H. PETROLLOW - FL. P. COING H. PETROLLOW - FL. P. COING RESISTERS RESISTERS

CVERETY L. MMITH MCG 5168TO PROFESSIONAL ENGINEES

LAMAR ÉSCHBERGER REJUTEPEC PROFESSIONAL ENGINEER FIELD ENGINEER

INDIVIDUAL WELL DATA SHEET

Company	Balph Lo	110	Lease_L	arton-State	Weil No.
Seld Xact	d Iladial	Coun	y		Skale New Market
ratibae 5≓	1-57	Time 10800 A.	Me Status of W	/ell	ny sarahana ny rang na mbana mbandana marana mana mana ana kana kana kana kana ka
Top of Fay	Angeles and the second of the second of the second	Total Depth	Produc	ing Formation	
Turing 20	Del Del	pth	B.H.C.	Packer	Pressure Datum
Ocsing 1	Depth	Perf		Liner	Packer
Depth Feet	* Depth	Pressure Lbs. Sq. In.	* Pressure	Gradieni Lbs./Ft.	
1 501	<u>nehio</u>	Ma. eq. m.		Theyer	Casing Press.
Suftee		573			Tubing Press. 579
**************************************			2556	,324	Top of Fluid Surface
7900		1129			Top of Water Mana
and the second s	2000	····	GLB.	.22	Hrs. Shut In 60 Flowing
9300		3777			Temp. @ 11.900 }
a manage of the contract of th	2020		650	.325	ElevD.F. Gr.
11.530		bl.27			Last Test Date Pines Test
	127		k1	.325	Press. Last Test
12,027		LL 68			B. H. P. Change
					Loss/Day
· ·		ja Sasanan sasan			Choke Stae
The second secon		er i de engle un en			Qui Bible/Day
					Water Bbls/Day
and the second of the second o		en en et man en good en op en partie en	allika sajla mengalagang sa sajangs sajiralah na 1946 at 1978 at		Total Bhis/Day
		پېښېد ندار ومند د دست د ر			Orifice & Line
,				· · · · · · · · · · · · · · · · · · ·	Static & Differential
·					Gos Sp. Gr.
					Cu. Ft./day GOR
					GPR .
		PRODUCT	TVE INDEX-BBLS	./DAYS/LBS. D	
dotet Cumulative Preduction	• •	Preser Produ	nt Cumulative		Production Between Tests
instrument	_ Azerade	Numb	er 11266		Recovery Factor Bbls/pound loss
Run By L.	Esonhare	Calibr	ration No. 5		Calculated By A. P. Tarr

Colodians and Remarks:

PALLETON OF MANAGER REGISCON DARKANES STANS AND DESIGNAL BYN OFFICIAL

DOMPLE'S ENGINEERING GERVIDE BOPPING HOLE PRESSURES JAG-CIL GEFICS TEMPERATURE GURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVICE

EVERETT É, BMITH HEGIDTERED PROFERRIQUEL ENGINEEN

Calculations and Remarks:

TELEPHONE 2-18.73 A D. WOX V\$3
ONLY CHE SCIOLS
BASH GUNALOIM

LAMAR ESCHBERGER REGISTERED PROFESSIONAL ENSINEER FISCO ENSINEME

			DIVIONI	UAL WELL	DATA SHEET	•		
Company	Ralph Le	<u> </u>	· p. sc. · s.	Lerse	State "A"		Well No	.
Eisld	क्षेत्र वाकात्र	4	County	e de la compania de l	Lon		State	or, Ma
Tait Dose	5-2-57	Time 210) A, M.	Status of W	/all Statle	e e e e e e e e e e e e e e e e e e e		
Top of Fay	11.978	Total Depth	12,010	Produc	ing Formation			
Tubina 2"	DOR De	pth 12,000	B.H.	C	Packer	Pro	esure Datup	<u>-6</u>
Caring 5	Depth	herry i di dilakinga may i diskip menjami	Port.		Liner	Par	.kor	· · · · ·
Depth Fact	* Depth	Pressure Lbs. Sq. In		* Prossure	Gradient Lbs./Ft.		•	
						Coaing Press		
Serinos		557				Tubing Press	557	
	7900	and the second of the second of the second		2561		Top of Fluid		
73 °C	: 	3118				Top of Water		
	2000			649		Hirs. Shut In		ring
22/6		3767	- ender degree seemen as we			Temp. @		
	2000		<u> </u>	650	.325	ElevD.F.		333
11,930		_kk17				Lost Test Da		40
	136					Press. Last T	بار	
12 136	+	Jul 63				B. H. P. Cho		U
						Loss/Day		<u> </u>
	·					Choke Stae		
	 			· ·	`	Oil Bble/Day		
المراجعة المراجعة المراجعة المراجعة						Water Bbls/L		
in the second of						Total Bbls/Do		
						Orifice & Lin		· ,
ار مشيخ مصافحات المحادث	الوسجاءة ماساسات					Static & Diffe	rentici	773 3 174
					and the second s	Gas Sp. Gr.		
		-				Cu. Ft/day		
*** * * * * * * * * * * * * * * * * * *	gapen on the same of the same					GOR		
` <u></u>						GFR		
		PRO	DUCTIVE	index-bals	./DAYS/LBS. D	ROP		•
Last Cumulativ	/e		Present Cw Production	mulative		Production Between Tests		
Instrument	<u> </u>	8	Number	1126		Recovery Factor Bbls/pound lo		
Run By	. Es sist er	ret (Calibration	No. 6	- x ⁴ - t	Calculated By	1.2	Berry

VALUDILAG COMMINSION BEFORTS PREFARED LEVEL FORFATRALS.
EVALUATIONS

DUMPLETE CHRINGERING BERVIOR SCHOOL HOLE PRESSURES BAS-UIL RATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVICE

EVERETT L. BMITH REUFSTERED HEIDFESSIDNAL ENDINGER TELEPHONE 8-1873 P. D. BOX 958 8: FETROLEUM CIPE BUILDING MIOLAND, TEXAB

LAMAR ESCHBERGER REDISTRED PROFESSIONAL ENSINCES

ield Horth	Cladiola	County	Los			State Nov	Mantee
						×1100	
'est-Date 6_}	ŽĪTime	8100 A. X.	Status of Well	542410		- 	
11	990 Total !	12.5%	.			•	
op or ray	esse Total	uepine	Producing	tormonion.			
ubino 2° E	UE Depta 1	2,135 B.r.	C	Packer	Press	ure Dahim	-8150
				•			
krsing 25	Depth. 12	Perl.	Lir	(er	Pack	×	
Dogth	* Prose		t	Gradient			
Feet	Depth Lbs. 8	iq. In.	Prossure	Lbs./Ft	Casing Press.		
3		10	أستجد جنست منجر محيث		Tubing Press.	585	
2mileon	58	2	2545	. 122	Top of Fluid	Surface	
2900	313	n			Top of Water	Yese	
	2000	B	4.3	. 12h	Hiss Shut In 2	Flow	ing.
9900	377	8			Temp. @ 1	1,900	137
	2000		660	. 125	ElevDF.	Q. ,	
11,900	July 2				Last Test Date		
	124		<u> </u>	-325	Press. Last Tes		
1 12,024		<u> </u>			B. H. P. Chicas	<u> </u>	
· · · · · · · · · · · · · · · · · · ·					Logs/Day Choke Size		
		<u></u>		. 	Oil Bbls/Day		
*			شدها وبالماء ي مستحث		Water Bhls/Da		
raine Errimana					Total Bbls/Day		
	and the same first and an extension of the same of the	er commercial access on a commercial access	e mana anua e e e e e e e e e e e e e e e e e e e		Oritice & Line		
	ىنىي بىلەرچىلا مالىدالىدە دەر دەردىكا بىرىلىدى د				Static & Differe	ntial	
	******		e entremonatura de en		Gus Sp. Gr.	a, 7	
	ententa or espera a para en espera de la constanta de la const			المالة المالية	Cu. Ft/day		:
	* *************************************	to the state of th) 	and the second s	GOR		
					GFR		
		PRODUCTIVE	INDEX-BELS./D	AYS/LAS. D	ROP	-	
* *	•						
ust Cumulative		Present Cu	m ulativ e		Production	• [
roduction		Production			Between Tests Recovery Factor		
ustruraent	Armeda	Number	11256		Bble/pound loss		
ium Ey	Section	Calibration	i No. 🗷		Calculated By	A. P. No	**

RAILEGOAD COMMISSE ON BEACHTS PREFERED CHARLESTONS

COMPLETE ENGINEERING SERVICE FUTTOM HOLE PROSEURES BAS-DIL BATIOS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

EVERSTT L SHITH REGISTERED PROFESSIONAL ENGINEER

TELEPHONE 2-1572 P. O. BGX 988 P PETROLEUM LIFE BUILDING MIOLAND, TEXAB

LAMAR EBUMBERGER REDIGTERED PROFESGIONAL ENGINEER FIELD EMBINEER

Field North Classola	•	-			_ State _ Men	
Test Date 6-3-57	Time 9100 A. J	Status of W	eli	9		
Top of Pay 11,995 T	otal Depth 12	116 Produc	ing Formation			
Tubing 20 EE Depth	12,005	B.H.C	Pocker	Po	osenko Dokula.	-1131
Casing 51 Depth		**		. `		
Susing Leput			Lift POL			
	Sa	· · · · · · · · · · · · · · · · · · ·	Geodieni	•		
	Pressure .bs. Sq. In.	Prossure	Lbs./Pt	en de la companya de La companya de la co		* *******
	an ode an			Casing Press		-
Surface	582	and a second second second second		Tubing Press		
7900	796	2550	381	Top of Fluid		
7900	3132		 	Top of Wate		
2000		666	.323	Hrs. Shut In	Marie Plant	ing
5920	3778			Temp. @	11,900	175
2000	**************************************	4.8	.324	DevD.F.	Ge,	
11,900	L126			Last Test Do		
124	. 2000	ko.	. 324	Press. Last	est	
1 12.024	1466	4.7		B. H. P. Ch	ange	22
				Loss/Day	0	12
				Choke Size		
				Oil Bbls/Day		
				Water Bible/		
				Total Bibls/D		
				Ortflog & Lit		
				Static & Diffe		
	····			Gas Sp. Gr.		
				Cu. Ft./day		
				COR		·
			· · · · · · · · · · · · · · · · · · ·	GFR	1 1 4 9	
· ·	PRODUCT	IVE INDEX-BELS	/DAYS/LBS. D	ROP		
Last Cumulative	Presen	t Cumulative		Production Between Tests	a	
Production	Produc	TUON		Recovery Fac		
nstrument Aperada	Numbe	or 1126	<u> </u>	Bbls/pound le		
Run By L. Kuchherger	Calibr	atton No. 6		Calculated By	4 P. I	.

RAILAGAS COMMIBUION REPORTS PREVANCO LEISE APPRAISALS CMALUATIONS

COMPLETE ENGINEERING EERVIRE BUTTOM HOLE PRESSURES GAE OIL RATIOS TEMPERATURE BURYTYS

WEST TEXAS OIL REPORTS AND ENGINEER NO BERVICE

EVERETT L SHITH BEDISTERED PROFESSIONAL ENGINEER

TELEPHONE 2-1875 F. C. BOX 988 8 PETROLE, M. LIFE BUILDING MICLAND, TEXAS

LAMAR ENGHNERMER REGISTERSO PROFESSIONAL SHEINEER PIELD ENSINEER

Field	M. Karana		Courity				_ State
Test Date	3-57	Time 9:90	A. H. S	tatus of Wei	Plati	9	**************************************
Top of Pay 1	,995	Total Depth	12,116	Producing	Formation		
Tubing	NE D	9pth 12,00	B.H.C		Packer	P	secure Dutum -6156
Casing 5	Deroi	h 12,115	Perf.	Lb			
Depth Feet	* Depth	Pressure Lhs. Sq. In.		*	Geodiesi Lbs./Pt.	•	
	Debrii	rem. Of Hi			PDEA.S.F.	Casing Pres	8.
Suctam		562				Tubing Pres	
	7900			\$50	_333	Top of Fluid	
7900		3132		- 		Top of Wat Hrs Short In	
	\$600	1000		4,6	ربر.	Temp. @	
9333	2000	3776		41	.34.	ElevD.F.	11,900 175
11,900	- AYXY	Pres				Last Test De	
	124			ha	. 32h	Press.	Test Made
mi 12,024		. hk 66				B. H. P. Ch	
						Loss/Day	
				<u>آ دختن</u> دیہ	 	Choke Size	
						Ou Bbls/Der	
						Water Bible/ Total Bible/I	
				·		Ortfice & Li	
				•		Statte & Diff	
						Gos Sp. Gr.	
						Ou Ft/day	
						GOR	
	-			and the second second second second		GFR	
	•	PBO	DUCTIVE IN	IDEX BBLS.A	AYS/LBS. D	ROP	
Last Cumulativ Production	•	F	resent Cum Production			Production Between Test	
Instrument	Amerad		lumber	11266		Recovery Foo Bbls/pound 1	
Run By L.	Evenber		Zalibration (No. 4		Calculated B	A. P. Perr

TO PROGRESS OF THE PROGRESS OF

CHAPTE ENGINEERING BERVICE
PATER HOLE PRESSURES
SHOLL RATIOS
HAPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENDINEERING SERVICE

TELEPHONE 2-1472 - F. O. BOX 983.
S. PETROCCOM CIPE BUCCOING SHOULAND, TEXAS

UNAR ESCHBERGER HEINTED PROFESSIONAL ENGINEER FES O EXENSER

Company III			L	•		***	Well No	
Field	h Glace	Q.1/A	County		<u> </u>		State	77 100
Test Date	<u>}-57</u>	Time 11:0	O A. Me Start	us of Well	Sta	idft.	· · · · · · · · · · · · · · · · · · ·	
Top of Pay 1	,936	Yotal Depth	11,995	Producing	Formation.			
Turing 2" 1	UE De	pth 11.99	E.H.C.	2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 -	Packer	Pres	sure Dartus	" -61 <u>.</u>
Gusing 53	Dept	11,936	Pert	Lin	ei <u>a</u>	Pock	er	
Depth Feet	± Depth	Pressure 11 Sq. In	Pres	*	Cradient			
						Cosing Press.		
Surflee		566				Tubing Press.	44	
	7900		255	<u> </u>	,323	Top of Fluid	Ser Fred	
7930		3115				Top of Worler	None	
		3766	&	T	324			wing
3500	51000	1100	64	<u> </u>	.324	Elev.DI	1,900	712
11,900	.4.200	hhlk	99	4	. •254	Last Test Date		3177 0-67
7			<u> </u>	1	124	Press Last Te		
12.27	• • • • • • • • • • • • • • • • • • •	455		-		B. H. P. Char		
						Loss/Day	0.	30
		,				Choke Size		
						Oil Blobs, Dary		
				.,		Water Bots/De		
				فتناها ومواشلت		Total Bble/Dar		
						Oridos & Litue		
				-		Staile & Differe	ential	
						Gas Sp. Gr. Cu Ft/day		
						GOR		
in the second of						GFR GFR	· · · · · · · · · · · · · · · · · · ·	
						Orn		
<u>.</u>		PRO	DUCTIVE IND	EX-BBLS./D	AYS/LBS. I	DROP	s ang ini Fil	
Last Consulative Production			Present Cumul Production	gtive :	and the second second	Production Petween Tests	-	
instrument	America		Number	11266		Recovery Factor Bbla/pound loss	r 8	
Run By I.	Bahism	e est	Calibration No	o. 6		Colculated By	L P.	Rer

, RALLEGAD COMMITTION REPURTS CHEPARED LEADS APPRAISALE EVALUATIONS

DOMPLETE EMBINERAINE BERVIDE BOTTOM HOLE PRESEURES BAG OIL GATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVICE

EVERETY U. 5M/TH ESGISTERED FRAFESSIONAL CNG NEER TELEPHONE EISTE - P. O. BOX 993 3 MEIBULEUM LIFE 127 3 NG MIGLAND, TEXAB

LAMAN BECHBERGER REGISYSTED PHOFESSIONAL ENTINESS FIELD ENBINESS

INDIVIDUAL WELL DATA SHEET

Piete Nort	re ossinaan	1.4	_					M A
Reid	feria i simurita mirita ter Maraman mereka		County	i	V		. State	M HOX!
Test Date . 4:1	l≎ <u>-</u> 5?	Time 2:	Ç Р. Ж.	Startis of W	Statte	e de la companya de l		4 19
Top of Pay	12.000	_ Total Dept	12,12	Produc	ing Formation	·		
Curing		ر رائو نما				Pre	esure Datu	m -815
Casing 15	Dont	- 12.129	Dert		Liner			
and the second s							. B. O.I	
Depth Feet	Depta	Pressure Lbs. Sq. li	n.	Pressure	Gradient Lbs./Ft			
						Casing Press		
		o Atological our marketine			· · · · · · · · · · · · · · · · · · ·	Tubing Press		
				2573	.325	Top of Fluid	Surfa	Ç9
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م دانو و می این این درید دستی. این دانو و می			i de la compania	640	•324	Temp. @		17501
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	LENGT	LL RC	. T	030	•767	Lost Test Da		
Wind of the	127	To BREE		1,2	.325	Proces. Last T		
12.23		4521		12.5		B. H. P. Cho		76
خدو ند		er en	r values, a consequence	. was demonstrated by		Loss/Day	l.	
	······································		,			Choke Size		
	· · · · · · · · · · · · · · · · · · ·	And the complete production of the complete prod				Oil Bbls/Day		
The second secon	una herina yan ingani.	· · · · • • · · · · · · · · · · · · · ·				Water Bbis/I		
				e e emigrativa de la compania de la La compania de la co	-	Total Bbls/D	ху	
		te en				Oritice & Lin	Ð	
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					The second secon	Gas Sp. Gr.	·	•
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no er ver		PRO	DUCTIVE	INDEX-BELS	/DAYS/LBS. D	ROP		
and the countries	i s		Present O			Production		
firefuction .			Production		and the second seco	Between Tests		
ir Meannert	Asserts	∖ts	Number	112	%	Recovery Fact Bbls/pound lo		
lans Ev 🗀 🛋	इंद्रीक्रम्हित्यस्थ	A = 10 A = .	Calibratio		THE RESIDENCE OF THE PARTY OF T	Calculated By	A. P.	Fare

Calculations and Romarks:

- RACERCAO COMMIBBION PERONTS PREPARED LEANE APPRAISALS LEANE APPRAISALS

BOMPLETE EMBINGERING SERVICE BOTTON HOLE PRESSURES BAB-OIL RATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS AND ENBINEERING SERVICE TELEPHONE SINGS P. D. BOX 988 E PETROLEUM LIFE BUILDING ENBINEER MIDLAND, TEXAS REGISTERS

EVERETT L EM TH ACTI STEREO PROFERD DIAL ENBINEER

LAMAR FÖCH BERÜER REGIBTERED PROFESSISMAL ENSINSER FIELD ENSINERÄ

Field North	Cladiol	Cour	ty Le	<u> </u>	State Nov Me
Test Date _i-	10-57	Time 12:30 P	M. Status of We	ell Statie	
Top of Pay U	,973	Total Depth 12.	010 Product	ng Formation	
Tubing 20 E	US D	epth 12,0001	В.Н.С.	Packer	Pressure Dotum81
Casing 518	Dep	Per	i i	Liner	Pocket
Karangan kanalan salah sal				100	
Depth Feet	h Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient Lbs./Ft.	
					Cosing Press
Sertice	M O	600			Tubing Press 600
7:00	75(X)	4122	2559	.324	Top of Fluid Surface
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9900	50.3.1	3509	050	-325	
990)	0000	30%			Temp. @ 11,900* 1755 y Elev.D.F. Gr. 3886
11 222	2000	<u> 4</u> .35	651	,325	ElevD.F. Gr. 3886 Last Test Date 3-13-57
11,500	115	4400	<u> </u>	.25	Press. List Tost 1:505
32,325	432	1501			B. H. P. Change -1
China de Car		34.27.1			Loss/Day
					Choke Size
					Oil Bbls/Day
					Water Biols/Day
	Name of the Control o				Total Bhis/Day
			annak Mantana adalah para kangan dan penganak dan berakan berakan berakan berakan berakan berakan berakan bera 	The second secon	Ortifice & Line
					Static & Differential
			÷	· · · · · · · · · · · · · · · · · · ·	Gas Sp. Gr.
	Transition in the second secon		entre de la companya de la companya La companya de la co	manaya aya ayan ayan ayan ayan ayan ayan	Cu. Ft./day
-		and who discount his one only the angles of the same			GOR
			The second secon	·	GFR
		PRODUCT	rive index-bels.	/DAYS/LBS. D	ROP
Last Cumulation	Y &	Presei Produ	nt Cumulative		Production Between Tests
Instrument .	Lierada	Numt	or 112/6		Recovery Factor Bbls/pound loss
D. B. China		ger Calib			Calculated By A. P. Parr

RAFLRGAD COMMINNION BEFORTS PREFEREUT LEAST APPRA GALS
 EVALUATIONS

----SOTTOM HOLE PRESSURES SAS-OIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING REQUICE

EVERETT L. SMITH REGIETZED PROFESSED CALLENGER

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EPRESENTATION OF STATES SHORTS TO BE SHOULD BE

LAMAR ESCHSERBER REGISTERED PROPESSIONAL ENSINEER FIGLD ENSINEER

op of Pay 12,756 Total Depth 12,017 Producing Formation	est Date _ 4-1	10-57	Time 11:3	C A. M. Status c	i Weli	Sta	tie		
Depth									*
Depth Pressure Depth Lie. Sq. In. Pressure Lie./Ft. Casing Press.	ubing 2# I	Dept	h 12,016	B.H.C	,	Packe:	Pressi	re Dotum	-61
Casing Press.	raing 510	Dopth	12,034	Pert	Line). 	Packe	r	
Durface Sic Tubing Press Sic Sic Top of Fluid Services		# Depth		Pressure					- %
79.00 3176 325 Top of Fluid Services 2000 31825 Hrs. Shut in 26 Flowing 325 Hrs. Shut in 26 Hrs. Shut							.		
2900 3176 Top of Water 1000 2000 3825 Hrs. Shut in 28 Flowing 1900 175 2000 3825 Hrs. Shut in 28 Flowing 11,900 175 11,900 175 Hrs. Test Date 2557 11,900 Hrs. 11,900 Hrs.									
2000 3825 Flowing 11,900 175		1300	2256	2566		.325			
11.900 175 2000 650 325 ElevD.F. Gr. 177 11.900 1475 Last Test Date 2557 11.900 1475 Last Test Date 2557 11.500 B. H. P. Change 64 10.000 Choke Size Cit Bbis/Day Choke Size Cit Bbis/Day Total Bbis/Day Orifice 6 Line Static & Differential Gore Sp. Grt Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Canadiative Production Production Between Tests Recovery Factor		2000	31/6	<u>Vre</u>		155		Flouring	
2000 650 325 ElevD.F. Gr. 1975 11.9(0) 14.75 Last Test Date 2.3.57 11.5 11 325 Press. Last Test 1.580 12.325 B. H. P. Change 4 Loss/Day 1.00 Choke Size Oil Bbls/Day Water Bbls/Day Total Bbls/Day Orifice 6 Line Static S Differential Gae Sp. Gri Cu Ft/day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Canadative Present Cumulative Production Setween Tests Recovery Factor			3895	<u> </u>		4367			
11.9(0) 14.75 Last Test Date 2.53 12.005 14.75 B. H. P. Change 4.1 Loss/Day 1.00 Choke Size Oit Bbls/Day Water Bbls/Day Total Bbls/Day Orifice 6 Line Static & Differential Gas Sp. Grt Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Canadative Production Between Tests Recovery Factor				650		.325		Gr. 10	
11.5 12.3C5 13.3C5 13.3C5 13.3C5 13.3C5 14.4C5 15.3C5 15.3C5	11,900		进75						
B. H. P. Change Loss/Day Choke Size Oil Bbls/Day Water Bbls/Day Total Bbls/Day Orifice & Line Static & Differential Gas Sp. Gr? Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Camelative Production Production Production Between Tests Recovery Factor		12.5		k1	÷	.325			
Choke Size Chi Bbls/Day Water Bbls/Day Total Bbls/Day Total Bbls/Day Orifice & Line Static & Differential Gas Sp. Grs Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Canadative Present Cumulative Production Production Between Tests Recovery Factor	12.025	amay a airii di aaba	1516				B. H. P. Chang		
Oth Bbls/Day Water Bbls/Day Total Bbls/Day Orifice & Line Static & Differential Gas Sp. Grt Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Complative Production Production Production Production Recovery Factor	· .							1.00	
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Orlice & Line Static & Differential Gas Sp. Gri Cu. Ft./day GCR GFR PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Caraciative Present Cumulative Production Production Production Recovery Factor			<u> </u>						
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PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Complative Production Production Between Tests Recovery Factor	To a second seco								
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PRODUCTIVE INDEX-BBLS./DAYS/LBS. DROP et Canadiative Production Production Between Tests Recovery Factor									
Production Production Between Tests Recovery Factor							GFR		
		•				: :	Between Tests	\$	
	trantent	Amereda	N	nupet	11266				

COMPLETE ENGINEERING SERVICE SOTTOM HOLE PRESSURES SAS-GIL RATIOS TEMPERATURE SCRVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING STRVICE

EVERETT L. SMITH
RECISTENCE PROFESSIONAL ENGINEER

Calculations and Remarks:

TELEPHONE 2-1878 - P. Q. BOX 988 8 PETROLLUM LIFE SULLOINS MIDLAND, TEXAS

LAMAR EBUMBERBER REDISTEREO PROPERSIONAL EMBINERR FIELD ENSINEER

Field Sor	th Gladi	cla c	ounity		Les	,	State New You
			•				
Test Date4:	-20-57	Time 1:30	P. M. Status	of Well	St	atto	
Top of Pay	11.985	Total Depth _	12,020	roducina	Formation	.199	
		pth 12,008	and the second		_ Packer		ure Dukum
							MV LORD
Cosing _5	Dept	h 11.985	Perf	Lin	ar	Porch	r
		•					
Dopth	*	Pressure	*		Gradient	<i>y</i>	
Feet	Depth	Lbs. Sq. In.	Press	E0	Lbs/Ft.		
						Casing Press.	
ivr. (40e		<u>627</u>	بى چېدىدىد			Tubing Press.	627
	<u>7900 </u>		25 5 5	<u></u>	.323	Top of Fluid	Surface
73(%)	B 6 8 6	3182				Top of Water	Hone
0000	2000	3831	64,9		.324		13 Flowing
9900	40/0	2071	100	·		Temp. @)* ElevD.F.	900 1750
11 663	5000	1) 65	650	<u>'</u>	.325	Last Teel Date	G. 3871
11,900		1,461				Press. Last Tes	2-4-57
3.0.000	121	4520	39	<u> </u>	325	B. H. P. Chote	
12,021		H520				Loss/Day	
						Choke Slaw	1.50
The second of th						Of Bble/Day	
						Water Bols/Dar	
						Total Bols/Day	
***************************************			14.4			Orifice & Line	
						Static & Differen	ottol
the case of the second section of the secti						Gas Sp. Gr.	ntici
						Ou Fildoy	
and the same of th				-	· · · · · · · · · · · · · · · · · · ·	GOR	
مراجع المستحد المستحد المستحد المستحدد المستحدد المستحدد المستحد المستحدد ا				···		GFR	
4		PROD	UCTIVE INDEX	BBLS./D.	AYS/LBS. D	ROP	•
Lost Cumulativ	8		esent Curaulati	ve		Production	•
Production		Pro	oduction			Between Tests	
Instrument	Amerad	la No	ımber	11266		Recovery Factor Bbls/pound loss	
Run By Lara						Calculated By	

SALINGAD COMMISSION REPORTS PREPARED.
LEASE APPRAISALS
STALINGTONS

COMPLETE ENGINEERING SERVICE SOTTOM HOLE PRESSURES TAB DIL RAYIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENBINEERING BERVICE

EVERETY & SMITH

TELEPHONE 2-1872 - P. O. BOX 988 8 PETROLEUM GEF SUICONA MIDLAND, TEXAS

LAMAR ESCHSERÖER PEGISTERED PROFESSTANAL ENSINEES FIELD ENSINEES

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			-			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Tost Date47	10 27	Time 5:30 P	• K. Status of	Well	Static	
Top of Pay		Cotal Depth	Prod	ucina Formati	general de la companya de la company	•
			to the			_@
Tubing	Depti	h	B.H.C	Packer	Press	ure Datum
Courses 54	Domile			i. La g agadan kan be	Packe	
Casing	Lupui	F9	п	_ Linei	PGCE	
Depth	*	Pressure	· · · · · · · · · · · · · · · · · · ·	Gradies	- -	
Feet		Lbs. Sq. in.	Presure	Lbs./Ft		
					Casing Press.	
Surface		631		•	Tubing Press.	631
	7990		2557	.324	Top of Fluid	Springe
7900		3188			Top of Water	lope
ا معمار فرجود موجود فرجود موجود الأمام	2000		650	.325	HrsShut In 3	
3600		3838			Тэтр. @ 11	
and the second section is a second	2000	<u> </u>	650	.325	ElevD.F.	G: 386
11,900		88رايا			Last Test Date	
	115			.325	Press. Last Tes	
12,019		L527			B. H. P. Chang	79
					Loss/Day Chak Stee	
	· · · · · · · · · · · · · · · · · · ·	•	 		Oil Bbla/Day	
					Water Bble/Day	
		-	* .		Total Bols/Day	
yer may kabu wan a sa muu					Ortfice & Line	
		· · · · · · · · · · · · · · · · · · ·			Static & Differen	atteri
The second secon					Gas Sp. Gr.	
			-		Cu. Ft./day	ð
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	4				GFR	
				· · · · · · · · · · · · · · · · · · ·		
		PRODUC	TIVE INDEX-BBI	ls./days/lbs	. DEOP	ě
Last Cumulative Preduction	9		ent Cumulative uction		Production Between Tests	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Instrument	Aneradi	Num	ber 1	1266	Recovery Factor Bbls/pound loss	
Run By Laza	ei feablian	cali)	oration No.),	Calculated By	A. P. Farr

GOMPLETE ENSINEERINS SERVICE STOTICH HOLE PRESSUSES SAS-DIL HATIOS TEMPERATURE SUSTEPS

WEST TEXAS OIL REPORTS

AND ENGINEERING BERVIOR

EVERETT L. AMITH HED STERED PROFESSIONAL ENGINEER TELEPHONE SISTE P. O. ROX 668 S PETROLEUM CIFE AUCDINE MIOLAND, TEXAS

LAMAR RECHERROER REGISTERED PROPERSIONAL ENGINEER FIELD ENBINEER

Field Parth 0	<u>ladinia</u>		County	LOA		State New Mex
Test Date 4-10	2-57	Time 2:3	A.M. Status	ož Well	Static	
Top of Pay 11.	239	Total Depth	11,970 Pro	oducing	Pormation .	
Tubing 24 EU	Dep	th 11,964	B.H.C		Packer	Pressure Dostum -81
Casing 25th	Depth_	11,939	Peri	Line	· · · · · · · · · · · · · · · · · · ·	Pocker
		-				
Pepth Feet	Depth	Pressure Lbs. Sq. in.	★ Pressure	•	Gradient Lbs./FL	
						Cosing Press.
Sorface	7700	592				Tubing Press. 592
	(3(3)		2558		. 324	Top of Fluid Sirface
7500	2700	3148	5.9		30	Top of Water Notice
9900	- 6 / JA	3797	offA		-324	Hrs. Shut in 35 Flowing Temp. @ 11.900* 1750*
7 7 - 44 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4	2000	3' 3'	61.9		.324	Elev. D.F. Gr. 3880
20,400		14.6			• 264	Lost Test Date 2-4-57
	120	سبب التفاعظا	1/2		. 32/4	Press. Lost Test 1562
12,030		11.88			- 36H	B. H. P. Change-/4
The state of the s						Loss/Day 1.16
						Choke Size
•						Oil Bbls/Day
a value a qual a company de la						Water Bills/Day
*******************************						Total Biols/Day
						Orifice & Line
1 	-		-			Static & Pitterential Gas Sp. Gr
					<u> </u>	r./day
					ند حفسی	GOR
						GFR
		PRO	DUCTIVE INDEX-	BLS./DA	YS/LDS. DI	BOP
Last Cumulative Production	,		Present Cumulative	9	•	Production Between Tests
Instrument Aze	cada		Number 11256			Recovery Factor Bbls/pound loss
Run By Lanar	Aschberge		Calibration No. 4	Į.		Calculated By A. P. Farr

ODMPLATE ENALMERSHING BERVICE BOTTOM HOLE PRESSURES BAG-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS AND ENBINEERIND BERVIDE TRLEPHONE S-1078 - P. D. BOX 900 H PETROLEUM SIFE SUILGINS RESISTERS

EVERETT L. BMITH REGISTERED PROFESSIONAL ENGINEER

LAMAR ESCHBERGER REBISTERED PROPESSIONAL SHEWNER FIELD ENSWEER

Company	Palph Low	\$	Low	5 0	Adamson		We	1 No3
Field Mcrt	h fladicla	c	ounty	-	Les		State	How Max
Test Date	10-57	Time 6:30	P. M. Stortus	of Well	Stat	lo	·,	
Top of Pay _1	1,598	Total Depth _	12.016 P	roducing	Formation			
			B.H.C				anura I	Cotton
· · ·		* * * * * * * * * * * * * * * * * * * *	Perf				<i>.</i> .	
	Doput.		T Y Champing a computation de.					
Depth Feet	* Depth	Pressure Lbs. Sq. in.	Proces	PO	Gradient Lbs./PL			
						Crising Prote		
Surface	24.00	633	de ro			Tubing Press Top of Plaid		
7500	7900	3191	2558		324	Top of Water		
	2000	2474	650	·	325	Hrs. Shut In	35	Flowing
9900		3841				Temp.	11,90	01 . 175
	2000		651		.325	Dov.D.F.		6.36
11,900		4492				Lost Test Do		437
12,019	119	4531			,325	Press. Loss T B. H. P. Che		
3 16 9 017		4551		<u> </u>		Loss/Day		1.30
						Choke Stee		***************************************
						Oil Bble/Day		
						Water Bole/		
	 					Total Bible/D		
						Orthon & Lin Static & Della		
				 -		Gas Sp. Gr.		
			·			Ou FL/day		
						GOR	1	
						GFR	· · · · · · · · · · · · · · · · · · ·	
Last Cumulati	ve	•	OCTIVE INDEX		AYS/LDG. I	Production		
Production			oduction			Between Tests		
Instrument	America	N	umber	11266	and the second s	Recovery Fac Bbls/pound le	icr >65	
Run By La	mer Bechbe	rger C	alibration No.	h	*	Calculated By	Δ.	P. Farr

NACTUAD COMMIDMION REPORTS PREPARED LEASE APPRAIGALS FIALUATIONS COMPLETE ENGINEERING BESTIGS SOTTOM HOLE PRESSURES SAS-DIL RATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENSINCERING SERVICE

EVERETT L. SMITH REGISTERED PROFESSIONAL ENGINEER TELEPHONE 2:1872 - P. D. BOX 953 8 PETROLEUM LIFE BUILDING MIDLANO, TEXAS

LAMAR ESCHBERSER REUISTERED PROFESSIONAL ENBINEER PICLD ENSINEER

Field	North	Gladiol	<u> </u>	County	*****	1	.04		Sk	<u> </u>	
Tast Do	le <u> </u>	0-57	Time_3	130 P. M	_ Status of	Well.	Stat	<u>ie</u>			
Top of F	уоу		Total De	pth	Proc	ducing	Formation			* -	
Tubing	54 E0	E Dep	th	В.	н.с	·	Pocker	P	19001 /1	e Datu	-615
Cosing.	510	Depth_		Perf		Line	5	P	acker.		
De; Fe	oth et	* Depth	Pressure Lbs. Sq.		* Pressure		Gradient Lbs./PL			urt Liveria	•
								Casing Pres			
\$a r	fise		631	-				Tubing Pres		631	
		7907			2558		.324	Top of Fluid		Suria	16
			3189		· · · · · · · · · · · · · · · · · · ·			Top of Wat Hrs. Shut In		long	wing
2003		<u> </u>	7.000	·	649		.325				
990		2000	3838		650		.325	Temp. @			3872
11,		2000	H-58		020		: • >6>	Last Test D			-57
	750	122	4400		40		.325	Press. Last		-16	
: 12.	102	-+	1528	······································			<u> </u>	B. H. P. C			
	->===						Gain	lanes/Day		0.1	8
								Choke Stee			
			-					Oil Bbis/Do			
					-			Water Bbls.			•
	1.							Total Bible			
								Orifice & L			1.5
								Static & Dif		œ	1
								Gos Sp. Gr			
****					<u> </u>			Cu. Ft./day			
								GOR			
								GFR			
			P	BODUCTIVI	E INDEX-BI	NS./DA	YS/LDS. D	ROP			
Last Cu Producti				Present C Productio	Damulative n			Production Between Test			
Instrume	ont	Arered	<u> </u>	Number		11266		Recovery Fac Bbls/pound			
Run By	F a	ar Esobb		Calibratio	- No	1.		Calculated B		. P. I	Fa

* HÁICHBAD COMMISSION REPORTS PREPAREO JEASE APPRAISALS EVALUATIONS

COMPLETE ENGINEERINE SERVICE BOTTOM HOLE PRESSURES SAB-D'L RATICS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING PERVICE

EVERETT L SMITH REGISTERED PROFESSIONAL ENSINEER

TELEPHONE S-1573 P. D. SOX 969

8 PETROLEUM LIFE SVILDING LAMAR ESCHSERGER
MIDLAND, TEXAS RESISTERED PROFESSIONAL ENGINEER
FIELD ENSINEER

DEDIVIDUAL WELL DATA SHEET

ompany	Ralph Low	<u> </u>	Legae Wa	llace	Well No. 2
ield <u>Varia</u>	Gladicla	Co	unty Les		State New Least on
est Date . E	10-57	Time 8230	A.M. Status of Weil	State	ló
			116 Producing		
Mas 21.6	E De	pth 12,005		_ Packer	Pressure Datum →6150
ionio Z	Dept	h <u>18,115</u> p	erfLin	er	Packer
Depth Feet	Depth	Pressure Lbs. Sq. In.	* Pressure	Gradient	
					Casing Press.
SICIACH		653			Tubing Press. 603
	7700		2551	.323	Top of Fluid Surface
מכ פר	-	3154			Top of Water yone
	2 000		546	1323	Hrs. Shut in 25 Flowing
9.220		3800		مستنف بيهيارماند	Temp. @ 11.9001 1750 P
g ji garegara	20%)		. '8\\$,324	ElevD.F. Gr. 3874
11,305		ևևկն		-	Last Test Date 2-4-57
	124		10	ر 324	Press. Last Test. 1559
12,724		rf98			B. H. P. Change _71 Loss/Day 1.11
					Choke Size
		· · · · · · · · · · · · · · · · · · ·			Oil Bbls/Day
				_ 	Water Bbls/Day
					Total Bbls/Day
					Orifice & Line
ing a second					Startic 6 Differential
2 .					Gas Sp. Gr.
					Cu. Ft./day
The second section of the sect				 	GOR
					GFR
si Camulatti odustion	7 9	Pre	CTIVE INDEX BBLS./D. sent Cumulative duction	AYS/LBS. D	Production Between Tests
it reent	kuerada	Nu	nicer 11266	er again againg in grandaidh a	Recovery Factor Bbls/pound loss
er Bo Lazar	r Brokker	Cal	thration No. 4	The second of th	Calculated By A. P. Farr

Coloalations and Remarks:

245. 3

- PAULEGAD COMMISSION REPORTS PRIMED LEASE APPRAIRALS ENAUGATIONS OBMOLETS ENGINESTING MERVICE BOTTOM HOLE PRESSURES MAS-OIL BATIOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING SERVICE

EVERETT L. BMITH HEGISTEFED PROFESSIONAL ENGINEER TELEPHONE SIRTS P. O. BOX 955

8 FETROLEUM LIFE SUILOING

MIDLAND, TEXAS

LAMAR ESCHSERGER REBISTERED PROPERSIONAL SUSMESSE FIELD ENSHESSE

Company _	Ralph Lo	¥•	Lecuse1	Vallaca	Well No. 1
Field Yarrah	Glaciol	a Cour	ity Let		Stote Ber Hexico
Test Date _4	-10-57	Time 1130 A.	Statue of We	oll Statie	
Top of Poy 1	1,990	Total Depth 12,	Produci	ng Formation	
Tuling 21	RUE	Depth 12,135	B.H.C	Packer	Preceure Donan 8150
Casing 54	D	pth 12, 115		Ines	Pocker
			*		
Depth Feet	Depth	Presse Lba. Sq. in.	Prograso	Gradient Lbs./PL	
					Cosing Press.
Surfice	20.30	611			Tubing Press. 513
75.22	7500	318	2545	.322	Top of Fluid Surface
	2000	2170	647		Top of Water+ Trace HrsShut In 24 Flowing
- 1993	29.37	3803			Temp. @ 11,900' 1750
معسولانكنان	1000	700)	185	.326	ElevD.F. Gr. 307h .
10,400	2007	1,129			Lost Test Date 2-4-57
	100		329	.328	Press. Lost Tes. 1557
11,900		1,4.57			B. H. P. Change _59
7. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	12.	957	la la		Loss/Day 0.92
:12,02);		કેલ્પ્રા			Choice Size
an a water a dia a anno		· · · · · · · · · · · · · · · · · · ·			Oil Bbls/Day
					Water Bbls/Day
		**************************************	· · · · · · · · · · · · · · · · · · ·		Total Bbis/Day
					Orifice & Line
					Static & Differential
					Gas Sp. Gr.
					Cu. Ft./day
walanga ata wayi manana a ta sasa	-				GOR
-					GFR
		MODIC	TIVE INDEX-BELS.	/DAYS/LBS. DE	IOP
Lust Cumula Powluction	tive	Prese Prod	nt Cumulative action		Production Between Tests
factiument	Apprada	Num	ber 11256		Recovery Factor Bbls/pound loss
Ron By tan	ar Zschb	ergan Calil	oration No. L		Calculated By A, P. Parr
Coloniations	and Rem	orks:	e e e e e e e e e e e e e e e e e e e	,	

DOMPLETS KHBINESENNO SERVICE BOTTON HOLE PRESSURES DAE-OIL WATED TEMPERATURE BURYETS

WEST TEXAS OIL REPORTS

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RESHIBHS JAHO! PASHORN OSAS'EESP

TELEPHONE 2-1878 - F. D. BOX 988 5 PETELLEUM LIFE SHILLOING MIDLAND, TEYAS

LAMAR ZOUMPERRED RECIBTERCO PROPERSIONAL ENGINACA PIELO EMBINESE

ale4			County				· · · · · · · · · · · · · · · · · · ·
							Skote Hely New
Pay 12		THE RESIDENCE OF THE PERSONS	0 P. M.	• .	Statie		
-	010	Total Depth	12,070	Product	ng Formation		
, 2 # 1							and Dating +52
					• •	•	
2	Depth	12,001	Peri	L	iner	Pac	ker
		.			Games	grand by 🧖	4 - K
epuz Feet				ressure ×	Lbe-/D		
fr.ce		- 605					
	· · · · · · · · · · · · · · · · · · ·			2563	,334		
<u> </u>		3168				Top of Works	Jone
	2000			650	22	tire. Street in	30 Flowing
0		3828				Temp.	17.00 175.
	2000			691	385		G 3475
<u>900</u>		<u>14169</u>	F				
	125			41	.385	Press. Lost 1	
<u>082</u>		4510					
							14
							
							1
		·····					
							
							
÷			· · · · · · · · · · · · · · · · · · ·				
						GFR	
	ppth oot	7. 52 Depth set Depth 78.ce 7900 6 2000 900 125	7. 5 4 Depth 12,081 Spth * Pressure eet Depth Lbs. Sq. In. 78.ce 505 7900 2.000 3.168 2000 900 125	7. 524 Depth 12,081 Perf. Septh * Pressure eet Depth Lbs. Sq. In. 5 78.00 505 7900 6 2000 900 1469 125	Depth 12,061 Peri 1 Prossure * P	Depth 12,081 Perf Liner Prossure Appth Prossure Depth Liba Sq. In. Pressure 12,081 Pres	Casible Press. Casible Press. Tubing Press. 7900 2563 Top of Pittld Top of Water 2000 650 Press. 100 3818 Techp. @ 2000 651 985 Elsev.D.F. Last Test Dat 125 Press. Last Test Dat Casible Press. Casible Press. Top of Water 100 1816 Press. Last Test Dat Last Test Dat Casible Press. Casib

S MAIN STATE COMMISSION REPORTS ARCHARLO

COMPLETE ENBINEERING DERVICE NOTION HOLE PRESAURES DAN-OIL RATION TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

EVERETY C. EMITH REDISTERED PROPERSIONAL ENGINEER TELEPHONE 2-1872 - P. O. BOX 988

9 FETROLEUM CIFE ZUICOING
MIDSAND, TEXAS

LAMAR ESCHBERGER REGISTERED PROFESSIONAL ENGINEES PIELO EMBINEES

Con pany	10 Tal	Lowe					. 🐔		
		-		Lease	War	remetat	•		1.
Post North	Pladio.	a						Well	No
The second second	1.0		County .					Co. Mr	
Tost Dale Li-		Time	0230 A.M.	C				State 💆	
7 (15)	1 004			_ Status of	[[eW]]	Static			
top of Pay	F. 76	Total De	oth 11,995	, ,	_				
Top of Pay 1. Tubing 2º E	ta l	and the second		Proc	lucing	Formation			
		Depth	ינום לכי	<u></u>			ł		
Cooling Sire						- Packer	Pi	essure Dore	81 Sc
Castrig SET	De	pth	Perf		ن و				ua
		e de la companya de l		-	LID	¥	Po	cker	
Depth Foet	*	Pressure							
1.061	Depth	Lba. Sq.	• -	Pressure		Circultural	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		
Surface					·	Lbe/Pt.	a de la companya de	- 4	
<u> </u>	20.7	580					Casing Press		
7933	7933			2557			Tubing Pres	580	
	20%)	3137		2731		.324	Top of Fluid	Q.	
9700	2011			646		324	Top of Water	None.	
	2000	3783				-323	live. Shut in	36 Flor	Vitag
I., (1)	****			547		223	Temp. @	1,900 2	50
	127	44.30				.323			877
12:12,027				41		323	Loss Test Des		
		4.71					A A DARK LAND I S	E	
							B. H. P. Char	190 - 70	
The second secon							Loss/Day I. Choke Size	Ц	
* *************************************							Oil Bols/Day		
Access to the same of the same							Water Bbls/Do		
						1	otal Bbls/Day	У	
							Orifice & Line		
						9	tatic & Differe	nH_1	
							Ge Sp. Gr.	TUCU	
							u. FL/day		
						G	OR		
						G	FR		
; 	4.2	PROD	UCTIVE IND	EX.RRIG	The Name				
Lost Cumulative		. D	200-10		UNIS.	/LBB. DRO	?	3	
Production		Pr.	esent Cumu! ∞iuction	attve		Pro	duction		
Instrument to			- deciron			Ber	ween Tests		
Instrument Angra	3	Nu	mber 1126	<u> </u>		Rec	overy Factor		
Hun By Lang. Esc	· ho m	. !				Bbl	pound loss		
Files and the management of the Control of the Cont		C <u>}</u>	libration No.	.4					
Calculations and Re	nn					Cai	rulated By A.	P. Farr	
· · · · · · · · · · · · · · · · · · ·	marks;	i							

TEMPERATURE BURYEYS

BAR-UIL RATIOS

BAR-UIL RATIOS

WEST TEXAS OIL REPORTS

ASTURBE ENIRBENIENE GHA

EVERSTY L. BRITH REGISTRACO PROFESSIONAL ENGINEER TREEPHONE STIETS - P. D. BOX 988 8 PETROLEUM CIFE WILLDING MIDLAND, TEXAS

LAMAR ENGHOSAGER REGISTERED PROFESSIONAL ENSINEER PIELD SHRINKER

erika Y asi	rth Gladiola	C		1.04	State For Merice
leid	92.0 11.7.0	County _			Sign Jan
est Date	2/4/57 Tir	ne 2:00 P.M.	. Status of	Well Statio	
op of Pay	11.955 Tok	il Depth 12,020	Prod	acing Formation	
, , , »	n Print	?> 208			and and
ubing	Depth _	E POUCE BH	· C	Pocker	Pressure Dodge -6150
ersina 5.	an Denth 1	1,985 Part	a desta	Liner	Packer
	+7A		1		
Depth				Grafficat	
Foot		Sq. la.	Pressure	Lbs/IL	
					Casing Press.
Siriece	•	35			Tubing Press. 605
	7900		2570	. 125	Top of Pluid Surface
7900		<u>65</u>			Top of Water Hone
	2000		<u>655</u>	327	Hrs. Shut in 53 Lawring
3/30		50	656	_328	Elev. D.F. Gr. 3871
11,920	12000 1000	74	990	*383	Last Test Date Piret Test
<u> </u>	121		40	.328	Press. Last Test
: 12.021	46	16			B. H. P. Change
					Loss/Day
					Chobe Stare
· 				<u> </u>	Oil Bhis/Day
				 	Woter Mile/Day Total Mile/Day
			· · · · · · · · · · · · · · · · · · ·		Ordice & Line
	· · · · · · · · · · · · · · · · · · ·		<u> </u>		Static & Differential
					Gas Sp. Gr.
					Cu. Ft./day
					GCR
					GR
,					
		PRODUCTIVE	THORX-9 BL	s/days/lee i	
ast Cumulati	∀ ●	Present O	umulative	And the second s	Production
roduction		Production	<u> </u>		Between Tests
nstrument	Azerada	Number	11258	Man water that	Recovery Factor Bbls/pound loss
lun By	Le Rephberger	r Calibration	n Man	↓ 10 0 × 100 ×	Calculated By 4. Postarr

CONFICER ENDINERRIND BERYICE, BOTTON HOLE PRESURES BABIGL PATION TEMPERATURE BURYEYS

WEST TEXAS OIL REPORTS

AND ENGINEERING SENVICE

Calculations and Remarks:

TELEPHONE SITETS - P. C. BOX 599 B PETROLEUM LIVE EULIOINS MIDLAND, TXSAS

LAMAS ESCHSERSER REGISTERSO PROFESSIUNAL ENSINCES FIELD ENSINEES

Pop of Pay 1 1 1 1 1 1 1 1 1	295 Total Depth 12,20 Depth 11,958 Pressure pth Liba. Sq. 1 702 00 2268	Perf.	ducing Formation Pucker Liner Gradient	Pressur Pocker	
Depth Feet De 79 7700 20 11,700 1	Depth 12.0 Depth 11.958 Pressure pth Libs. Sq. 1 701 700 7268 600 7921 600 4575	12 B.H.C	Pucker Liner Gradient Libs/Ft	Pressur Packer Costing Press. Tubing Press. Top of Fauld Top of Water HrsShut in S. Temp. © 11.9 ElevD.F. Last Test Date	
Depth Foot De 7900 20 11,700 1	Depth 12.0 Depth 11.958 Pressure pth Libs. Sq. 1 701 700 7268 600 7921 600 4575	12 B.H.C	Pucker Liner Gradient Libs/Ft	Pressur Packer Costing Press. Tubing Press. Top of Fauld Top of Water HrsShut in S. Temp. © 11.9 ElevD.F. Last Test Date	
Depth Foot De 7900 20 11,700 1	Pressure pth Line, Sq. 1 723 720 7268 7921 79 4575	Peri	Crodient Lbs./Pt.	Casing Press. Tubing Press. Top of Field Top of Water HrsShirt in St. Temp. @ 11.9 ElevD.F. Last Test Date	
Depth Foot De 19 19 19 19 19 19 19 19 19 19 19 19 19	Pressure pth Lba. Sq. 1 703 703 703 703 703 703 703 70	lm. Processes 2565 653	Gradient Lbs./Pt.	Casing Press. Tubing Press. Top of Field Top of Water Hirs-Shirt in G. Temp. @ 11.9 ElevD.F. Last Test Date	
Depth Foot De 19 19 19 19 19 19 19 19 19 19 19 19 19	Pressure pth Lba. Sq. 1 703 703 703 703 703 703 703 70	lm. Processes 2565 653	Gradient Lbs./Pt.	Casing Press. Tubing Press. Top of Field Top of Water Hirs-Shirt in G. Temp. @ 11.9 ElevD.F. Last Test Date	
Foot De Suiffece 79 7900 20 20 11,900 1	723 20 3268 00 3921 00 4575	In. Pressur 2565 653 654	. 125 . 327 . 327	Casing Press. Tubing Press. Top of Pixel Top of Water Hirs-Shot in G. Temp. @ 11.9 ElevD.F. Last Test Date	
Foot De Suiffece 79 7900 20 20 11,900 1	723 20 3268 00 3921 00 4575	In. Pressur 2565 653 654	. 125 . 327 . 327	Casing Press. Tubing Press. Top of Pixel Top of Water Hirs-Shot in G. Temp. @ 11.9 ElevD.F. Last Test Date	
7900 7900 7900 20 11,700	723 00 2268 00 3921 00 4575	2565 653 654	.X1	Tubing Press. Top of Field Top of Water HrsShirt In S. Temp. @ 11.9 DievD.F. Last Test Date	
7900 7900 7900 20 11,700	00 00 7921 00 4575	हहा हुद्रा	.X1	Top of Fadd Top of Water Hire-Shirt In G. Temp. @ 11.9 DovD.F. Last Test Date	
7300 7900 20 11,300 1	3268 3921 00 4575	हहा हुद्रा	.X1	Top of Water Hire-Shoot In G. Temp. (2) 11.9 ElevD.F. Last Test Date	OF ME TO SERVE
7902 20 11,700	00 3921 00 4575	654	.527	HrsShot In G. Temp. @ 11.9 DievD.F. Lout Test Date	OF ME TO SERVE
7902 20 11,700	7921 00 4575	654	.527	Temp. @ 11.9 ElevD.F. Lost Test Date	Valla
11,700 11,700	00 4 57 5			Last Test Date	Valla
11,700	4575 19			Last Test Date	
1	19	39	127		
					4606
				B. H. P. Chappe	
			Gat	n men Doy	528
				Choke Slee	
				Oil Bols/Day	
	-	· · · · · · · · · · · · · · · · · · ·		Water Bbls/Day	
				Total Bbis/Day	
**************************************				Orifice & Line Static & Different	41
		····		Gas Sp. Gr.	
				Cu. Pt/day	
		•		GOR	
		· · · · · · · · · · · · · · · · · · ·			
	75	ODUCTIVE BEDEE		•	
cat Cumulative roduction		Present Cumulative Production	• · · · · · · · · · · · · · · · · · · ·	Production Between Tests	
nstrument .	Lagraca	Number 1126		Recovery Factor Bols/pound loss	্ৰ চিচাৰ কৰিছিল কৰিল। ইং জ্ঞা বিভিন্ন

GOMPIECE ENGINEERING SERVICE SOTION HOLE PRESSURES SAC-UIL RATION TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS

EVERETT _ EMITH REDIRTERED PROFESSIONAL ENGINEER

TELEPHONE SIGNAL P. D. NOX 569 R PERPOLEDY DIE BUILDING MIGLANE, TEXAS

LAMAR ENDMBELDER REGISTERED PROFESSIONAL ENGINEES FIELD ENGINEES

Company	53 3.27 3	7 • e.	Lease	Lartor-State	Well No. 1	1
Field No.1	to Glacia	Cou	nty Lea		State Not Nazia	
Tea Date	<u> 275 '37 '</u>	Time 10x00	A.V. Status of W	ell Statie		
		Total Depth 12				A CONTRACTOR
libing	2* 51% D	epth 12,016	B.H.C	Packer	Pressure Dotten -8150	Market State and Australia
		h 13.021 Per				The second state of
Depth Feet	* Depth	Pressure Lbe. Sq. In.	*	Gradient		and the state of t
				1434	Cosing Press.	Ť
3477 £ 12		5 75			Turbing Press. 675	
	75.15		2550	-32k	Top of Fued Surface	1
7500		3235			Top of Water Nome	H
	22.52		651	.326	Hrs. Shut In 51 Flowing	П
37.0		: કેસ્ટ			Temp. @ 11 500 17507	
	2000	2-	353	•327	ElevD.F. Gr. 3875	No.
12,500		4 ≤39			Lost Test Date 11/2/56	
	1.25		41	.327	Press. Last Test 166k	T
Ex. 3.035		4530			B. H. P. Change 81	
					Loss/Day 88	1
					Choke Size	
					Oil Bols/Day	1
					Water Bhis/Day	
					Total Bols/Day	ř ř
	-				Orifice & Line	
	3.				Static & Differential	
					Gas Sp. Gr.	1
بسيدات بالأنتيب				·	Cu Pt/day	1
					GOR	<u>li</u>
					GFR	11
			TIVE INDEX-BBLS.	/DAYS/LBS. DE	KOP	entitional entition
Last Cumulat Production	ive	Press Prodi	ent Cumulative action	Ĭ	Production Batween Tests	And the second
Instrument	Apareca	Num	ber 11256		Recovery Factor Bhis/pound loss	1
Rur. By	La beca	Calil	pration No. 2) V CO I (COLOR DE COLOR DE CO	Calculated By A. P. Far-	
Colentations	and Domerk					

BOMPLETE SHEINEFRING BERVIOE BOTTOM HOLE PRESSURES BAR-GIL RATIOS TEMPERATURE BURYEVS

WEST TEXAS OIL REPORTS ...

ELPRETT L. AMOTH HTG EIRHED MEGPTONIC ON SKUINKOP

Originations and Remarks:

RLEPHONE B-1878 P. D. SOX 983 G PETROLEUM CIPE SOLIDING MIDLAND, TEXAS

LAMAR EBUHBERBER REGISTERED PROPLEGIONAL CHRINEER

Сотрану	Alph at	<u> </u>	Lecse.	Lawton-State	Well No. 2
field Rozsa	<u>Oleanni</u>		County	es .	Stote Herrica
Test Dute	2/5/57	Time_II	12 Anda, Status of	Well Statie	
Top of Pay	1.10	_ Total Depti	12.070 Prod	ucing Formation	
		•	B.H.C.		
Carina 5	Dept	12,081	Parl	Linet	Name
Depth Feet	Depth	Pressure Lbs. Sq. H	. Prousure	Gradient Lbo/PL	
					Costing Press.
Surface		655			Tubing Press. 656
	7900		2541		lap of raid
7,500		32.97			TOP OF WORLD
* 7 . A. 4	Som	2814	647	32 <u>ia</u>	
\$900	****	3644	21.5	245	Herry, D.P. Co. 1988
11, 200	\$000	1.1.93	64.0	.325	Last Test Dofe 12/29
14470	125	4495	41	.125	Press. Lost Test 1652
88 10,325	187	1531	<u>4</u>		B. H. P. Change will be
The state of the s		:			Loss/Doy 1.2k
	······································				Choke Stre
					Oil Blie/Day
***************************************					Water Bloke/Day
					Total Bols/Day
					Orifice & Dine
		ì			Static & Differential
		i.			Gas Sp. Gr.
					Co. Pt./day
		ş 2 }	• • • • • • • • • • • • • • • • • • • •		GOR
					GPR
Last Cumulativ	· · ·	PB	DOUCTIVE BIDEX 82 Present Cumulative	LS./DAYS/LDS. D	Production
Production		#10 of	Production		Between Tests
Instrument	Amerada	Table programme	Number 11266		Recovery Factor Bbls/pound loss
Rur. By			Calibration No. 2		Calculated By & P. Farr

QUMPLETE ENRINGERING BERVICE BOTTOM MULE PRESSURCE BAS-OIL RATIOS TEMPPRATURE SURVEYS

WEST TEXAS OID REPORTS

EVERETT L. SMITH REGISTERED PROPERTIONAL ENGINEER TRURPHONE SHOTS ... P. D. BOX 863 8 PETROLEUM LIFE SUICHINB MIDLAND, TEXAS

LAMAR EBCHSERGER RESISTERED PROFESSIONAL ENSINEER PIELD ENGINEER

Company	341 ph 101	16	Lectre	Lavton-Stat	Well No
Field	moth Olasio	Cour	nty <u>Lea</u>		State New Mexico
Test Date	<u> 1977 - </u>	Time 12 x 30 3	Status of	Well Stat	
fop of Pay.	27,332	. Total Depth	Proc	ducing Fermation	
l'ubing	2" EUE De	pth 12,033	B.H.C	Packer	Pressure Datum -8150
Casing	Depti	. 12,128 Per	f	Liner	Pocker
Depth Feet	# Depth	Pressure Lbs. Sq. In.	*	Gradient Lbs./Pt.	
	- Deput				Casing Press.
r. ac	•	590			Tubing Press. 690
	1900		2561	.324	Top of Pluid Surface
733		3851			Top of Water None
	2701	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	551		HrsShut in 51 Flowing
¥7 <u>0</u> 0		1902			Temp. @ 11,8521 1750p
			<u> </u>	.327	ElevD.F. Gr. 3877
12.500	2				Last Test Date 12/21/56
	121		42	327	Press. Last Test 4630
13 . 2. 227		45/47	···		B. H. P. Change33
					Loss/Day 72
					Choice Size Oil Bbls/Day
					Water Bhis/Day
·	·····	·		· · · · · · · · · · · · · · · · · · ·	Total Bhis/Day
		<u> </u>	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	Ortice & Line
					Static & Differential
	مار آ <u>سیات بیاد دی است. انها</u> نت				Gas Sp. Gr.
					Ou. Ft./day
* * * * * * * * * * * * * * * * * * *					GOR
					GFR
ost Cumula	attıra		TIVE INDEX-BI	BLS./DAYS/LBS. I	Production
Production		Produ			Between Tests
Instrument	Amerada	Numl	ber 11266	· *** *** *** ****	Recovery Factor Bhls/pound loss
Run By	Le Escalue	rger Calib	ration No. 2		Calculated By A. P. Parr

MARIMITAL SCHMISSION REPORTS PREPARED LENGE APPRA SALE
SYNOMATIONS

GCMPLETE ENBINEERING SERVICE BOTTOM HOLE PREBSURES BAS-O.L. RATIOS TEMPERATURE GURVEVS

WEST TEXAS OIL REPORTS

EVERETT LOBMITH REGISTERED PROFERSIONS EMBINESE

TRLEPHONE 8-1878 P. O. BOX 968
PETROLEUM LIPE BUILDING
MIDLAND, TEXAS

LAMAR ESCHSERGER AEGISTESED PROFESSIONAL ENSINEER FISLO EMBINEES

Company L	MITLE	r.	Lease	Wallage '	Well No. 1
Field	orto Flatto	14	County	Lea	State New Mexico
Tast Date	2/4/17	_ Tip,s_ 1122	30 1.46 Status of	Well Static	
Top of Pay _	11,9.0	Total Depth	12,230 Produ	icing Formation .	
Tubing	Dej	oth 12.1	EH.C.	Paaker	Pressure Datum -8150
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1 2,22		4557			B. H. P. Change -94
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200					GIA
		PRO	DUCTIVE INDEX-BE	B./DAYB/LBS. DI	BOP
Last Cumula Production	rtive		resent Cumulative		Production Between Tests
Instrument	Areana.	ŀ	Vumber 11255		Recovery Factor Bbls/pound loss
Rur, By	i. Enchiet La Enchiet	ger (Salibration No. ?		Calculated By &, P. Farr
Calculations	and Remarks	s:			

RELIGITAD LOSSINGERION SENDENS PREPARES

DEMPLETE ENSINEERING BERVIDE SITTION MOLE PREEBURED SAS-DIL BATIDS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS AND ENGINEERING RESPICE TELEPHONE 2-1879 - P. D. 80X 988 TELEPHONE 2-1879 - P. D. 80X 988

EVERETT L. SHITH REPIRTERED PROPERTIONAL CHRINECE

LAMAR ESCHBERGES ANDISTERED PROFESSIONAL ENSINEER FIGLD ENSINEER

Com	pony	1	elich love		Lease	E ILL ACO	Well No. 1
Field	¥c.	• 2)	Gladiola	County	Lea	and the control of	State New Maxico
Test	Date?	Z:4	/57 Tu	ne 12:00 Nova	_Status of Wel	Statio	
- 1				al Depth 12,116			
Tabli	ya	2"	ETE Depth .	12,005 BH	ıc	Pocker	Pressure Date: -8150
Casi	ng 51	•	Depth	2,115 Peri	L	ner	Packer.
- (-)	Depth		r Pa	. Sq. In.	e de la companya de	Gradient Lbs./Ft.	
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	77.70		2-770	3872	64.8	1324	Temp. @ 11.850° 1797 ElevD.F.
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	40.2.32		125	14.7	40	.324	Press. Lost Test 1618
, 1.7	12.024			<u> इंदर्</u> ड	40		B. H. P. Change - 59
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	<u> </u>						Choke Size
Ť			 	**************************************			Oil Bble/Day
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1.100	uction.		<u>:</u>		and a produce officer store of the state of		Between Tests Recovery Factor
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Calc	ulations	an	d Remarks:			The second secon	

MANI⁶NOFO ETH**MIRRION PEPORTH PREPAREO** Letur Furrairale Environ

REMEMBER STORMERHING MERVICE BOTTOM HOLE PRESSURES SAS-OIL BATTOS TEMPERATURE SURVEYS

WEST TEXAS OIL REPORTS AND EMBINERAINS SERVICE TELEPHONE SISSES P. O. SOX SSS PETROLEUM VIVE SUILSINS SERVICES MIDLAND, TEXAS SEGISTERS

EVERETT L. SMITH REGISTERED PROPESS JAAL ENDINGER

Calculations and Remarks:

LAMAIT ENCHRENDER
REGISTERED PROFESSIONAL ENSINGER
FIELD ENSINEER

Сомрану	iain izi	<u> </u>		_ Lease	Wallace #	31.	Well No.	<u> </u>
Press Nath	Classes.	c	ounty		<u> </u>		State	Mexico
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بسيستريد فالقائف والإساسات	militar and the second	e e e e più la contra de la cont				Loss/Day	······································	
The state of the second						Choke Stre		
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Run By L. Est	معنور دو و خور	Cal	libration	No. 2		Calculated By	A. P. P	1 pip

PARTICIO COMMISSION REPORTE PREPARED L'ERRE APPRASSALO ENACUATIONS

GOMPLETE ENGINEERING GERVINE BOTTOM MOLE PREGGUESE BAB-OIL RATIOS TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS

EVERETT L. BMITH REDISTERED PROPERSIONAL ENGINEER TELEPHONE S-1878 P. S. SOX 958 8 PETROLEUM LIFE SLILDING MIDLAND; TEXAS

LAMAS ESCHBERGER RESISTERED PROFESSIONAL ENSINEER FISLE ENGINEER

Compon	y _ itla r		Watt 1	MIA SHEET		
			Lease	Warren-B	La4 _	
rield	Porth alacti	ola. C	ounty			Well No1
Test Date	2/5/57	Time Secon		ies .		into Home Man
Top of Par	y 11.956	Total D	Asks Status of Wel	1	tie	
Tubing	20 CTIP	- rotat Depth _	Status of Wel	Formation		
		031// AAA4754	BHC Lin		4.	re Dokum •-81
	vehu	P	efLin	.e:		
Depth Feet	Depth	Pressure Lbs. Sq. In.		Gradient	Pocker.	
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	7000	656			Cosing Press.	
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25.39	2330	3854	61.11	1	op of Wor	erface
11,200	3.7.0		646	1		7
	127	4500	940	■323 E	emp. @ 11,900	G. Marie
as 12,02?		4541	- W	-323 P	cast Test Date 11	141
				B.	H. P. Cheeren	
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and the same and a second of the same				Cu	PL/day	
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ast Cumulative		PRODUCTIVI	DIDEX-BBLS./DAYS/	LIS. DROP		
eduction		Present C Production	(1771) 1 cold	Produ	ction	
	eragu	Number	11266	Recov	en Tests	
lculations and	880 Marger	Callbrattor	No. 2		ound loss *	-
und	nemarks:		•		44 /	a.ry

COMPLETE EMBINEERING DERVICE SAD-DIL BATION TEMPERATURE BUSTEVES

TEMPERATURE SHEINEERING DERVICES

WEST TEXAS OIL REPORTS

EVERETT L. SMITH PCUISTERED PROPROGRONAL ENDINGER

TELEPHONE 2-1972 - P. O. BOX 988 # PETROLEUM LIPE BUILDING MIDLAND, TEXÁS

LAMAR ESCHBERGER RESIRTERS PROFESSIONAL ENSINEER FIELD EMPINEER

INDIVIDUAL WELL DATA SHEET

Company	Ralph	Love	n e en electronico de la companione de l	Lease	Astec-Ada	Well No. 1
ield	North Cla	ci)la	County _		Les	Stone New Maxies
last Date	2/4/57	Time_	4:00 P.M.	Status of Well	Statis	
op of Pay	12,0%	Total D	opth 12,106	Producing	Formation	
						Pressure Dottom - 1850
		The state of the s		000-032		Poder
Depth	**************************************	Proces	er e e ferrere i jerge i . Des	لفدستور دار استان براوید آوری 🖈 انتای	Gradiest	
Foot	Dept	h Liba. Sc	(· la.	Prensure	Lbe/N	Costos Press.
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5 6))	3911				Temp. @ 11.900 1757
	5/17			554	,327	ElevD.F. Gr. 3867
11, 7)0	4555		, i		Last Test Date 11/2/56
	11	1			•327	Press. Last Test 1676
7812,7	17	4603				B. H. P. Change and
· • • • • • • • • • • • • • • • • •		-				Loss/Day .78
·						Choke Size
						Oil Male/Day
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			- 			Total Bible/Day
						Orifice & Line
		· · · · · · · · · · · · · · · · · · ·				Static & Differential
						Gas Sp. Gr.
			PRODUCTIVE	INDEX-BBLS./I	DAYS/LBS. D	Cu. Pt./dary GOR GPR DROP
.ast Cumi reduction			Present Co Production			Production Between Tests
ı.smum .e n	t A	ie trida	Number	17256		Recovery Factor Bbls/pound loss
tun By	L. Isch	Arger	Calibration	n No. 2	-	Calculated By A. P. Farr

Calculations and Remarks:

COMPLETE CHRIMERSING BERVIOR SCITOM HOLE PRESSURES SAR-OIL MATION TEMPERATURE BURVEYS

WEST TEXAS OIL REPORTS AND ENDINEERING SCRVICE

HES NIERED PROFESSIONAL ENGINEER

Calculations and Remarks:

AND ENGINEERING CARLOS TELEPHONE B-1872 - M. D. BOX TES

PETHOLESM LIVE #J-LOING LAMAR ENGHBERDER

MIGLAND, TEXAS AFGISTERED PROPERSIONAL ENGINEER

FIELD ENGINEER

Ten Date		Con	**************************************	ૈં- ઝA	State New Mex
	12-21-55				•
Top of Par		Time 3:00 F	Starus of V	fell Statio	and a comment of the second and the
	y	Total Depth	Produc	ing Fermation .	
Tubing .	2* 878	Depth	B.H.C	Packer	Pressure Datum -81
Casing	De De	epth	d	Line	Packer
Depth Feet		Pressure Lbs. Sq. in.	Pressure	Gradient Lbs./Ft.	
					Casing Press, Packer
Sorfi		695			Tubing Press. 695
. با دخست کی	8003		2698	.326	Top of Fluid Sarrage
Six		3303		· · · · · · · · · · · · · · · · · · ·	Top of Water Name
	2005		654	.327	Hrs. Shut in 53 Flowing
11,0		3957			Temp. @ 11.850' 175
	<u> 2000</u>		326	326	Elev. D.P. Gr. 387
<u>کل کا ا</u>		1283			Lost Test Dote First Test Press. Lost Test
11,5	859		278	327	B. H. P. Change
	7.'	<u>11561</u>			Loss/Day
12.7%	<u> </u>		57	.327	Choke Size
* <u>&&</u>	<u>at</u>	háir			Oil Bbis/Doy
		·			Water Bble/Day
				· · · · · · · · · · · · · · · · · · ·	Total Bbls/Day
والمراجع المستعلق المستعلق					Ortlice & Line
					Static & Differential
					Gas Sp. Gr.
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			and the same recommendation with the transfer of the same of the s		GOR
					GFR

BOMPLETE ENBINECAINS BERYISE BOSTOM HOLE PRESSIAZE BAS-OIL SATIOS TEMPESATURE BURYTYZ

WEST TEXAS OIL REPORTS

EVERETT E EMITH TEG ETERED PROFESSIONE AL CHOINEAR

Calculations and Remarks:

TELEPHONE S-1878 P. O. BOX 988 8 PETROLEUM CIPE SCILOINS MIDLAND, TEXAS

LAMAN THEMBERGES REGISTERSO PROPERLIMAL ENGINEER PIELD PHOINEER

conpany			Leaso	TWE POST OF	· VT	_ Well No.	
Field	rts Hellela	County .	-	Let		State Herr	Mexico
Test Date	1-21-96	rime 3:30 f. M.	Status of W	all Ste	tie	·	
						*-	•
Top of Pay	Т	otal Depth	Froducti	ng Formation			
Tubin's 3	EUI Depth	B.I	i.C	Packer	Pres	ture Datum	-8150
Cosing.	Depth_	Perf		Iner	Pack	or	
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ZBI-1.21/B	8000		2620	-327	Top of Fluid	Surface	
0006		3310			Top of Water		. 1
	2000		655	.327	Hrs Shut in 5	Plow	DØ .
19,000		1965			Temp. @ 11		137
	1020		328	,228	ElevD.F.	Gr.	3877
11,000		1273			Last Test Date	Pires 1	
	650		279	328	Press. Last Tes		
11.850	-	1572			B. H. P. Chan	90	
	177		58	.328	Loss/Day		
: 12,227		4630			Choke Stre		
				·	Oil Bbls/Day		
				·	Water Bbls/Da		
	·				Total Bbls/Day Ortfice & Line		
		·	<u></u>		Static & Differe		
					Gas Sp. Gr.		
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					GOR		
	:				GFR	,	
			·			*	
			indexable.	/days/lig. D	1		
Lost Cumulat Production	TV0	Present C Production	žumulative n		Production Between Tests	:	
Instrument	Azorada	Number	1120	66	Recovery Factor Bbls/pound loss		
Run By	A. P. Farr	Calibratic	on No	12	Calculated By	A. P.	.

OGMPLETE PHYMNERRING BERVIDE BOTTOM HOLE PRESSURES BAG-UII, HATIGO TEMPERATURE RUNYSYS

WEST TEXAS OIL REPORTS

AND ENGINEERING SERVICE

EVERETT L. SMITH

TELEPHONE SHETS .- P. C. BOX PER B PETROLEUM CIPE SUITOINS MIDLAND, TEXAS

LAMAN ENCHMENDEN PERINTERSO PROFESSIONAL SHUINEER FIELO ENBINEER

Company	alm he	<u> </u>	1	ease	noensh		_ Well No	
Held Herth	Glassola		. County	Les	· · · · · · · · · · · · · · · · · · ·		State Nam	Meriso
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op of Pay	1,998	Total Daniel	12,016	Dandurdner	Formation		•	en es l
							\$ 4	9.50
uping 2ª	Dep	th 122	B.H.C		Packer	Pret	sure Datum	,-0120
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	······································	Personal Transportation of				Cosing Press.		
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794.61		325?				Top of Water	None	
	C 000			35 1	.325	Hra. Shut In	54 Plot	100
39.00		35 LB		r _e		Temp.	2,900	1147
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30,900		7577				Last Test Date		
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11,900		4570				B. H. P. Char	200	
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			·	****		GFR		
		PBK	ODUCTIVE DED	EX-BBLS./D.	AYS/LML DI	BOF		
ast Cumulative	•		Present Cumul Production	lative		Production Between Tests		
nstrument	Averada		Number	1126	6	Recovery Facto Bbla/pound los	e s	
Run By	1. P. F	irr	Calibration No	o. 1		Calculated By	A. P. P	arr.
Calculations a nd	d Remarks	•					•	

CORE LABORATORIES, INC. Petroleum Reservoir Engineering DALLAS, TEXAS

September 19, 1956

P. Ö. BOX 36 P. Ö. BOX 36 MIDLAND, TEXAB

Ralph Lowe Drilling Company Box 832 Midland, Texas

37% 3 - # 31 23

Attention: Mr. C. L. Chase

Subject: Core Analysis

Lawton State No. 2 Well Lowe Devonian Field Lea County, New Mexico Location: Sec. 32-T11S-R38E

Gentlemen:

Diamond coring equipment and water base mud were used to core the interval, 11,967 to 12,084 feet in the Lawton State No. 2. Samples were selected and quick-frozen by an engineer of Core Laboratories, Inc. at the direction of a representative of Ralph Lowe Drilling Company. These samples were analyzed by whole-core analysis procedures in the Lovington laboratory, and the results of the analysis are presented in this report.

Devonian formation analyzed between 12,009 and 12,070 feet is interpreted to be oil productive. In this interval, the 60.5 feet of permeable, productive formation analyzed has an average permeability of 76 millidarcys and a productive capacity of 4598 millidarcy-feet. The average porosity of the zone is 4.6 per cent.

Estimates of recoverable oil have been computed for the Devonian formation between 12,009 and 12,070 feet using the observed core analysis data in conjunction with estimated reservoir fluid characteristics considered applicable. These recovery estimates are presented on the core summary and calculated recoverable oil page of the report, and are subject to the conditions set forth in the body of and in the footnotes to the summary page.

We sincerely appreciate this opportunity to be of service to you.

Very truly yours,

Core Laboratories, Inc.

R. S. Bynum, Jr.,

District Manager

RSB:PE:sw 7 cc. - Addressee

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS. TEXAS

Page 1 of 1 File WP-3-591 S Well Lawton State No. 2

CORE SUMMARY AND CALCULATED RECOVERABLE DIL

FORMATION NAME AND DE	PTH INTERV	AL: Dev	onian 12,009.0-12,070.0		
FEET OF CORE RECOVERED FRO ABOVE INTERVAL	эм .	61.0	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE		55.8
FEET OF CORE NCLUDED IN AVERAGES		60.5	AVERAGE CONNATE WATER BATURATION: PER CENT OF PORE SPACE	(c)	55.8
VERAGE PERMEABILITY: MILLIDARCYS	Max.: 90°:	76 21	DIL GRAVITY: *API	(e)	46
RODUCTIVE CAPACITY:	Max.: 90°:	4598 1271	DRIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	(e)	300
		4.6	DRIGINAL FORMATION VOLUME FACTOR: BARRELB BATURATED DIL PER BARREL STOCK-TANK DIL	(e)	1.21
AVERAGE RESIDUAL DIL SATURATION: 10.7			CALCULATED ORIBINAL STOCK-TANK OIL IN PLACES BARRELS PER ACRE-FOOT		130

Calculated maximum solution gas drive recovery is 45 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 92 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

FORMATION NAME AND DEPTH INTERVAL:		
FEET OF CORE RECOVERED FROM ABOVE INTERVAL	AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES	AVERAGE CONNATE WATER BATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYS	DIL GRAVITY: *API	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	ORIGINAL SOLUTION GAS-DIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT	ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL DIL SATURATION: PER CENT OF PORE SPACE	CALCULATED ORIGINAL STOCK-TANK BIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (Please refer to footnotes for further discussion of recovery estimates.)

These analyses, opinions or interpretations are based on observations and materials supplied by the client to whom, and for whose exclusive and confidential use, this report is made. The interpretations or opinions expressed represent the best judgment of Core Laboratories, Inc., (all errors and omissions excepted); but Core Laboratories, Inc., and its officers and employees assume no responsibility and make no warranty or representation, as to the productivity, proper operation, or prefitableness of any oil, gas or other mineral well or sand in expresents with which such report is used or relied upon.

⁽c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

Box 832

Midland, Dexas

March 17, 1958

Mr. A. L. Porter, Jr.
Secretary-Director
New Mexico Oil Conservation Commission
P. O. Box 871
Santa Fe, New Mexico

Re: Case #1394

Dear Mr. Porter:

Enclosed is a copy of the detailed core analysis from Ralph Lowe's Lawton-State #2 and photocopies of the individual bottom-hole pressure measurements made during the initial and each of six subsequent surveys in the Ralph Lowe operated wells at Gladiola.

Mr. Buell of Pan American requested that the core data be made a part of your file for this case, and Mr. Errebo of Sunray requested that the individual pressure measurements be included.

Yours very truly,

Darvin L. Landua

HLL: rl

encls - 2

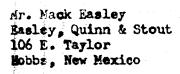
EMERGENCY ORDER E-8 WAS M AILED TO THE FOLLOWING 2/28/58

Cities Service, Hobbs
Gulf, Ft. Worth & Hobbs
Jake L. Hamon, 102 Western Bldg., Midland, Texas
Hancock Oil Co., 509 W. Texas Ave., Midland
Ralph Lowe, Midland
Jack Markham, Great Plains Life Bldg., Lubbock
McAlester Fuel Co., Magnolia, Ark.
Ohio, Hobbs
Pan American, Roswell & Hobbs
Pure Oil Co., Box 2107, Ft. Worth
Sinclair, Midland
Sunray, Hobbs
Texas Crude Cil Co., 1201 V & J Tower Bldg., Midland

Transporters: Service Pipeline, Box 337, Midland Magnolia, Box 633, Midland & Box 511, Brownfield

OIL CONSERVATION COMMISSION P. O. BOX 871 SANTA FE, NEW MEXICO

March 31, 1958



Dear Sir:

On behalf of your client, Ralph Lowe, we enclose two copies of Order R-1139-A issued March 28, 1958, by the Oil Conservation Commission in Case 1394, which was heard on March 13th and March 26th at Santa Fe.

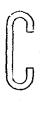
Very truly yours,

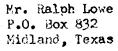
A. L. Porter, Jr. Secretary - Director

bp Encls.

OIL CONSERVATION COMMISSION F. G. BOX 871 SANTA FE, NEW MEXICO

March 14, 1958





Dear Mr. Lowe:

We enclose a copy of Order R-1139, an interim order, issued March 14, 1958, by the Oil Conservation Commission in Case 1394, which was heard on Merch 13th.

Very truly yours,

A. L. Porter, Jr. Secretary - Director

bp Encl.



CLASS OF SERVICE
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unless its deferted character is indicated by the

proper symbol

WESTERN UNION

TELEGRAM

(AW)

SYMBOLS

DL=Day Letter

NL=Night Litter

LT=International
Letter Tilecram

The filing time shown in the date line on domestic relegrams is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

LA062 NSA160

1.58 MR 24 AN 10 51

NS EDAOSE PD=MAGNOLIA ARK 24 1939AMC=
NEW MEXICO OIL CONSERVATION COMMISSION=
SANTA FE NMEX=

MCALESTER FUEL CO IS AGREEABLE TO CONTINUING THE 190 BOPD ALLOWABLE IN THE GLADIOLA DEVONIAN POOL FOR AN INDEFINITE PERIOD OR UNTIL ADEQUATE JUSTIFICATION FOR CHANGE IS EVIDENT=

MCALESTER FUEL CO VERNON TURNER

190 BOPD=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE

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WESTERN UNION

TELEGRAM
W. P. MARSHALL, PRESIDENT

(25).

SYMBOLS

DL = Day Latter

NL = Night Letter

LT = International
Letter Telegram

The filing time shown in the date line on domestic telegraps is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME

LAG85 DA237

D FWB2G8 PD=FORT WORTH TEX 12 1213PMC=

MABRY HALL STATE CAPITOL SANTA FE NMEX:

=IN REFERENCE TO THE HEARING MARCH 13, 1958, TO CONSIDER A REDUCTION OF ALLOWABLES IN THE GLADIOLA POOL, LEA COUNTY, THE PURE OIL COMPANY IS OPERATOR OF ONE PRODUCING WELL IN THIS FIELD. THIS WELL IS PRODUCING NO WATER AND WE HAVE NO EVIDENCE WHICH INDICATES THE NECESSITY FOR A REDUCTION IN ALLOWABLES=

HARRY C WELLS ASST DIV PROD ENGR THE PURE OIL CO ==

:13 1958=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

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WESTERN UNIO

TELEGRAM

1958 FEB 28



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LA062

L DVACES PD=FAX DENVER COLO 28 102 1AMM=

A L PORTER JR=

OIL CONSERVATION COMM SANTAFE NMEX=

WE SUPPORT RALPH LOWE IN HIS APPLICATION FOR EMERGENCY ORDER REDUCING OIL ALLOWABLES IN THE GLADIOLA POOL= COLORADO OIL & GAS CORP BY J P MORONEY VICE PRESIDENT=

Case Vol394

THE COMPANY WILL APPRECIATE SUCCESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

CLASS OF SERVICE

This is a fast message unless its deferred char orer is indicated by the

WESTERN UNION

TELEGRAM (47).

DL=Day Letter NL=Night Letter LT=International

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EA155 DB2件13:33

1958 MAR 12

D LUA297 PD=LUBBOCK TEX 12 243PMC=

A L PORTER, SECY AND DIR=

OIL CONSERVATION COMM SANTA FE NMEX=

I AM IN AGREEMENT WITH RALPH LOWE'S REQUEST NUMBER 1394 IN REDUCING ALLOWABLE GLADIOLA FIELD=

JACK MARKHAN=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

JAKE L. HAMON VAUGHN BUILDING DALLAS, TEXAS

March 21, 1958

Mr. Ralph Lowe Midland Tower Midland, Texas

Re: Reduction of Allowables in The Gladiola (Devonian) Pool,

Lea County, New Mexico

Dear Sir:

I am the owner of only one well, which is in the extreme South end of the Gladiola Field. We completed this well on June 21, 1957, and started producing it at the allowable rate. It began showing water. We cut it back promptly to approximately 125 barrels a day and have been producing at that rate ever since.

Our production the first fifteen days of March on this well averaged 123 barrels a day on a 7/64" choke with 500 pounds pressure at the well head. At this rate, it ceased making water and is still not showing any water.

Our engineers advise that they are in accord with your petition requesting that the allowable rate in this field be reduced, and you are accordingly authorized to present this letter in evidence at the hearing.

Yours very truly,

Jake L. Hamon:dw

COLORADO OIL AND GAS CORPORATION

DENVER CLUB BUILDING
DENVER, COLORADO

March 21, 1958

Ralph Lowe P. O. Box 832 Midland, Texas

Re: Allowable Production
Gladiola (Devonian) Field
Lea County, New Mexico

Gentlemen

The Colorado Oil and Gas Corporation owns varying working interests in five leases producing from the Devonian formation in the Gladiola Field in Lea County, New Mexico.

After engineering studies Colorado Oil and Gas Corporation is agreeable to and strongly recommends that in the interest of conservation, allowable rates of production in the Gladiola Field be reduced for a period of six months to one year to allow time to observe field performance of wells in this field at reduced allowable rates. We recommend that allowable rates be reduced to a maximum of 190 barrels per well per day.

You may present this letter as a statement of Jur position at the forthcoming hearing on this matter to be held next Wednesday, March 26.

Very truly yours,

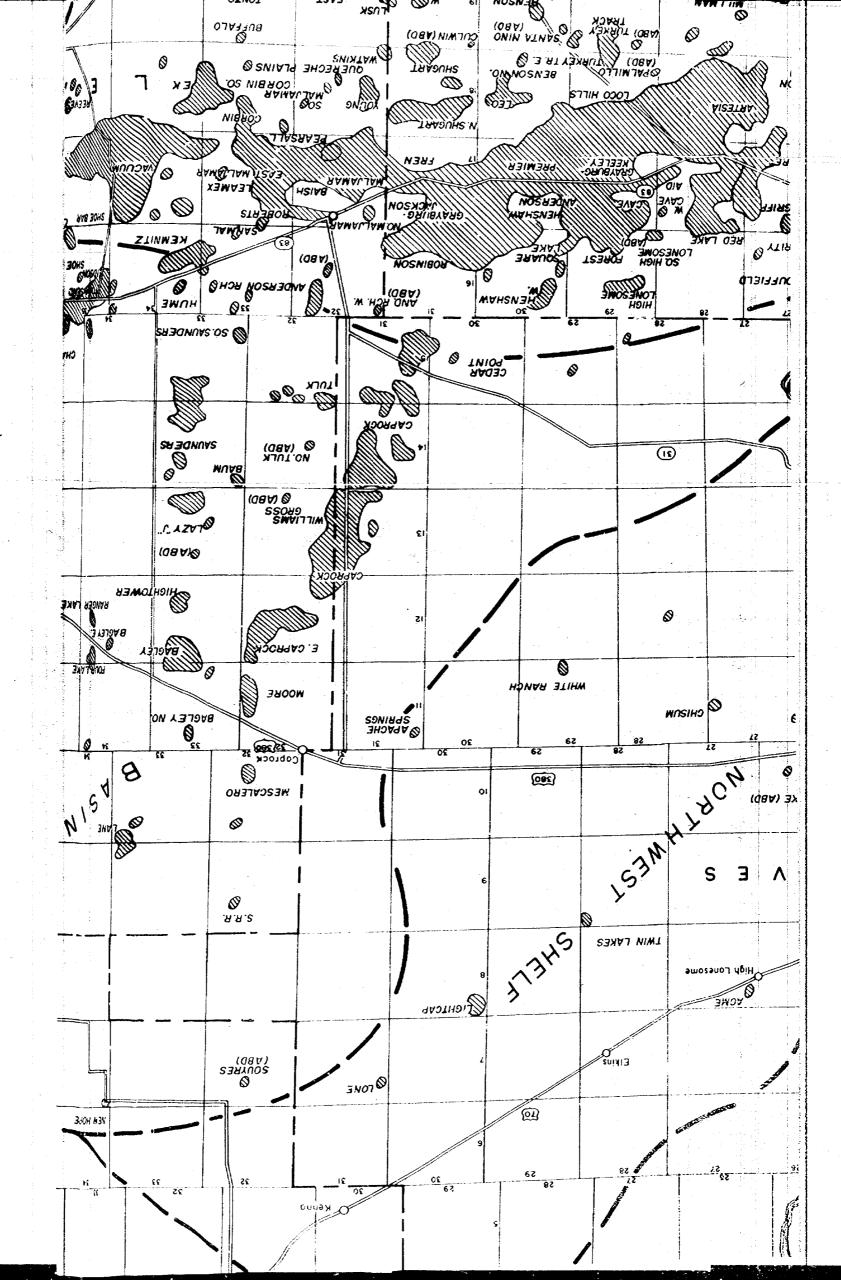
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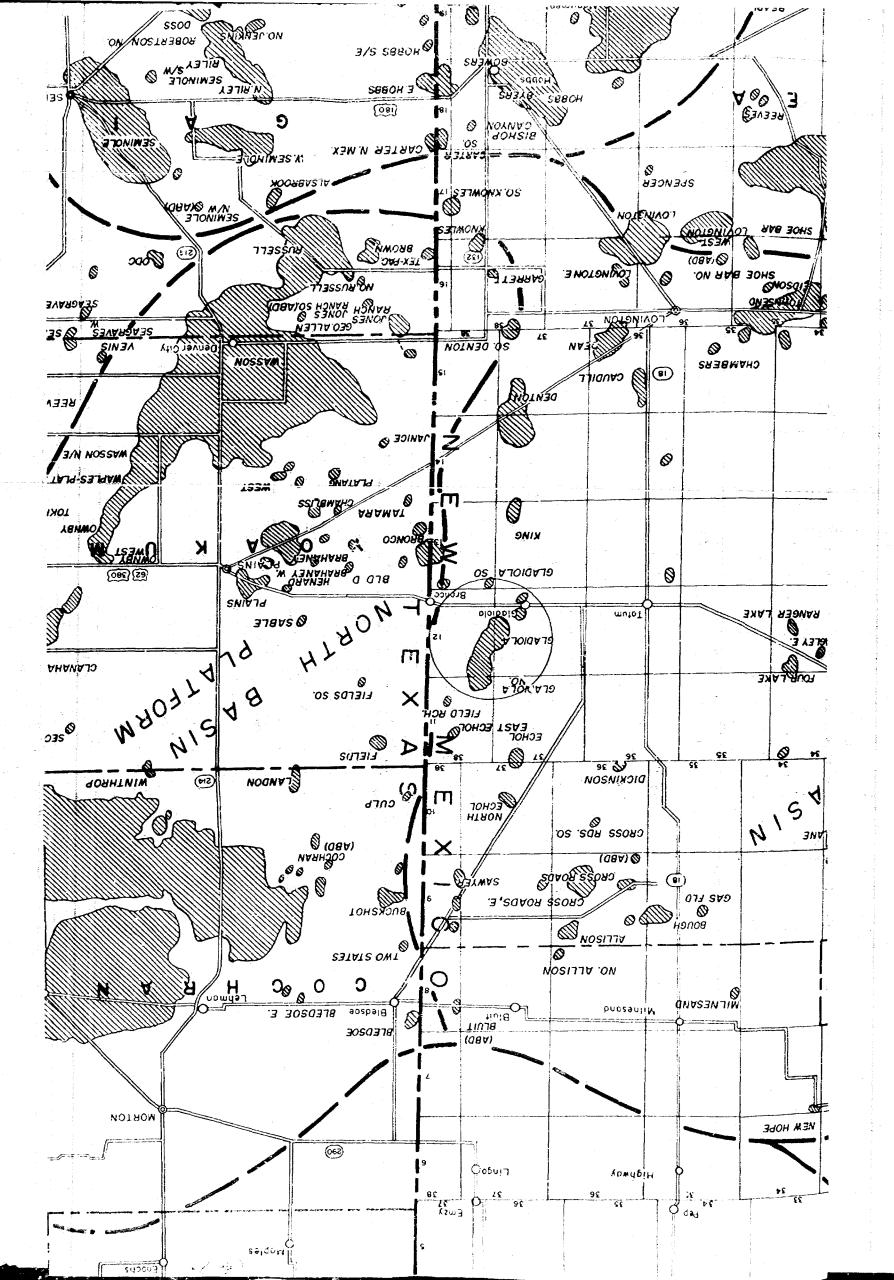
COLORADO OIL AND GAS CORPORATION

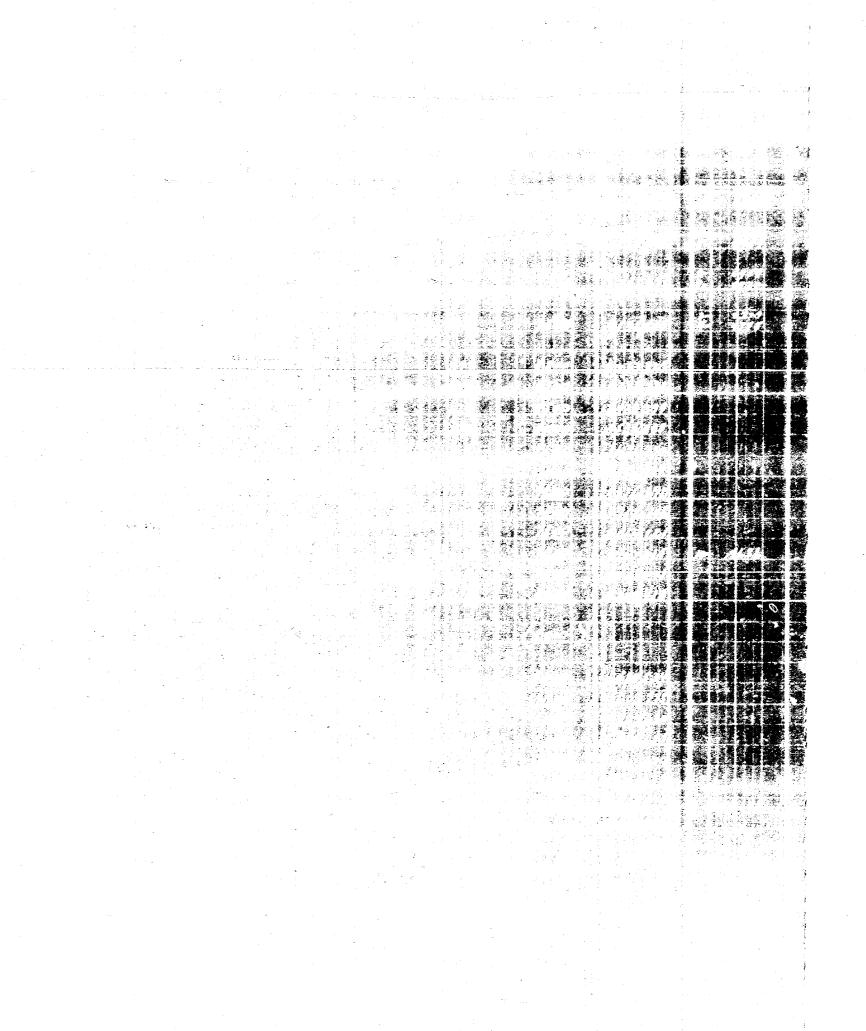
F. W. Heiser

Asst. Manager of Drilling and Production

FWH: vbs







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BEFORE THE CIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER CONCERNING THE REDUCTION OF ALLOWABLES IN THE GLADIOLA (DEVONIAN) POOL, LEA COUNTY, NEW MEXICO.

EMERGENCY ORDER NO. E-8

NOW, on this 28th day of February, 1958, the New Mexico Oil Conservation Commission, a quorum being present, having considered the application of Ralph Lowe et al., for an emergency order and being fully advised in the premises,

FINDS:

- 1. That the applicant, Ralph Lowe, is the operator of twenty-four of the approximately ninety wells completed in and producing from the Gladiola (Devonian) Pool in Los County, New Mexico.
- 2. That the producing mechanism in the said Gladiola Pool is an active water drive.
- 3. That the number of wells producing water in said Gladiola (Devonian) Pool has been increasing over the period of the last six months and that on February 21, 1958, the Ralph Lowe, et al. Lawton-State No. 2 Well, located in the NW/4 SW/4 of Section 32, Township 11 South, Range 38 East, NMPM, commenced producing 100% water, whereas prior to that date said well was capable of producing top allowable since completion on September 19, 1956.
- 4. That there is a possibility that the water production from certain of the wells in the said Gladiola (Devonian) Pool is premature and that said premature water production has been caused by the production of said wells at excessive rates.
- 5. That production of the wells in the Gladiola (Devonias) Pool at the rate authorized for the month of March 1958, may result in underground waste.
- 6. That during the period of purchaser prorationing in June, July, August, September, and October, 1957, the production from the wells in the northernmost portion of the pool (formerly North Gladiola-Devonian Pool) was reduced to an approximate average daily production of 190 barrels of oil and that during said period the pressure performance of certain of said wells indicated that production at a lower rate would result in the additional ultimate recovery of oil from said wells.
- 7. That the production from all wells in the Gladiola (Devonian) Pool should be curtailed to an amount not to exceed 190 barrels of oil per day per well.

- 8. That an emergency exists which requires the promulgation of an order without notice and hearing to eliminate the possibility of waste occurring in the Gladiola (Devonian) Pool in Lea County, New Mexico.
- 9. That the Commission should call a hearing at the earliest possible date to consider the advisability of a permanent reduction of the allowables in the said Gladiola (Devonian) Pool.

IT IS THEREFORE ORDERED:

- (1) That notwithstanding the allowables assigned to the wells in the Gladiola (Devonian) Pool in Lea County, New Mexico by the Oil Proration Schedule for the month of March, 1958, no well in said Gladiola (Devonian) Pool shall produce an amount in excess of 190 barrels of oil per day during the effective period of this order.
- (2) That the back allowable authorized for production in the Gladiola (Devonian) Pool by the Oil Proration Schedule for the month of March, 1958, be and the same is hereby suspended during the effective period of this order.
- (3) That this order shall become effective at 7 o'clock a.m. Mountain Standard Time on March 1, 1958, and shall expire at 7 o'clock a.m. Mountain Standard Time on March 16, 1958.
- (4) That a case be called for the regular hearing on March 13, 1958, to consider the advisability of a permanent reduction of the allowables in the Gladiola (Devonian) Pool, Lea County, New Mexico.

DONE at Santa Fe, New Mexico, on the day and year herein-above designated.

STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

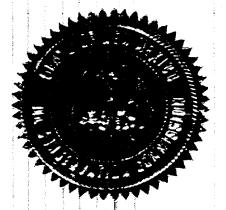
EDWIN L. MECHEM, Chairman

MURRAY E. MORGAN, Member

000-11

Memors

A. L. PORTER, Jr., Member & Secretary



BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE NO. 1394 Order No. R-1139-A

APPLICATION OF RALPH LOWE, ET AL., FOR AN ORDER REDUCING ALLOWABLES IN THE GLADIOLA (DEVONIAN) POOL, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 13, 1958, and again on March 26, 1958, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this $28^{\frac{1}{2}}$ day of March, 1958, the Commission, a quorum being present, having considered the application, the evidence adduced, and the testimony presented at said hearings and being fully advised in the premises,

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That the applicant, Ralph Lowe, appeared at the hearing March 13, 1958, and presented evidence to the effect that premature water encroachment and waste would occur in the Gladiola (Devonian) Pool if certain of the wells in said pool were permitted to produce at normal allowable rates; further that the Commission continued Case 1394 to March 26, 1958, and entered Interim Order No. R-1139, effective at 7 o'clock a.m., Mountain Standard Time, March 16, 1958, reducing the allowables in the Gladiola (Devonian) Pool until a permanent order of the Commission could be entered.
- (3) That protestant, Pan American Petroleum Corporation, appeared at the hearing on March 26, 1958, and presented evidence to the effect that no premature water encroachment or waste is occurring, or is likely to occur in the future in the Gladiola (Devonian) Pool if wells in said pool are permitted to produce at normal unit allowable rates.
- (4) That in the light of the evidence thus far adduced there does not appear to be a reasonable probability that premature water encroachment or waste will occur in the Gladiola (Devonian) Pool if the wells in said pool are permitted to produce at normal unit allowable rates.

- American Petroleum Corporation, made a motion to dismiss Case No.
- for dismissal. That applicant, Malph Lowe, objected to the motion
- and that Case to. 1394 should be dismissed.

IT IS THEREFORE OFDERED:

- hereby rescinded. That Interim Order No. R-1139 be and the same is
- the same is hereby directed to issue supplements to the April, 1958, Propation Schedule, authorizing the production during April, 1958, of that back allowable for the Gladiola (Devonian) Pool which was sumpended by Emergency Order No. E-8 and Interim Order No. R-1139.
 - 3. That Case No. 1394 be and the same is hereby dismissed.
- 4. That this order shall become effective at 7 o'clock a.m., Mountain Standard Time, April 1, 1958.

above designated. New Mexico, on the day and year herein-

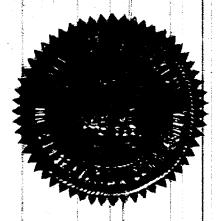
STATE OF NEW MEXICO OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

Williama

MURRAY E. MORGAN, Comber

A. L. PORTER, Jr., Member & Secretary



BEFORE THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING, CALLED BY THE OIL CONSERVATION COMMISSION OF THE STATE OF NEW MEXICO FOR THE PURPOSE OF CONSIDERING:

> CASE NO. 1394 Order No. R-1139

APPLICATION OF RALPH LOWE, ET AL., FOR AN ORDER REDUCING ALLOWABLES IN THE GLADIOLA (DEVONIAN) POOL, LEA COUNTY, NEW MEXICO.

INTERIM ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 o'clock a.m. on March 13, 1958, at Santa Fe, New Mexico, before the Oil Conservation Commission of New Mexico, hereinafter referred to as the "Commission."

NOW, on this // day of March, 1958, the Commission, a quorum being present, having considered the application, and the evidence thus far adduced and being fully advised in the premises.

FINDS:

- (1) That due public notice having been given as required by law, the Commission has jurisdiction of this cause and the subject matter thereof.
- (2) That it was not possible for the operators in the Gladiola (Devonian) Pool to make a complete study of the reservoir characteristics of said pool prior to the time that this case was called for hearing.
- (3) That it will be possible for the operators in the Gladiola (Devonian) Pool to make the necessary reservoir studies prior to March 26, 1958, and that this case should therefore be continued to that date.
- (4) That all the parties who appeared and protested the granting of the subject application stipulated their willingness to furnish the applicant with copies of all exhibits which said protestants will offer at the continued hearing of this case within a reasonable time prior to said hearing.
- (5) That there is a possibility that premature water encroachment will occur in certain of the wells in the Gladiola

22-Case No. 1394 Order No. R-1139

(Devonian) Pool if said wells are permitted to produce at allowable rates authorized for March and April, 1958, and further that said premature water encroachment may result in underground waste.

(6) That the production from all wells in the Gladiola (Devonian) Pool should be curtailed to an amount not to exceed 190 barrels of oil per day per well.

IT IS THEREFORE ORDERED:

- (1) That notwithstanding the allowables assigned to the wells in the Gladiola (Devonian) Pool in Lea County, New Mexico, by the cil proration schedules for the months of March and April of 1958, no well in said Gladiola (Devonian) Pool shall be produced in excess of 190 barrels of cil per day during the effective period of this order.
- (2) That the back allowable authorized for production in the Gladiola (Devonian) Pool by the Oil Provation Schedule for the month of March 1958, be and the same is hereby suspended during the effective period of this order.
- (3) That this order shall become effective at 7 o'clock a.m. Mountain Standard Time, on March 16, 1958, and shall remain in effect until such time as a permanent order is entered in this case.
- (4) That Case No. 1394 be and the same is hereby continued until 9 o'clock a.m. on March 26, 1958, at Mabry Hall, State Capitol, Santa Fe, New Mexico.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

EDWIN L. MECHEM, Chairman

MURRAY E, MORGAN, Hember

A. L. PORTER, Mr., Member & Secretary

APPLICATION OF RALPH LOWE ET AL. FOR AN EMERGENCY ORDER REDUCING ALLOWABLES IN THE GLADIOLA POOL IN LEA COUNTY, NEW MEXICO.

APPLICATION

COMES how Ralph Lowe, on behalf of himself and Colorado
Oil & Gas Corporation, and makes application for an emergency
order and in support thereof states:

- 1. That Ralph Lowe is the operator of twenty-four of the approximate ninety wells completed in and producing from the Gladiola (Devonian) Pool in Lea County, New Mexico.
- 2. That the producing mechanism in the said Gladiola Pool is an active water drive.
- 3. That the number of wells producing water in said Gladiola Pool has been increasing over the period of the last six months and that on February 21, 1958 the Ralph Lowe, et al. Lawton-State No. 2 Well located in NW/4 SW/4 of Section 32, Township 11 South, Range 38 East, NMPM, commenced producing 100% water, whereas prior to that date said well had been capable of producing top allowable since completion on September 19, 1956.
- 4. That the applicant states and believes that the water production from the above-described wells is premature and that said premature water production has been caused by the production of said wells at excessive rates.
- 5. That the said Gladiola Pool is in the 12,000 to 13,000 foot depth range and that said pool is therefore assigned a depth factor of 6.75 times the normal unit allowable and that the top unit allowable for said pool for the month of March, 1958, will be 236 barrels of oil per day.
- 6. That in addition to the top unit allowable heretofore set forth, the Commission has authorized the production during the month of March, 1958, of back allowable in the said Gladiola Pool as a result of purchaser prorationing by Magnolia Petroleum Company during the months of June, July, August, September and October, 1957.

- 7. That the applicant further states and believes that the production of the wells in the said Gladiola Pool at the presently authorized rates will result in additional premature water encroachment thereby reducing the ultimate recovery of oil from the said Gladiola Pool.
- 8. That during the period of purchaser prorationing referred to above, the production from the wells in the northernmost portion of the pool (formerly North Gladiola Pool) was reduced to an approximate average daily production of 190 barrels of oil and that during said period the pressure performance of certain of said wells indicated that production at this lower rate would result in the additional ultimate recovery of oil from said wells.
- 9. That the applicant states and believes that time is of the utmost importance and that an emergency exists which requires the promulgation of an emergency order to prevent the waste of oil in the Gladiola Pool in Lea County, New Mexico.

WHEREFORE the applicant prays that an emergency order be immediately entered curtailing the maximum production from any well in the Gladiola Pool in Lea County, New Mexico to an amount not to exceed 190 barrels of oil per day, and further that the Commission call a hearing on its own motion at the earliest possible date to consider the entry of a permanent order in this regard.

BALPH LOWE ET AL.

By: Danin L. Landus
HARVIN T. TANDITA

- 7. That the applicant further states and believes that the production of the wells in the said Gladiola Pool at the presently authorized rates will result in additional premature water encroachment thereby reducing the ultimate recovery of oil from the said Gladiola Pool.
- 8. That during the period of purchaser prorationing referred to above, the production from the wells in the northern-most portion of the pool (formerly North Gladiola Pool) was reduced to an approximate average daily production of 190 barrels of oil and that during said period the pressure performance of certain of said wells indicated that production at this lower rate would result in the additional ultimate recovery of oil from said wells.
- 9. That the applicant states and believes that time is of the utmost importance and that an emergency exists which requires the promulgation of an emergency order to prevent the waste of oil in the Gladiola Pool in Lea County, New Mexico.

wherefore the applicant prays that an emergency order be immediately entered curtailing the maximum production from any well in the Gladiola Pool in Lea County, New Mexico to an amount not to exceed 190 barrels of oil per day, and further that the Commission call a hearing on its own motion at the earliest possible date to consider the entry of a permanent order in this regard.

RALPH LOWE ET AL.

By: Warrin L. Landus
HARVIN L. LANDUS

ir/

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WESTERN UNION

TELEGRAM

W. P. MARSHALL, PREBIDENT

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| Letter Telegram

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HS EDAO65 PD=MAGNOLIA ARK 24 1139AMC=

1959 MAR 24 M 11 58

RALPH LOWE=

ATTN HARVIN LANDUA=RM 905 MIDLAND TOWER MIDLAND TEX=:

THE FOLLOWING WIRE SENT TODAY TO NEW MEXICO OIL CONSERVATION COMMISSION SANTA FE NEW MEXICO MCALESTER FUEL CO IS AGREEABLE TO CONTINUING THE 190 BOPD ALLOWABLE IN THE GLADIOLA DEVONIAN POOL FOR AN INDEFINITE PERIOD OR UNTIL ADEQUATE JUSTIFICATION FOR CHANGE IS EVIDENT MCALESTER FUEL CO VERNON TURNER

190 BOPD=

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE