

CASE 4194: Appli. of PHILLIPS
FOR AN AMENDMENT OF ORDER NO.
R-3181 & DUAL COMPLETIONS.

Case Number.

4194

Application

Transcripts.

Small Exhibits

ETC.



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SPECIALIZING IN: DEPOSITIONS, HEARINGS, STATEMENTS, EXPERT TESTIMONY, DAILY COPY, CONVENTIONS

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BEFORE THE
NEW MEXICO OIL CONSERVATION COMMISSION
Santa Fe, New Mexico
August 27, 1969

IN THE MATTER OF:

Application of Phillips Petroleum)
Company for an amendment of Order)
No. R-3181 and dual completions,)
Lea County, New Mexico.)

Case No. 4194

BEFORE: ELVIS A. UTZ
Examiner

TRANSCRIPT OF HEARING

MR. UTZ: Case 4194.

MR. HATCH: Application of Phillips Petroleum Company for an amendment of Order No. R-3181 and dual completions, Lea County, New Mexico.

MR. KELLAHIN: If the Examiner please, Jason Kellahin, Kellahin and Fox, Santa Fe, appearing for the applicant. We have one witness I would like to have sworn.

MR. UTZ: Are there any other appearances? You may proceed.

(Witness sworn.)

(Whereupon, Applicant's Exhibits Nos. 1 through 10 marked for identification.)

* * * * *

W. J. M U E L L E R, a witness, called by the Applicant, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MR. KELLAHIN:

Q Will you state your name, please?

A W. J. Mueller, M-u-e-l-l-e-r.

Q By whom are you employed and in what position, Mr. Mueller?

A I am a District Engineer for Phillips Petroleum

Company in Odessa, Texas.

Q Have you testified before the Oil Conservation Commission and made your qualifications as an engineer a matter of record?

A Yes, sir.

MR. KELLAHIN: Are the witness's qualifications acceptable?

MR. UTZ: Yes, sir, they are.

Q (By Mr. Kellahin) Mr. Mueller, are you familiar with the application of Phillips Petroleum Company in Case 4194?

A Yes, sir, I am.

Q Briefly, what is proposed by Phillips in this case?

A Proposed in this case is an amendment to a prior issued Commission Order, No. R-3181, which authorized and promulgated special field rules governing the operation of the Vac Abo Pressure Maintenance Project.

Q Referring to what has been marked as the Applicant's Exhibit No. 1, would you identify that exhibit?

A Exhibit No. 1 is a large scale map of the eastern portion of the Vacuum Field outlined in a heavy blue dash line. It is the Vacuum Unit operated by the Phillips Petroleum Company. The Abo wells are shown as brown, upside down triangles. Also on the map are shown three of the wells

designated with blue arrows showing the two prior approved wells for gas injection, and the two additional wells we propose to inject at this time.

Q How are those marked for identification? Is it marked by the arrow?

A Yes, on the arrow, the notation, Well No. 13 dash 11, meaning Tract 13, Well No. 11, and the one denoted 11 dash 6 means Tract 11, Well 6, were approved in the Original Commission Order. We propose to amend the order to also include Tract 10, Well No. 6 and Tract 13, Well No. 4.

Q Now, referring to what has been marked Exhibit No. 2, will you identify that exhibit?

A Exhibit No. 2 is a copy of Commission Order R-3181.

Q Will you make reference to the provisions of this Order later in your testimony?

A Yes, sir.

Q Referring to what has been marked as Exhibit 3, would you identify that exhibit?

A Exhibit No. 3 is a bottomhole pressuregraph of the Vac Abo Unit wells. On Exhibit No. 3, we have notated two wells circled in yellow which are the current approved wells for gas injection. This is under Paragraph 1 of the Commission Order R-3181, the Shell Oil Company State "T" Well No. 6

which currently bears the designation following unitization of Vac Abo Unit Battery 3, Tract 11, Well No. 6 and the Standard of Texas Vac Abo Unit, Well No. 11 which currently carries the name of Vac Abo Unit, Battery 2, Tract 13, Well No. 11. These two were approved under Paragraph I of the previous Order and permitted Phillips to inject gas in the Abo Reef in these two wells.

Q Now, the exhibit shows the bottomhole pressures on a current basis, is that correct?

A Yes, we have here the last three bottomhole pressure surveys taken across the crest of the structure and shown in a graph-like form, off to the upper left-hand corner. The latest bottomhole pressure survey is colored in red here, and to point out that the two prior approved injection wells had substantial bottomhole pressure over the diagonal offsets, and for this reason we would like to initially convert the Vac Abo Unit, Battery 3, Tract 10, Well No. 6, and that the proposed well be approved for injection at this time, and also Battery 2, Tract 13, Well No. 4. These wells have bottomhole pressures of from 400 to 600 pounds less than the two prior approved injection wells. And for that reason we think we can obtain better injectivity, plus we believe this is where the pressure

maintenance is needed.

Q Is it your intention to abandon the two approved wells for gas injection purposes?

A We would not wish to have them abandoned or replaced. We would like to see them remain in the Order, although initially we intend to only convert the two we're asking approval of today. We would like to go to these, should we have injectivity difficulties or something like that.

Q Referring to what has been marked as Exhibit No. 4, which is a four-page exhibit, would you identify that and discuss the information shown on the exhibit?

A Exhibit No. 4 is a diagrammatic sketch of each of the four injection wells showing their casing size, setting depths, cement volumes, cement top, the top of the Abo Reef and the proposed injection intervals and producing intervals within the Abo Reef.

Q In connection with the application that was filed in this case, there was a request for authority to complete your Vacuum Abo Pressure Maintenance Project injection wells for simultaneous injection of gas into the Upper Section of the Abo Reef while producing the Lower Section of the Abo, is that correct?

A Yes, sir.

Q Do the completions, as shown on your diagrammatic sketch, show this type of completion?

A Yes.

Q Would you discuss the reason for this?

A We ran some injectivity calculations and have found that within approximately the upper 100 feet of the Abo Reef will sustain sufficient injectivity for the volumes of gas we have available and since the Abo Reef in this area varies from five to seven hundred feet thick, we would like to maintain producing status in the bottom portion of the Abo Reef while injecting gas into the upper portion. This would permit us not only to maintain our current producing rate for some time, the time here being debatable as to how fast the gas will channel down or appear in the lower perms. We believe that the upper portion will have sufficient injectivity to let us put it there and we can monitor and check it and also produce the lower.

Q Would it result in the loss of oil production if you are not permitted to do it in this fashion, in your opinion?

A Yes.

Q What is the thickness of the Abo Reef here?

A Approximately 500 to 700 foot thick.

Q What will be the difference between your perforations for injection of gas and perforations for production of oil?

A In all four of these wells, there is approximately 300 foot separating the bottom perforations for the injection interval and the top perforation of the producing interval.

Q Now, will this also give you an opportunity to learn a little more about the performance of this reservoir under pressure maintenance conditions?

A Yes, it should give us some definite engineering data with reference to permeability within the Abo Reef.

Q In the application you also ask for authority to inject gas through the casing tubing annulus and produce oil through tubing, is that correct?

A Yes, sir.

Q Is this a feasible way of injecting gas, in your opinion, in this pool?

A Yes, we believe it is. Since we have -- all new casing was run by the former operators of these wells. It is good grade casing, capable of withstanding injection pressure. It is all cemented back above the highest producing interval in the field. It will permit a substantial savings in the completion of these wells of approximately

\$15,000.00 per injection well, over the running of two strings of tubing.

Q Is there any possibility, in your opinion, of causing waste or damage to any producing horizon, other than the Abo?

A No.

Q Would there be any possibility of contaminating any waters then, in this area?

A No, sir.

Q It's fully cemented behind the pipe in those zones?

A Although they were not all circulated, right.

There is cement coverage of all producing zones. The water sands are doubly protected with two strings of casing, surface and intermediate.

Q Your exhibit also shows the type of casing installed in the wells?

A Yes, off to the left-hand side of the wells in the diagrammatic sketch is the weight and grade of the five and a half inch casing and the lowest weight and grade is fifteen and a half pounds, J 55.

Q Referring to what has been marked as Exhibits 5, 6, 7 and 8, would you identify these exhibits?

A These are small scale individual well logs of

the four injection wells, showing the top of the Abo Reef and the proposed injection and producing intervals.

Q Now, referring to what has been marked as Exhibit No. 9, would you identify that exhibit?

A Exhibit 9 is a packet of the Lea Plant residue gas being the top analysis. This is the gas that will be compressed for 2,000 pounds of injection into the Abo Reef. This gas is not a sweet gas. It is a sour gas containing on last test analysis in April of '69, 429 grains of H_2S . However, this gas is considerably sweeter than the Vacuum Abo produced gas on the attached analysis are from the individual four batteries within the Vac Abo Unit. You will note that Battery 1 contains 404 grains H_2S ; Battery 2, 1,098 grains, Battery 3, 1360 grains and Battery 4, 1920 grains. This figure is located off on the right-hand part of the analysis, about half way down. It's H_2S grains per hundred cubic feet. The gas we plan to inject is sweeter and will be dehydrated and no corrosion problems are anticipated whatsoever.

Q All the gas you intend to inject will come from your -- what is that plant?

A Phillips Petroleum Lea Plant, Buck Eye, New Mexico.

Q All your injection gas will come from that source?

A Yes.

Q Have you had any corrosion problems with that gas?

A The people that have used the residue gas for gaslift in the field have had no noticeable corrosion problems. In fact, one of the Abo wells we operate is under gaslift by Marathon and there has been no corrosion noted by us in the years that we have been operating as the Abo Unit Well.

Q That is the same gas that you are talking about here?

A Yes.

Q Will you use a lined tubing or pipe for the transmission of that gas?

A The transmission of any gas from the plant to the wells will be in externally coated and wrapped line but not internally coated.

Q Will you use coupons?

A Yes, test nipples and test coupons installed in the line so we can maintain a check so that if corrosion does occur, proper treating can be done.

Q Now referring to what has been marked as Exhibit No. 10, would you identify that exhibit?

A Exhibit No. 10 is an outline of the Vac Abo Unit showing the current four battery designations we produce into this unit. The Battery 1 being located down there in Section 5, Battery 2 in Section 4, Battery 3 in Section 34

and Battery 4 in Section 26. All the wells within the areas outlined in green produce to the respective, the noted battery, within the center of that area.

Also shown on this plat are the four injection wells and the outline of the project area as determined by the Commission Order R-3181, Paragraph 2, Rule 1. Rule 1 outlined a project area for the Vac Abo Pressure Maintenance Unit. It is proposed by this exhibit to enlarge the project area to include in Section 33, the southeast quarter of the northeast quarter carried on this map as Tract 9, Well No. 5. Also in Section 34, the northwest quarter designated as Tract 8, containing four wells and also in Section 34, the north half of the southeast quarter and the southwest quarter of the southeast quarter on which is located one well designated as Tract 10, Well No. 9.

Our reason for wanting to expand the project area is: One, with the approval of Well No. 10-6, for injection, unless the project area is expanded, the two diagonals and one offset would be outside the project area. We would like to expand the project area up into the northwest quarter of Section 34.

For ease in administrative purposes, we would also like to see the portion of the southeast quarter of

Section 34 included in the project area so that the project area would then encompass the same area as covered by our current producing batteries so that the total project area would then include the total area covered by Battery 2 and Battery 3.

Q Do you have anything to add, Mr. Mueller?

A I might add that several notes here relative to the annulus injection. As we say, we feel that we have a substantial saving money-wise here, but also under annulus injection, we can obtain, about 390 pounds less wellhead injection pressure is anticipated. That concludes my notes, Jason.

Q Will the approval of this application, in your opinion, enable you to have a more efficient operation of the Pressure Maintenance Project?

A Yes, sir.

Q It would be in the interest of conservation and prevention of waste, in your opinion?

A Yes, sir.

Q Were Exhibits 1 through 10 prepared by you or under your supervision?

A Yes, sir.

MR. KELLAHIN: At this time, I would like to offer in evidence Exhibits 1 through 10, inclusive.

MR. UTZ: Without objection, Exhibits 1 through 10 will be entered into this record.

(Whereupon, Applicant's Exhibits 1 through 10 offered and admitted in evidence.)

MR. KELLAHIN: That's all I have on Direct Examination.

CROSS EXAMINATION

BY MR. UTZ:

Q Mr. Mueller, the area on Exhibit 10 outlined in green to the northeast and the southwest, what is the purpose of outlining those? Is that the area for tank batteries 1 and 4?

A Yes, sir. The wells bounded by those two areas produce into Batteries 1 and 4.

Q That is in the Abo Pool?

A Yes. In other words, the Vac Abo Unit does not carry a total unit production. We maintain individual production by batteries there. We have four separate reports, production and allowable by batteries.

Q But the Vacuum Abo Pressure Maintenance Unit is represented by the red outline in which the batteries 2 and 3 are located, is that correct?

A Not the unit, Mr. Examiner. The unit is defined by the total area outlined in green, but Paragraph 2, Rule 1

of the Commission Order defined a project area within the unit that would encompass the injection wells and their surrounding offsets and it was in this project area that we will be permitted to transfer allowables and shut in wells and have to report monthly the allowable request for the project area immediately following the Commissions' setting of the allowable.

Q The Unit Agreement includes the area served by all 4 batteries?

A Yes.

Q That's what I was trying to get straightened out. And it's my understanding that 13-4 and 13-11 were approved by R-3181.

A No, sir, 1311 and 11-6 were the two that were approved by the Order.

Q That's correct, 1311 and 11-6 were the two that were approved and in this application, you are requesting two for 13 dash 4 and 1- dash 6?

A Yes, sir.

Q I believe your injection pressure was 2,000?

A This is anticipated maximum we will attain. Incidentally, initially the bottomhole pressure existing in the two wells will probably be in the neighborhood of 1700 pounds, but the equipment is being designed to handle

up to 2,000.

Q What kind of pressure have you got in the Abo Section at this time?

A On the overall average, it is shown on plat exhibit, is this 3?

MR. KELLAHIN: Yes.

A Our average in March of this year was 1704 pounds, average bottomhole pressure for the unit.

Q So you are requesting actually two things here, is that correct? Expansion of the Unit and two more wells, injection wells. Is there anything else?

A And the simultaneous completion with casing and tubing annulus injection.

Q That's right.

MR. KELLAHIN: That's right.

Q (By Mr. Utz) That would be for all four wells?

A Yes.

MR. KELLAHIN: Actually we would like to have that type of completion for any wells put on there, too, for the unit.

MR. UTZ: Are there any other questions? The witness may be excused.

(Witness excused.)

MR. UTZ: Any statements? The case will be taken under advisement.

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STATE OF NEW MEXICO)
) ss
 COUNTY OF BERNALILLO)

I, ADA DEARNLEY, Court Reporter in and for the County of Bernalillo, State of New Mexico, do hereby certify that the foregoing and attached Transcript of Hearing before the New Mexico Oil Conservation Commission was reported by me and that the same is a true and correct record to the best of my knowledge, skill and ability.

Witness my hand this 17th day of September, 1969.

Ada Dearnley
 Ada Dearnley

I do hereby certify that the foregoing is a complete record of the proceedings in the Examiner hearing of Case No. 4194, heard by us on Sept. 17, 1969.
Thos. D. [Signature]
 New Mexico Oil Conservation Commission

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4194
Order No. R-3181-A

APPLICATION OF PHILLIPS PETROLEUM COMPANY
FOR AN AMENDMENT OF ORDER NO. R-3181 AND
DUAL COMPLETIONS, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 27, 1969,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this 10th day of September, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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 Order No. R-3181, dated January 18, 1967, authorized
the applicant, Phillips Petroleum Company, to institute a pressure
maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef
Pool, Lea County, New Mexico, through the following-described wells
in Lea County, New Mexico:

- (a) Shell Oil Company State "T" Well No. 6 (now
Vacuum Abo Unit Tract 11 Well No. 6), located
in Unit P of Section 33, Township 17 South,
Range 35 East, NMPM.
- (b) Standard of Texas Vac Edge Unit Well No. 11
(now Vacuum Abo Unit Tract 13 Well No. 11),
located in Unit F of Section 4, Township 18
South, Range 35 East, NMPM.

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(3) That the applicant seeks amendment of said Order No. R-3181 to permit the injection of gas through two additional wells located in Unit L of Section 34, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico, and Unit B of Section 4, Township 18 South, Range 35 East, NMPM, Lea County, New Mexico, and the expansion of said project area to include the SE/4 NE/4 of Section 33 and the NW/4, N/2 SE/4, and SW/4 SE/4 of Section 34, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico.

(4) That the applicant further seeks authority to dually complete the four above-described wells in such a manner as to permit the production of oil from the lower section of the Abo Reef through tubing and the injection of gas for pressure maintenance purposes into the upper section of the Abo Reef through the casing-tubing annulus, with separation of sections by packers.

(5) That the mechanics of the proposed dual completions are feasible and in accord with good conservation practices.

(6) That the injection of gas through two additional wells and the expansion of the project area as requested are in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(7) That amendment of Order No. R-3181 to permit approval of the two additional wells for gas injection, the dual completion of all gas injection wells, and expansion of the subject project area will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That Order (1) of Order No. R-3181 is hereby amended to read in its entirety as follows:

"(1) That the applicant, Phillips Petroleum Company, is hereby authorized to operate a pressure maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New Mexico, to be designated as the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, by the injection of gas into the Abo Reef formation through four wells to be completed in such a manner as to permit the production of oil from the lower section of the Abo Reef through tubing and the injection of gas into the

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Order No. R-3181-A

upper section of the Abo Reef through the casing-tubing annulus as follows:

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Vacuum Abo Unit Tract 11 Well No. 6, located in Unit P of Section 33 - injection of gas in the perforated interval from 8310 feet to 8455 feet, production of oil from the perforated interval from 8746 feet to 8786 feet, with separation of sections by a packer set at 8500 feet;

Vacuum Abo Unit Tract 10 Well No. 6, located in Unit L of Section 34 - injection of gas in the perforated interval from 8430 feet to 8460 feet, production of oil from the perforated interval from 8751 feet to 8833 feet, with separation of sections by a packer set at 8500 feet;

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Vacuum Abo Unit Tract 13 Well No. 4, located in Unit B of Section 4 - injection of gas in the perforated interval from 8364 feet to 8400 feet, production of oil from the perforated interval from 8704 feet to 8762 feet, with separation of sections by a packer set at 8450 feet;

Vacuum Abo Unit Tract 13 Well No. 11, located in Unit F of Section 4 - injection of gas in the perforated interval from 8335 feet to 8490 feet, production of oil from the perforated interval from 8799 feet to 8857 feet, with separation of sections by a packer set at 8550 feet."

(2) That Rule 1 of the Special Rules and Regulations for the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project is hereby amended to read in its entirety as follows:

"RULE 1. The project area of the Phillips Petroleum Company Abo Pressure Maintenance Project, hereinafter referred to as the

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Order No. R-3181-A

Project, shall comprise the area described as follows:

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 33: SW/4 SW/4, E/2 SW/4, SE/4,
and SE/4 NE/4

Section 34: W/2, N/2 SE/4, and SW/4 SE/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 3: N/2 NW/4 and SW/4 NW/4

Section 4: N/2, N/2 S/2, and S/2 SW/4

Section 5: NE/4 NE/4, S/2 NE/4, and SE/4"

(3) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION


DAVID F. CARGO, Chairman


ALEX J. ARMILLO, Member


A. L. PORTER, Jr., Member & Secretary


csr/

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(3) That initially the project area should comprise only the following-described area:

LEA COUNTY, NEW MEXICO
TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 33: SW/4 SW/4, E/2 SW/4, and SE/4
Section 34: SW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 3: N/2 NW/4 and SW/4 NW/4
Section 4: N/2, N/2 S/2, and S/2 SW/4
Section 5: NE/4 NE/4, S/2 NE/4, and SE/4

(4) That a pressure maintenance project comprising the above-described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(5) That the applicant further seeks the promulgation of special rules and regulations governing said pressure maintenance project, and the establishment of an administrative procedure whereby said project may be expanded for good cause shown and whereby additional wells in the project area may be converted to gas injection.

(6) That special rules and regulations for the operation of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project in any proportion, provided that no well in the project area which directly or diagonally offsets a well outside the Vacuum Abo Unit Area producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Vacuum-Abo Reef Pool until such time as the well has experienced a substantial response to gas injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Vacuum-Abo Reef Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to institute a pressure maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New Mexico,

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3509
Order No. R-3181

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR A PRESSURE MAINTENANCE
PROJECT, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 4, 1967,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 18th day of January, 1967, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Phillips Petroleum Company, seeks
authority to institute a pressure maintenance project in its
Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New
Mexico, by the injection of (gas) into the Abo Reef formation
through the following wells in Lea County, New Mexico:

Shell Oil Company State "T" Well No. 6,
located 330 feet from the South line and
660 feet from the East line of Section 33,
Township 17 South, Range 35 East, NMPM, and

Standard of Texas Vac Edge Unit Well No. 11,
located 1650 feet from the North line and
1980 feet from the West line of Section 4,
Township 18 South, Range 35 East, NMPM.

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for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on a 40-acre proration unit shall be top unit allowable for the Vacuum-Abo Reef Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the Vacuum-Abo Reef Pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the Vacuum-Abo Reef Pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the Vacuum Abo Unit Area producing from the same common source of supply shall not produce in excess of top unit allowable for the pool until such time as the well receives a substantial response to gas injection. When such a response has occurred, the well shall be permitted to produce up to two times top unit allowable for the pool. Production of such well at a higher rate shall be authorized only after notice and hearing. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Vacuum-Abo Reef Pool, except that any well or wells within

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to be designated as the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, by the injection of gas into the Abo Reef formation through the following-described wells in Lea County, New Mexico:

Shell Oil Company State "T" Well No. 6,
located 330 feet from the South line and
660 feet from the East line of Section 33,
Township 17 South, Range 35 East, NMPM, and

Standard of Texas Vac Edge Unit Well No. 11,
located 1650 feet from the North line and
1980 feet from the West line of Section 4,
Township 18 South, Range 35 East, NMPM.

(2) That Special Rules and Regulations governing the operation of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
PHILLIPS PETROLEUM COMPANY
VACUUM ABO PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 33: SW/4 SW/4, E/2 SW/4, and SE/4

Section 34: SW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 3: N/2 NW/4 and SW/4 NW/4

Section 4: N/2, N/2 S/2, and S/2 SW/4

Section 5: NE/4 NE/4, S/2 NE/4, and SE/4

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables

RULE 9. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well outside the Project producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 10. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection or gas will be confined to the Abo Reef formation.

(3) A letter stating that all offset operators to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

RULE 11. That the subject pressure maintenance project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said rules are not inconsistent with the rules prescribed by this order.

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CASE No. 3509

Order No. R-3181

the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected, if any, into the Vacuum-Abo Reef Pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_a \times 2,000}{\frac{P_g - I_g}{P_o}}$$

where:

A_{adj} = the well's daily adjusted allowable

TUA = top unit allowable for the pool

F_a = the well's acreage factor

P_g = average daily volume of gas produced by the well during the preceding month, cubic feet

I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet

P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

RULE 8. Each month the project operator shall, within three days after the normal unit allowable for Southeast New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total Project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

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CASE NO. 3509

Order No. R-3181

(3) That allowables to all wells in the Vacuum Abo Unit Area but outside the limits of the Vacuum Abo Pressure Maintenance Project Area as defined herein shall be assigned and produced in accordance with the applicable Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

DAVID F. CARGO, Chairman

GUYTON B. HAYS, Member

A. L. PORTER, Jr., Member & Secretary

S E A L

esr/

CASE 4194 - Continued from Page 1 --

seeks authority to inject gas through two additional wells located in Unit L of Section 34, Township 17 South, Range 35 East and Unit B of Section 4, Township 18 South, Range 35 East and to expand said project area to include the SE/4 NE/4 of Section 33 and the NW/4, N/2 SE/4, and SW/4 SE/4 of Section 34 Township 17 South, Range 35 East. Applicant further seeks authority to dually complete all gas injection wells in the project in such a manner as to permit the production of oil from the lower section of the Abo Reef through tubing and the injection of gas into the upper section of the Abo Reef through the casing-tubing annulus.

CASE 4195: Application of Continental Oil Company for eight non-standard gas proration units and a non-standard gas well location, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the rededication of acreage to establish the eight following non-standard gas proration units in Township 20 South, Range 37 East, Eumont Gas Pool, Lea County, New Mexico:

A 120-acre non-standard unit comprising the SE/4 NE/4 and E/2 SE/4 of Section 14, to be dedicated to the "SEMU" Well No. 46, located in Unit D of said Section 14;

A 240-acre non-standard unit comprising the NE/4 and E/2 SE/4 of Section 26, to be dedicated to the "SEMU" Well No. 64, located in Unit G of said Section 26;

A 560-acre non-standard unit comprising the W/2 and W/2 SE/4 of Section 26 and the E/2 E/2 of Section 27, to be dedicated to the "SEMU" Well No. 65, located in Unit L of said Section 26;

A 640-acre non-standard unit comprising the W/2 and the W/2 E/2 of Section 14 and E/2 E/2 of Section 15, to be dedicated to the "SEMU" Well No. 66, located in Unit L of said Section 14;

DOCKET: EXAMINER HEARING - WEDNESDAY - AUGUST 27, 1969

9 A.M. - OIL CONSERVATION COMMISSION CONFERENCE ROOM,
STATE LAND OFFICE BUILDING - SANTA FE, NEW MEXICO

The following cases will be heard before Elvis A. Utz, Examiner, or Daniel S. Nutter, Alternate Examiner:

- CASE 4191: Application of Gulf Oil Corporation for salt water disposal, Roosevelt County, New Mexico. Applicant, in the above-styled cause, seeks authority to dispose of produced salt water into the San Andres formation in the perforated interval from approximately 4408 feet to 4415 feet in its Roosevelt "AN" State Well No. 3 located in the NW/4 SE/4 of Section 32, Township 7 South, Range 36 East, adjacent to the Todd-Lower San Andres Pool, Roosevelt County, New Mexico.
- CASE 4192: Application of Southwest Production Corporation for an unorthodox gas well location, Chaves County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill its Buffalo Valley "Com" Well No. 2 at an unorthodox location 1650 feet from the North line and 990 feet from the East line of Section 35, Township 14 South, Range 27 East, Buffalo Valley-Pennsylvanian Gas Pool, Chaves County, New Mexico, in exception to the provisions of Rule 2 of the special rules for said pool.
- CASE 4193: Application of Humble Oil & Refining Company for a dual completion, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval for the dual completion (conventional) of its Bowers "A" Federal Com 33 Well No. 33 located in Unit D of Section 29, Township 18 South, Range 36 East, Lea County, New Mexico, in such a manner as to permit the production of oil from the Hobbs (Grayburg-San Andres) Pool and the Hobbs-Blinbry Pool through parallel strings of tubing.
- CASE 4194: Application of Phillips Petroleum Company for an amendment of Order No. R-3181 and dual completions, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3181, which order established special rules regulating the operation of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, Vacuum-Abo Reef Pool, Lea County, New Mexico. Applicant

CASE 4195 - Continued from Page 2 -

A 320-acre non-standard unit comprising the SE/4, S/2 NE/4, and E/2 SW/4 of Section 24, to be dedicated to the "SEMU" Well No. 67, located in Unit K of said Section 24;

A 640-acre non-standard unit comprising the E/2 and E/2 W/2 of Section 23 and W/2 W/2 of Section 24, to be dedicated to the "SEMU" Well No. 68, located in Unit J of said Section 23;

An 80-acre non-standard unit comprising the E/2 NW/4 of Section 24, to be dedicated to the "SEMU" Well No. 69, located in Unit F of said Section 24;

A 320-acre non-standard unit comprising the E/2 E/2 of Section 22 and the W/2 W/2 of Section 23, to be dedicated to the "SEMU" Well No. 90, to be completed at a non-standard location 660 feet from the South and East lines of said Section 22.

CASE 4196: Application of Continental Oil Company for a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the consolidation of three existing non-standard gas proration units into one 360-acre non-standard unit comprising the W/2 and the NW/4 NE/4 of Section 18, Township 23 South, Range 37 East, Jalmat Gas Pool, Lea County, New Mexico, to be dedicated to its Stevens "B" Wells Nos. 15 and 16, located in Units F and K, respectively, of said Section 18. Applicant further seeks authority to produce the allowable assigned to said unit from either of the aforesaid wells in any proportion.

CASE 4197: Application of Continental Oil Company for an amendment to Order No. R-37, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3756 which authorized, among other things, the drilling of a water injection well in the Forest Donahue Waterflood Project area at a location 1980 feet from the North line and 1650 feet from the West line of Section 35, Township 16 South, Range 29 East, Eddy County, New Mexico.

CASE 4197 - Continued from Page 3 -

Applicant now seeks authority to locate said well at an unorthodox location 1980 feet from the North line and 1450 feet from the West line of said Section 35 in the Forest (San Andres) Pool.

CASE 4198: Application of Continental Oil Company for amendment of Order No. R-3487, Lea County, New Mexico. Applicant, in the above-styled cause, seeks the amendment of Order No. R-3487 which authorized the applicant to utilize its Eaves "A" Well No. 10, located in Unit P of Section 19, Township 26 South, Range 37 East, Scarborough Yates-Seven Rivers Pool, to dispose of salt water into the Seven Rivers formation in the interval from 3208 feet to 3255 feet. Applicant now seeks authority to inject produced salt water into the Yates and Seven Rivers formations in the perforated and open-hole interval from approximately 3107 feet to 3410 feet in said well and the reclassification of said salt water disposal well to a pressure maintenance injection well.

CASE 4199: Application of Burleson & Huff for compulsory pooling and a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jalmat Gas Pool underlying the SE/4 of Section 28, Township 25 South, Range 37 East, Lea County, New Mexico. Said 160-acre non-standard gas proration unit to be dedicated to the Burleson & Huff "Cook" Well No. 2, a recompleted well, located 660 feet from the South and East lines of said Section 28. Also to be considered will be the costs of drilling and/or recompleting said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4200: Application of Burleson & Huff for compulsory pooling and a non-standard gas proration unit, Lea County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Jalmat Gas Pool underlying the NE/4 of Section 29, Township 25 South, Range 37 East, Lea County, New Mexico. Said 160-acre non-standard gas proration unit to be dedicated to a well,

CASE 4204 - Continued from Page 5 -

and unorthodox locations in Sections 3 and 4, Township 25 South, Range 37 East, Langlie-Mactix Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby additional injection wells at orthodox and unorthodox locations may be approved for said project administratively.

CASE 4205: Application of Tesoro Petroleum Corporation for four unorthodox injection well locations and amendment of Order No. R-2807, McKinley County, New Mexico. Applicant, in the above-styled cause, seeks authority to inject water into the Hospah Upper Sand Oil Pool in its Hospah Unit Waterflood Project Area through four additional injection wells at unorthodox locations in Section 36, Township 18 North, Range 9 West, McKinley County, New Mexico, said wells to be located as follows:

Well No. 62 located 1900 feet from the South line and 1140 feet from the West line;

Well No. 63 located 1980 feet from the North line and 2310 feet from the West line;

A well to be drilled 1430 feet from the South line and 2625 feet from the East line;

A well to be drilled 30 feet from the South line and 2350 feet from the East line.

Applicant further seeks the amendment of Order No. R-2807, which order authorized the aforesaid waterflood project, to establish a procedure whereby additional injection wells at unorthodox locations, as may be necessary to complete an efficient injection pattern, may be approved administratively.

CASE 4206: Application of Shell Oil Company for an unorthodox oil well location and amendment to Order No. R-2538, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to drill a producing oil well at an unorthodox location 1315 feet from the North line and 2625 feet from the West line of Section 34, Township 19

CASE 4200 - Continued from Page 4 -

to be recompleted, located 660 feet from the East line and 1930 feet from the North line of said Section 29. Also to be considered will be the costs of drilling and/or recompleting said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well.

CASE 4201: Application of Mobil Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Langlie-Mattix Queen Unit Area comprising 1120 acres, more or less, of federal and fee lands in Sections 10, 11, 14, 15, 22, and 23, Langlie-Mattix Pool, Lea County, New Mexico.

CASE 4202: Application of Mobil Oil Corporation for a waterflood project and unorthodox injection well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Langlie-Mattix Queen Unit Area by the injection of water into the Queen sand through 17 wells at orthodox and unorthodox locations in Sections 10, 11, 14, 15, 22, and 23, Township 25 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico. Applicant further seeks a procedure whereby additional injection wells at orthodox and unorthodox locations may be approved for said project administratively.

CASE 4203: Application of Mobil Oil Corporation for a unit agreement, Lea County, New Mexico. Applicant, in the above-styled cause, seeks approval of the Humphrey Queen Unit Area comprising 761 acres, more or less, of federal and fee lands in Sections 3 and 4, Township 25 South, Range 37 East, Langlie-Mattix Pool, Lea County, New Mexico.

CASE 4204: Application of Mobil Oil Corporation for a waterflood project and unorthodox injection well locations, Lea County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute a waterflood project in its Humphrey Queen Unit Area by the injection of water into the Queen sand through 11 wells at orthodox

CASE 4208 - Continued from Page 7 -

several waterflood projects by the injection of water into the Seven Rivers formation through his Mary Lou Well No. 1 located in Unit H of Section 29 and his Caroline Well No. 4 located in Unit E of Section 28, both in Township 19 South, Range 28 East, East Millman-Seven Rivers Pool, Eddy County, New Mexico.

CASE 4209: Application of Harvey E. Yates Company of Artesia for several pressure maintenance projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute several pressure maintenance projects by the injection of water into the Seven Rivers and Queen formations, McMillan (Seven Rivers-Queen) Pool, Eddy County, New Mexico, through the following-described wells in Township 20 South, Range 27 East:

Page & Yates Well No. 8 - Unit M - Section 5
Page & Yates Well No. 6 - Unit I - Section 6
Page & Yates Well No. 7 - Unit J - Section 6
Lillie Yates Well No. 2 - Unit B - Section 7

CASE 4206 - Continued from Page 6 -

South, Range 35 East, as an infill well in its East Pearl-Queen Unit Waterflood Project area, East Pearl-Queen Pool, Lea County, New Mexico. Applicant further seeks the amendment of Order No. R-2538, which order authorized the aforesaid waterflood project, to establish a procedure whereby additional producing wells at unorthodox infill locations in the aforesaid project area, as may be necessary to complete an efficient producing pattern, may be approved administratively.

CASE 4207: Application of C. W. Trainer and DEL-LEA, Inc., for an unorthodox gas well location, Lea County, New Mexico. Applicants, in the above-styled cause, seek an exception to Rule 104 C II to permit the drilling of a well at an unorthodox gas well location 330 feet from the North line and 660 feet from the West line of Section 35, Township 12 South, Range 34 East, West Ranger Lake-Devonian Gas Pool, Lea County, New Mexico. The N/2 of said Section 35 to be dedicated to the well.

CASE 4186: (Readvertised)

Application of Tenneco Oil Company for compulsory pooling and an unorthodox gas well location, San Juan County, New Mexico. Applicant, in the above-styled cause, seeks an order pooling all mineral interests in the Basin-Dakota Gas Pool underlying the North half of Section 11, Township 29 North, Range 13 West, San Juan County, New Mexico. Said acreage to be dedicated to a well to be drilled at an unorthodox gas well location 2250 feet from the North line and 600 feet from the East line of said Section 11. Also to be considered will be the costs of drilling said well, a charge for the risk involved, a provision for the allocation of actual operating costs, and the establishment of charges for supervision of said well. In the absence of a valid objection an order will be issued upon the record entered in the subject case August 6, 1969.

CASE 4208: Application of John A. Yates of Artesia for several waterflood projects, Eddy County, New Mexico. Applicant, in the above-styled cause, seeks authority to institute

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 3509
Order No. R-3181

APPLICATION OF PHILLIPS PETROLEUM
COMPANY FOR A PRESSURE MAINTENANCE
PROJECT, LEA COUNTY, NEW MEXICO.

BEFORE EXAMINER UTZ

OIL CONSERVATION COMMISSION

EXHIBIT NO. 2

CASE NO. 4194

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on January 4, 1967,
at Santa Fe, New Mexico, before Examiner Daniel S. Nutter.

NOW, on this 18th day of January, 1967, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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, Phillips Petroleum Company, seeks
authority to institute a pressure maintenance project in its
Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New
Mexico, by the injection of gas into the Abo Reef formation
through the following wells in Lea County, New Mexico:

Shell Oil Company State "T" Well No. 6,
located 330 feet from the South line and
660 feet from the East line of Section 33,
Township 17 South, Range 35 East, NMPM, and

Standard of Texas Vac Edge Unit Well No. 11,
located 1650 feet from the North line and
1980 feet from the West line of Section 4,
Township 18 South, Range 35 East, NMPM.

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CASE No. 3509

Order No. R-3181

(3) That initially the project area should comprise only the following-described area:

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 23: SW/4 SW/4, E/2 SW/4, and SE/4

Section 34: SW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 3: N/2 NW/4 and SW/4 NW/4

Section 4: N/2, N/2 S/2, and S/2 SW/4

Section 5: NE/4 NE/4, S/2 NE/4, and SE/4

(4) That a pressure maintenance project comprising the above-described area is in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(5) That the applicant further seeks the promulgation of special rules and regulations governing said pressure maintenance project, and the establishment of an administrative procedure whereby said project may be expanded for good cause shown and whereby additional wells in the project area may be converted to gas injection.

(6) That special rules and regulations for the operation of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project should be promulgated and, for operational convenience, such rules should provide certain flexibility in authorizing the production of the project allowable from any well or wells in the project in any proportion, provided that no well in the project area which directly or diagonally offsets a well outside the Vacuum Abo Unit Area producing from the same common source of supply should be allowed to produce in excess of top unit allowable for the Vacuum-Abo Reef Pool until such time as the well has experienced a substantial response to gas injection. When such a response has occurred, the well should be permitted to produce up to two times top unit allowable for the Vacuum-Abo Reef Pool. Production of such well at a higher rate should be authorized only after notice and hearing.

IT IS THEREFORE ORDERED:

(1) That the applicant, Phillips Petroleum Company, is hereby authorized to institute a pressure maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New Mexico,

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CASE No. 3509

Order No. R-3181

to be designated as the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, by the injection of gas into the Abo Reef formation through the following-described wells in Lea County, New Mexico:

Shell Oil Company State "T" Well No. 6,
located 330 feet from the South line and
660 feet from the East line of Section 33,
Township 17 South, Range 35 East, NMPM, and

Standard of Texas Vac Edge Unit Well No. 11,
located 1650 feet from the North line and
1980 feet from the West line of Section 4,
Township 18 South, Range 35 East, NMPM.

(2) That Special Rules and Regulations governing the operation of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, Lea County, New Mexico, are hereby promulgated as follows:

SPECIAL RULES AND REGULATIONS
FOR THE
PHILLIPS PETROLEUM COMPANY
VACUUM ABO PRESSURE MAINTENANCE PROJECT

RULE 1. The project area of the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

LEA COUNTY, NEW MEXICO

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Section 33: SW/4 SW/4, E/2 SW/4, and SE/4

Section 34: SW/4

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Section 3: N/2 NW/4 and SW/4 NW/4

Section 4: N/2, N/2 S/2, and S/2 SW/4

Section 5: NE/4 NE/4, S/2 NE/4, and SE/4

RULE 2. The allowable for the Project shall be the sum of the allowables of the several wells within the project area, including those wells which are shut-in, curtailed, or used as injection wells. Allowables for all wells shall be determined in a manner hereinafter prescribed.

RULE 3. Allowables for injection wells may be transferred to producing wells within the project area, as may the allowables

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CASE No. 3509
Order No. R-3181

for producing wells which, in the interest of more efficient operation of the Project, are shut-in or curtailed because of high gas-oil ratio or are shut-in for any of the following reasons: pressure regulation, control of pattern or sweep efficiencies, or to observe changes in pressures or changes in characteristics of reservoir liquids or progress of sweep.

RULE 4. The allowable assigned to any well which is shut-in or which is curtailed in accordance with the provisions of Rule 3, which allowable is to be transferred to any well or wells in the project area for production, shall in no event be greater than its ability to produce during the test prescribed by Rule 6, below, or greater than the current top unit allowable for the pool during the month of transfer, whichever is less.

RULE 5. The allowable assigned to any injection well on a 40-acre proration unit shall be top unit allowable for the Vacuum-Abo Reef Pool.

RULE 6. The allowable assigned to any well which is shut-in or curtailed in accordance with Rule 3, shall be determined by a 24-hour test at a stabilized rate of production, which shall be the final 24-hour period of a 72-hour test throughout which the well should be produced in the same manner and at a constant rate. The daily tolerance limitation set forth in Commission Rule 502 I (a) and the limiting gas-oil ratio (2,000 to 1) for the Vacuum-Abo Reef Pool shall be waived during such tests. The project operator shall notify all operators offsetting the well, as well as the Commission, of the exact time such tests are to be conducted. Tests may be witnessed by representatives of the offsetting operators and the Commission, if they so desire.

RULE 7. The allowable assigned to each producing well in the Project shall be equal to the well's ability to produce or to top unit allowable for the Vacuum-Abo Reef Pool, whichever is less, provided that any producing well in the project area which directly or diagonally offsets a well outside the Vacuum Abo Unit Area producing from the same common source of supply shall not produce in excess of top unit allowable for the pool until such time as the well receives a substantial response to gas injection. When such a response has occurred, the well shall be permitted to produce up to two times top unit allowable for the pool. Production of such well at a higher rate shall be authorized only after notice and hearing. Each producing well shall be subject to the limiting gas-oil ratio (2,000 to 1) for the Vacuum-Abo Reef Pool, except that any well or wells within

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CASE No. 3509

Order No. R-3181

the project area producing with a gas-oil ratio in excess of 2,000 cubic feet of gas per barrel of oil may be produced on a "net" gas-oil ratio basis, which net gas-oil ratio shall be determined by applying credit for daily average gas injected, if any, into the Vacuum-Abo Reef Pool within the project area to such high gas-oil ratio well. The daily adjusted oil allowable for any well receiving gas injection credit shall be determined in accordance with the following formula:

$$A_{adj} = \frac{TUA \times F_a \times 2,000}{\frac{P_g - I_g}{P_o}}$$

where:

A_{adj} = the well's daily adjusted allowable

TUA = top unit allowable for the pool

F_a = the well's acreage factor

P_g = average daily volume of gas produced by the well during the preceding month, cubic feet

I_g = the well's allocated share of the daily average gas injected during the preceding month, cubic feet

P_o = average daily volume of oil produced by the well during the preceding month, barrels

In no event shall the amount of injected gas being credited to a well be such as to cause the net gas-oil ratio, $\frac{P_g - I_g}{P_o}$, to be less than 2,000 cubic feet of gas per barrel of oil produced.

RULE 8. Each month the project operator shall, within three days after the normal unit allowable for Southeast New Mexico has been established, submit to the Commission a Pressure Maintenance Project Operator's Report, on a form prescribed by the Commission, outlining thereon the data required, and requesting allowables for each of the several wells in the Project as well as the total Project allowable. The aforesaid Pressure Maintenance Project Operator's Report shall be filed in lieu of Form C-120 for the Project.

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CASE No. 3509
Order No. R-3181

RULE 9. The Commission shall, upon review of the report and after any adjustments deemed necessary, calculate the allowable for each well in the Project for the next succeeding month in accordance with these rules. The sum of the allowables so calculated shall be assigned to the Project and may be produced from the wells in the Project in any proportion except that no well in the Project which directly or diagonally offsets a well outside the Project producing from the same common source of supply shall produce in excess of two times top unit allowable for the pool.

RULE 10. The conversion of producing wells to injection, the drilling of additional wells for injection, and expansion of the project area shall be accomplished only after approval of the same by the Secretary-Director of the Commission. To obtain such approval, the project operator shall file proper application with the Commission, which application, if it seeks authorization to convert additional wells to injection or to drill additional injection wells shall include the following:

(1) A plat showing the location of proposed injection well, all wells within the project area, and offset operators, locating wells which offset the project area.

(2) A schematic drawing of the proposed injection well which fully describes the casing, tubing, perforated interval, and depth showing that the injection or gas will be confined to the Abo Reef formation.

(3) A letter stating that all offset operators to the proposed injection well have been furnished a complete copy of the application and the date of notification.

The Secretary-Director may approve the proposed injection well if, within 20 days after receiving the application, no objection to the proposal is received. The Secretary-Director may grant immediate approval, provided waivers of objection are received from all offset operators.

Expansion of the project area may be approved by the Secretary-Director of the Commission administratively when good cause is shown therefor.

RULE 11. That the subject pressure maintenance project shall be governed by the provisions of Rules 701, 702, and 703 of the Commission Rules and Regulations insofar as said rules are not inconsistent with the rules prescribed by this order.

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CASE No. 3509

Order No. R-3181

(3) That allowables to all wells in the Vacuum Abo Unit Area but outside the limits of the Vacuum Abo Pressure Maintenance Project Area as defined herein shall be assigned and produced in accordance with the applicable Commission Rules and Regulations.

(4) That jurisdiction of this cause is retained for the entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.

STATE OF NEW MEXICO
OIL CONSERVATION COMMISSION

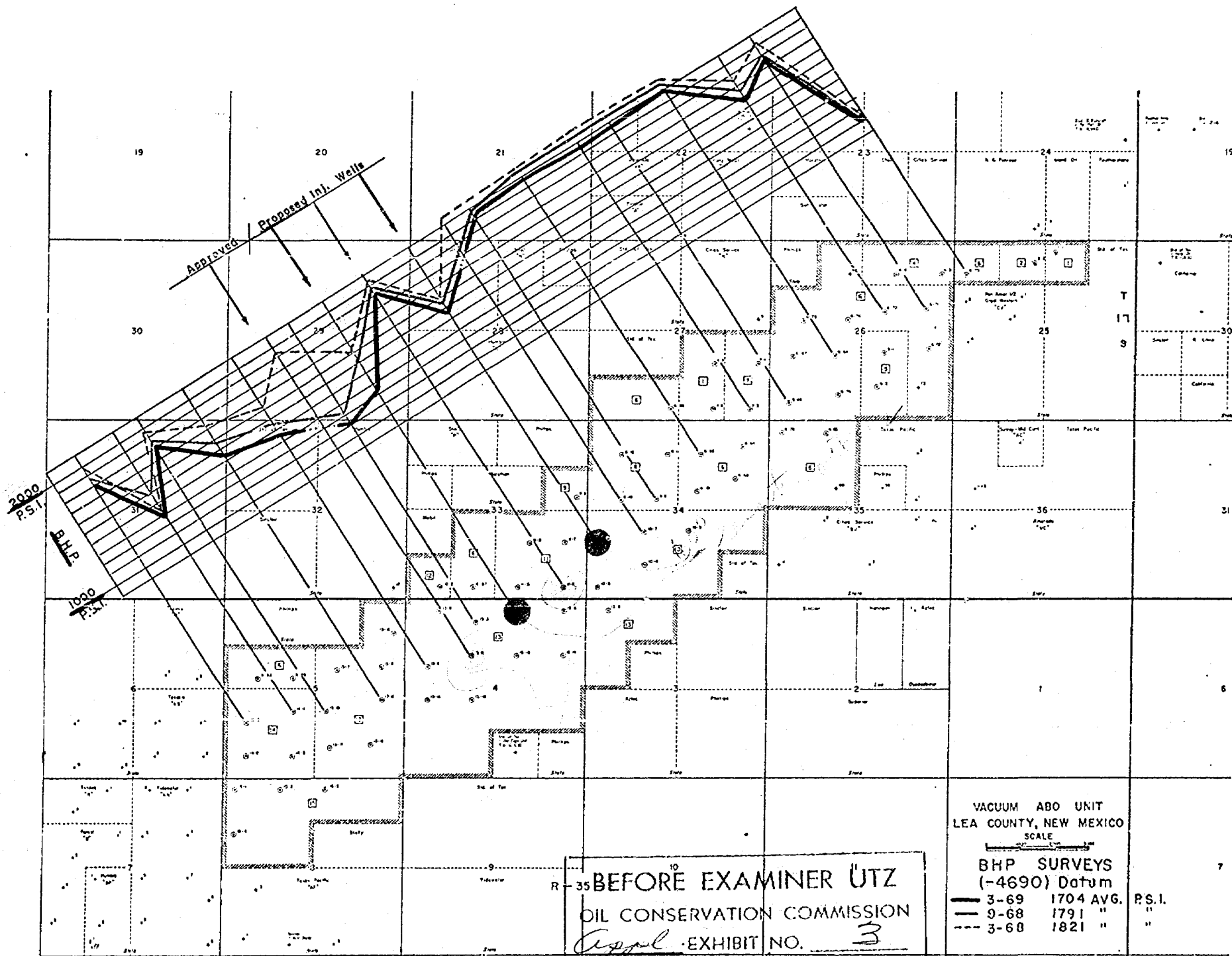
DAVID F. CARGO, Chairman

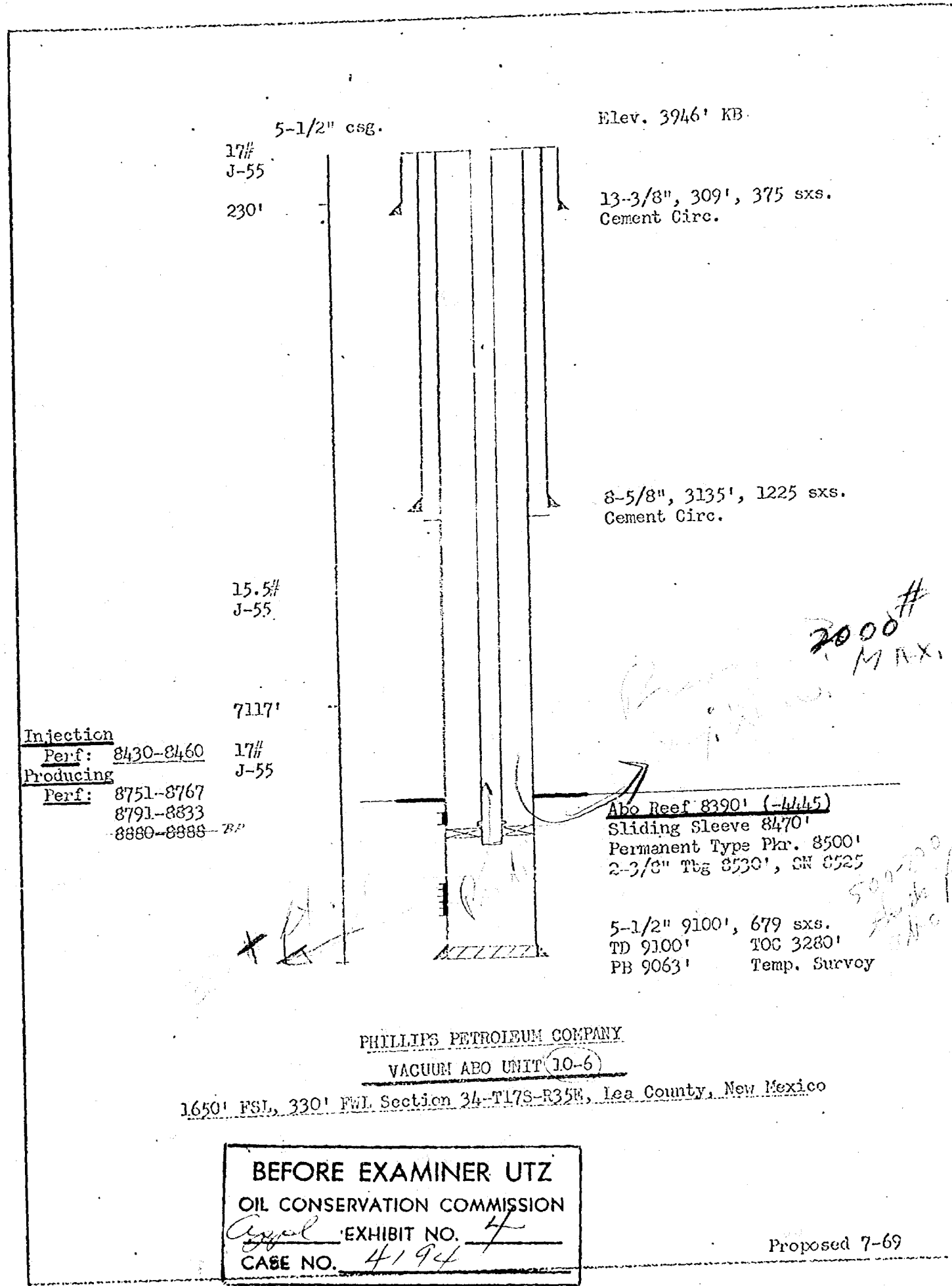
GUYTON B. HAYS, Member

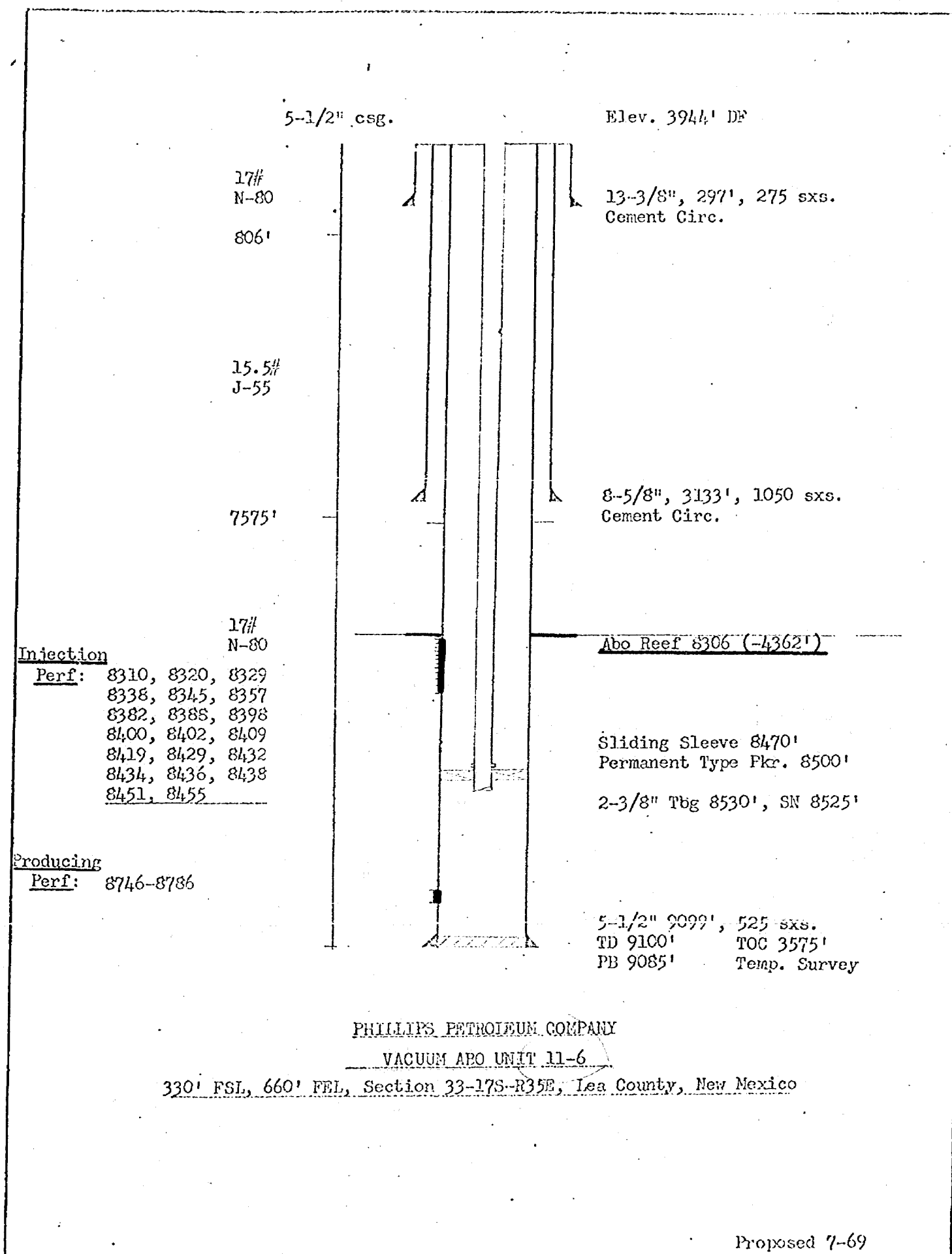
A. L. PORTER, Jr., Member & Secretary

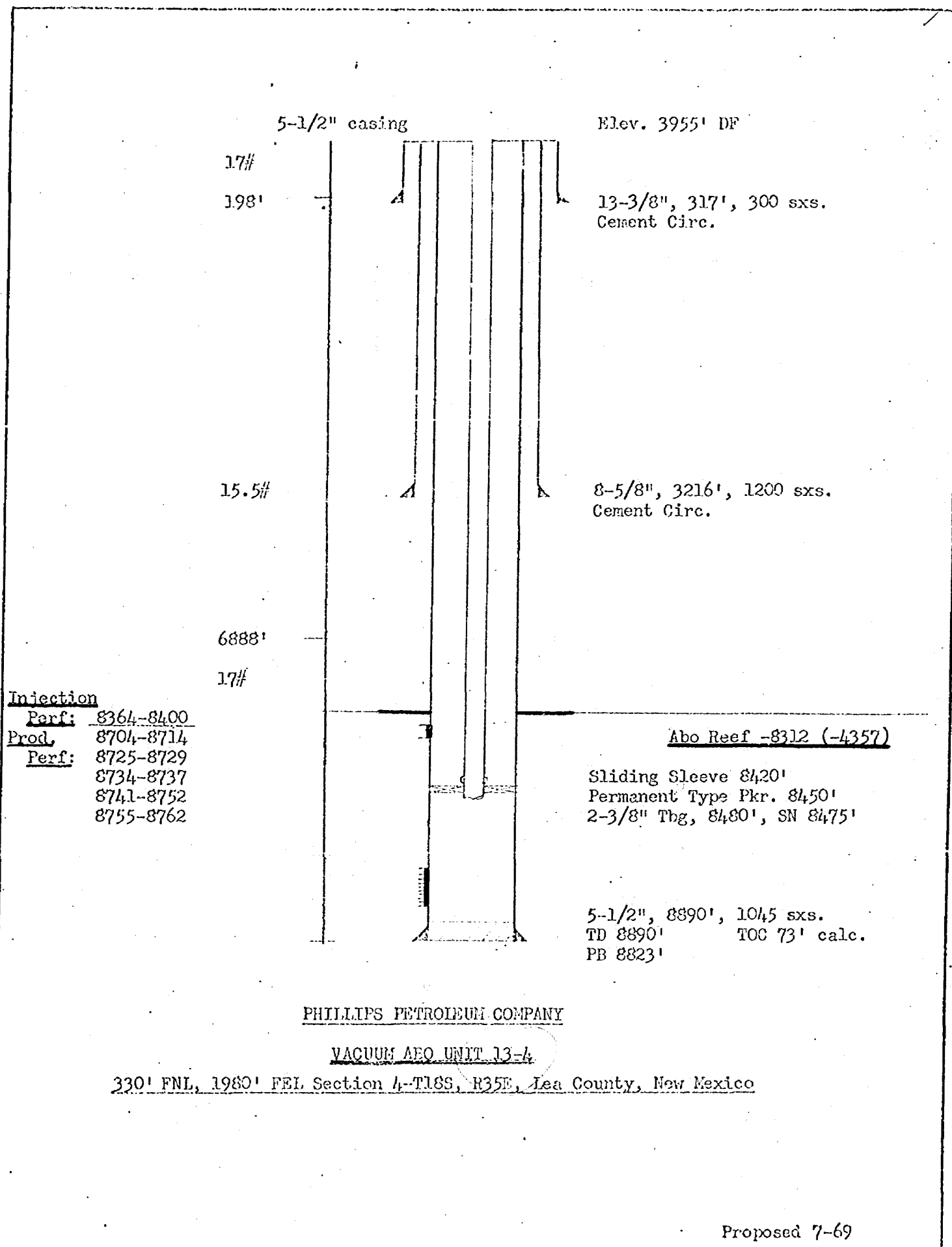
S E A L

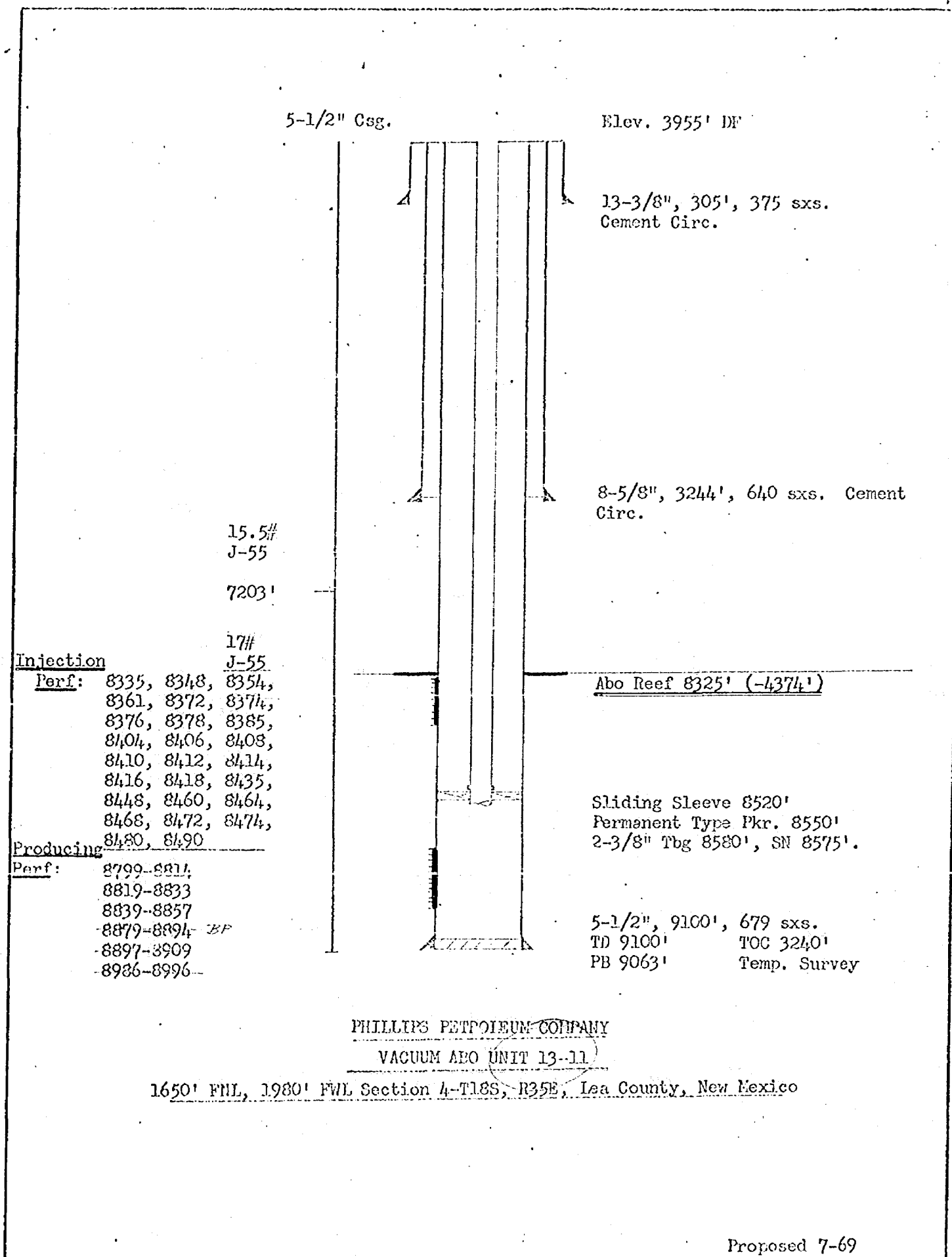
esr/











Form 206 11-63

PHILLIPS PETROLEUM COMPANY

Analysis Results Summary

Location Odessa, Texas

SS No. _____

Run No. _____

Date Run _____

Date Secured April, 1969

Time _____

Sampler's Ident. _____

A Sample of: Lee Plant Residue GasSecured from 30-day composite sampler County Lee State New Mexico
Location Buckeye Secured by _____

Purpose _____ °F; Pressure on Bomb _____ lbs./sq. in.; Bbls oil/day _____

Sampling Conditions: Atmos. Temp. _____ ; Weather conditions at time of sampling _____

Volume/day _____ PSIG: Line Pressure _____ PSIG. _____

Field Gas Pressure _____

Analysis 14.65 PSI at 60°F

	Mol. %	Liq. %		
Carbon Dioxide	2.12		Propane	Calc. G.P.M. 0.889
Oxygen	7.69		Iso-Butane	Calc. G.P.M. 0.007
Nitrogen	0.68		Nor-Butane	Calc. G.P.M. 0.006
Hydrogen Sulfide			Pentane +	Calc. G.P.M. 0.011
			Propane +	Calc. G.P.M. 0.913
			Test Car (Date _____)	1038
			B.T.U./_____ cu. ft. W.B.	0.704
			Calc. Specific Gravity	
			Calc. A.P.I. @ 60°F	
			Observed A.P.I. Av.	
			H ₂ S + CO ₂ by orsat	
			H ₂ S grains/100 cu. ft.	429
			Mercaptans gr/100 cu. ft.	
			Calc. Vap. Press. #/sq. in.	
			Reid Vap. Press. #/sq. in.	
			Cu. Ft. gas/Gal. Liq.	
			Calc. Gasoline Factors	
			26-70 Gasoline	0.
			Excess Butane	0.
			Excess Propane	0.
			Excess Ethane & Lighter	0.
				1.0000

Methane
Ethane
Propane
Iso-Butane
Nor-ButaneMethane
Ethane
Propane
Iso-Butane
Nor-ButaneIso-Pentane +
Nor-Pentane

Hexanes

Heptanes Plus

Total

Run by _____

Calculated by _____

Checked by _____

Approved by _____

Distribution:

Additional Data and Remarks:

BEFORE EXAMINER UTZ
OIL CONSERVATION COMMISSION
EXHIBIT NO. 9
CASE NO. 4194

PHILIPS PETROLEUM COMPANY
Gasoline Department
Analysis Results Summary

Location Odessa, Texas

SS No. 0-208-1
Run No. 373
Date Run 3-17-67
Date Secured 3-16-67
Time 3:30 PM CST
Sampler's Ident. _____

A Sample of: Abo Vacuum Unit Gas - Sta. #16912Secured from: Battery #1 O Meter Run - Vac Abo Tract 14Location: Meter Sta. #16912 County: Dea State: New MexicoPurpose: Eng. StudySecured by: Illens Jackson WicronSampling Conditions: Atmos. Temp. 69 °F; Pressure on Bomb _____

lbs./sq. in.; Bbls oil/day _____

Volume/day _____

Weather conditions at time of sampling _____

Field Gas Pressure _____

PSIG; Line Pressure _____

PSIG _____

Chromo Analysis 14.65 PSI at 60°F

	Mol. %	Liq. %	Propane	Calc. G.P.M.	
Carbon Dioxide	<u>1.16</u>		Iso-Butane	Calc. G.P.M.	<u>2.614</u>
Oxygen			Nor-Butane	Calc. G.P.M.	<u>.332</u>
Nitrogen	<u>2.96</u>		Pentane+	Calc. G.P.M.	<u>.914</u>
Hydrogen Sulfide	<u>.64</u>		Propane +	Calc. G.P.M.	<u>.750</u>
					<u>4.610</u>
Methane	<u>65.03</u>		Test Car (Date _____)		
Ethane	<u>14.80</u>		B.T.U./ _____ cu. ft. W.B.		<u>1363</u>
Propane	<u>9.53</u>		Calc. Specific Gravity		<u>.645</u>
Iso-Butane	<u>1.02</u>		Calc. A.P.I. @ 60°F		
Nor-Butane	<u>2.91</u>		Observed A.P.I. Av.		
Pentane	<u>.62</u>		H ₂ S + CO ₂ by orsat		<u>1.83</u>
Nor-Pentane	<u>.63</u>		H ₂ S grains/100 cu. ft.		<u>104 Grs.</u>
Hexanes	<u>.40</u>		Mercaptans gr/100 cu. ft.		
Heptanes Plus	<u>.30</u>		Calc. Vap. Press. #/sq. in.		
Total	<u>100.00</u>	<u>100.00</u>	Reid Vap. Press. #/sq. in.		
			Cu. Ft. gas/Gal. Liq.		
			Calc. Gasoline Factors		

Run by: Yagoe Calculated by: _____Checked by: Ingos Approved by: _____

26-70 Gasoline 0.
Excess Butane 0.
Excess Propane 0.
Excess Ethane & Lighter 0.
1.0000

Additional Data and Remarks: Intake Press 14.65
Treater Press 14.65
Flaring Gas
Quarterly Test Car GPM 1.00

Distribution:

H. R. Harris (r) B. L. Jones
C. G. Hancock (r) Cent. File
C. Edge (r) M. H. Anderson
F. C. Morgan
Lab Files

Gasoline Department
Analysis Results SummaryLocation Odessa, TexasSS NO. 379
Run No. 379
Date Run 3-17-67
Date Secured 3-16-67
Time 4:06 PM CST
Sampler's Ident. _____A Sample of: Abo Vacuum Unit Gas Station #17026Secured from Meter run 17026 S.T.V.M. - Vac Abo Tract 13 Barren # 2
Location Meter Sta. 17026 County Lea State New Mexico
Purpose Eng. Study Secured by Jackson-Weisman-Williams
Sampling Conditions: Atmos. Temp. 70 °F; Pressure on Bomb lbs./sq. in.; Bbls oil/day
Volume/day _____; Weather conditions at time of sampling _____
Field Gas Pressure _____ PSIG; Line Pressure _____ PSIG.

Chromo

Analysis: 14.65 PSI at 60°F

	Mol. %	Liq. %		
Carbon Dioxide	1.17		Propane	Calc. G.P.M. 2.334
Oxygen			Iso-Butane	Calc. G.P.M. .316
Nitrogen	3.21		Nor-Butane	Calc. G.P.M. .895
Hydrogen Sulfide	1.73		Pentane+	Calc. G.P.M. .912
			Propane +	Calc. G.P.M. 4.457
Methane	65.46		Test Car (Date _____)	
Ethane	12.35		B.T.U./_____ cu. ft. W.B.	1343
Propane	8.51		Calc. Specific Gravity	.849
Iso-Butane	.97		Calc. A.P.I. @ 60°F	
Nor-Butane	2.85		Observed A.P.I. Av.	
iso-Pentane	.69		H ₂ S + CO ₂ by orsat	3.27
Nor-Pentane	.73		H ₂ S grains/100 cu. ft.	1028 grs.
Hexanes	.19		Mercaptans gr/100 cu. ft.	
Heptanes Plus	.51		Calc. Vap. Press. #/sq. in.	
Total	100.00	100.00	Reid Vap. Press. #/sq. in.	
Run by <u>Magee</u>	Calculated by _____		Cu. Ft. gas/Gal. Liq.	
Checked by <u>Magee</u>	Approved by _____		Calc. Gasoline Factors	
			26-70 Gasoline	0.
			Excess Butane	0.
			Excess Propane	0.
			Excess Ethane & Lighter	0.
				1.0000

Additional Data and Remarks: Intake press. 39" -
Quarterly test can. GFI is .80Distribution:
H. R. Harris (r) B. L. Jones
C. G. Mcneart (r) C. Files
C. Edge (r) H. H. Anderson
F. C. Morgan
Lab Files

Form 206 3-61

PHILLIPS PETROLEUM COMPANY
Gasoline Department
Analysis Results Summary

Location Odessa, Texas

SS No. 0-502-4
Run No. 381
Date Run 3-17-57
Date Secured 3-16-57
Time 4:33 PM CST
Sampler's Ident. _____

A Sample of Abso Vacuum Unit Gas Blwy #3 - Sta. #16891

Secured from Blwy #3, Motor Sta. #16891 - Vac Abso Tract 10

Location Motor Sta. 16891 County Lea State New Mexico

Purpose Eng. Study Secured by _____

Sampling Conditions: Atmos. Temp. 70° °F; Pressure on Bomb _____ lbs./sq. in.; Bbls oil/day _____

Volume/day _____; Weather conditions at time of sampling _____

Field Gas Pressure _____ PSIG; Line Pressure _____ PSIG.

Chromo

Analysis 14.65 PSI at 60°F

	Mol. %	Liq. %		
Carbon Dioxide	1.93		Propane	Calc. G.P.M. 2.709
Oxygen			Iso-Butane	Calc. G.P.M. .358
Nitrogen	2.66		Nor-Butane	Calc. G.P.M. .998
Hydrogen Sulfide	2.17		Pentane-1	Calc. G.P.M. .950
			Propane +	Calc. G.P.M. 5.015
Methane	61.51		Test Cor (Date _____	
Ethane	14.83		B.T.U./_____ cu. ft. W.B.	1384
Propane	9.88		Calc. Specific Gravity	.633
Iso-Butane	3.10		Calc. A.P.I. @ 60°F	
Nor-Butane	3.18		Observed A.P.I. Av.	
n-Pentane	.71		H ₂ S + CO ₂ by orsat	4.18
Nor-Pentane	.71		H ₂ S grains/100 cu. ft.	1560
Hexanes	.46		Mercaptans gr/100 cu. ft.	
Heptanes Plus	.53		Calc. Vap. Press. #/sq. in.	
Total	100.00	100.00	Reid Vap. Press. #/sq. in.	
			Cu. ft. gas/Gal. Liq.	
			Calc. Gasoline Factors	

Run by Magee

Calculated by _____

Checked by Magee

Approved by _____

26-70 Gasoline 0.
Excess Butane 0.
Excess Propane 0.
Excess Ethane & Lighter 0.
1.0000

Additional Data and Remarks: Intake Press 37%
Quarterly test car GPM = .860

Distribution:

H. R. Harris (r) B. L. Jones
C. G. Baheart (r) Cent. Files
C. Edge (r) H. H. Anderson
F. C. Morgan
Ind Files

Form 706 3-61

PHILLIPS PETROLEUM COMPANY
Gasoline Department
Analysis Results Summary

Location Odessa, Texas

SS No. 0-285-3
Run No. 380
Date Run 3-17-57
Date Secured 3-16-57
Time 5:00 PM CST
Sampler's Ident. _____

A Sample of: Abu Vacuum Unit Gas - Sta. #17034

Secured from Meter Sta. #17034 - Vac Abu Tract 6 Butler et al
Location Meter Sta. #17034 County Lea State New Mexico
Purpose Eng. Study Secured by: _____
Sampling Conditions: Atmos. Temp. 76 °F; Pressure on Bomb _____ lbs./sq. in.; Bbls oil/day _____
Volume/day _____; Weather conditions at time of sampling _____
Field Gas Pressure _____ PSIG; Line Pressure _____ PSIG.

Chromo

Analysis 14.65 PSI at 60°F

	Mol. %	Liq. %		
Carbon Dioxide	1.95		Propane	Calc. G.P.M. 2.989
Oxygen			Iso-Butane	Calc. G.P.M. .394
Nitrogen	2.08		Nor-Butane	Calc. G.P.M. 1.130
Hydrogen Sulfide	3.05		Pentane-I-	Calc. G.P.M. 1.081
			Propane -I-	Calc. G.P.M. 5.594
Methane	58.64		Test Car (Date _____	
Ethane	15.80		B.T.U./ _____ cu. ft. W.B.	1435
Propane	10.99		Calc. Specific Gravity	.915
Iso-Butane	1.21		Calc. A.P.I. @ 60°F	
Nor-Butane	3.60		Observed A.P.I. Av.	
o-Pentane	.80		H ₂ S + CO ₂ by orsat	5.0%
Nor-Pentane	.82		H ₂ S grains/100 cu. ft.	1920
Hexanes	.50		Mercaptans gr/100 cu. ft.	
Heptanes Plus	.65		Calc. Vap. Press. #/sq. in.	
Total	100.00	100.00	Reid Vap. Press. #/sq. in.	
			Cu. Ft. gas/Gal. Liq	
			Calc. Gasoline Factors	

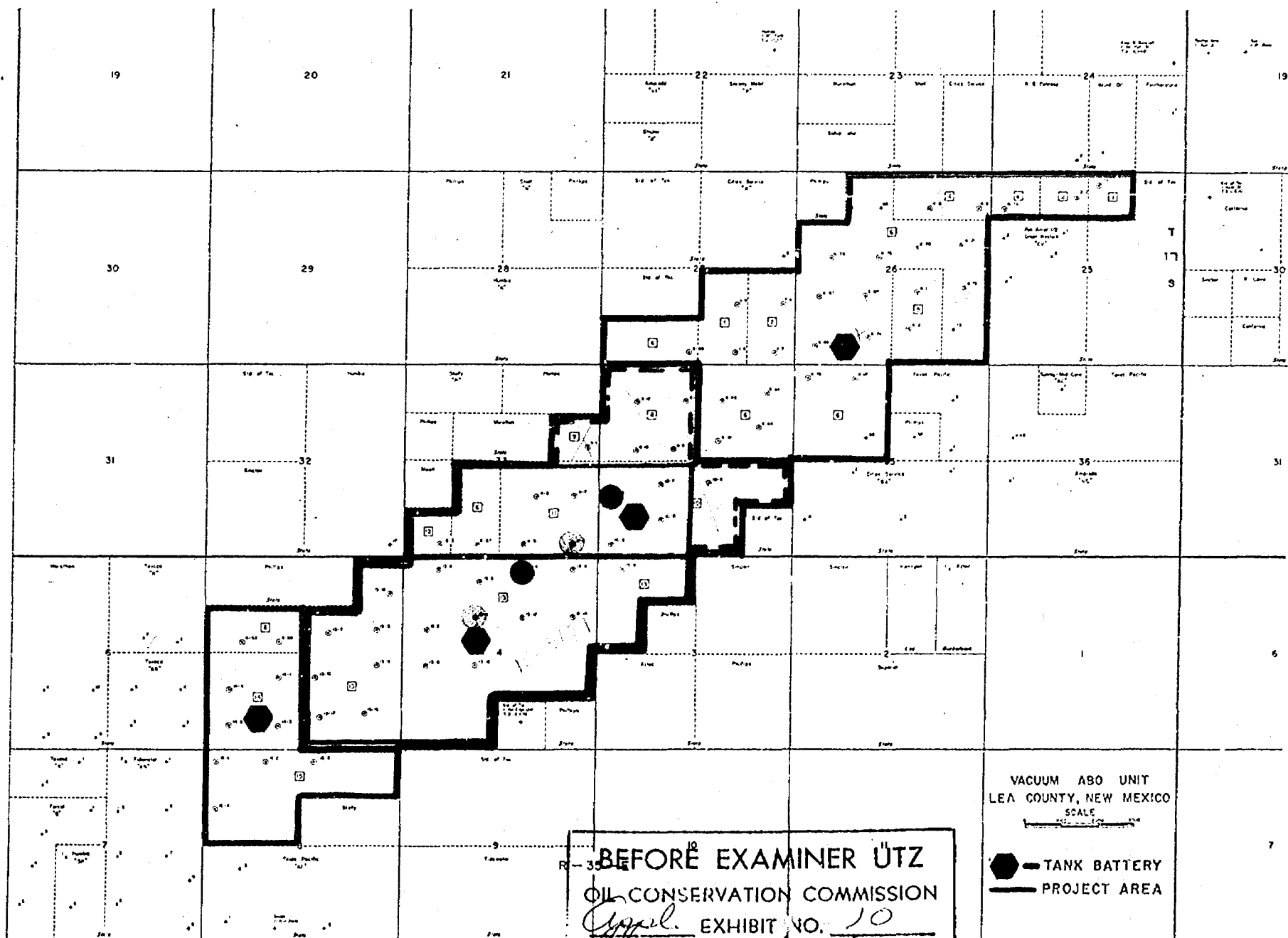
Run by Magee Calculated by _____Checked by Magee Approved by _____

26-70 Gasoline 0.
Excess Butane 0.
Excess Propane 0.
Excess Ethane & Lighter 0.
1.0000

Additional Data and Remarks Intake Press 37#
Quarterly Test Gas GPM = .90

Distribution:

H. R. Harris (r) B. L. Jones
C. G. McKeart (r) C. Files
C. Edgar (r) M. H. Anderson
F. C. Morgan
Lab Files



County, _____

Township _____ Range _____

Township _____ Range _____

Township _____ Range _____

Township _____ Range _____

Form 104—(Four on Township)

35

6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36
6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12
18	17	16	15	14	13	18	17	16	15	14	13
19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36

JASON W. KELLAHIN
ROBERT E. FOX

KELLAHIN AND FOX
ATTORNEYS AT LAW
54 1/2 EAST SAN FRANCISCO STREET
POST OFFICE BOX 1789
SANTA FE, NEW MEXICO 87501

TELEPHONE 982-4315
AREA CODE 505

August 1, 1969

4 AM 8 14
69 AUG 4

Case 4194

New Mexico Oil Conservation Commission
Post Office Box 2088
Santa Fe, New Mexico

Gentlemen:

Enclosed, in triplicate, is the application of Phillips Petroleum Company for an amendment to Commission Order No. R-3181 governing the operation of the Vacuum Abo Unit Pressure Maintenance Project.

It is requested that this application be set for hearing on the Commission's August 27 examiner hearing.

Yours very truly,

Jason W. Kellahin

JASON W. KELLAHIN

jwk;peg
Enc. as stated

DOCKET MAILED

Date 8/15/69

59 AUG 4 AM 8 14

BEFORE THE

OIL CONSERVATION COMMISSION OF NEW MEXICO

IN THE MATTER OF THE APPLICATION
OF PHILLIPS PETROLEUM COMPANY FOR
AMENDMENT OF COMMISSION ORDER NO.
R-3181

Case 4194

A P P L I C A T I O N

Comes now Phillips Petroleum Company and applies to the Oil Conservation Commission of New Mexico for an amendment to the provisions of Commission Order No. R-3181 which established Special Rules and Regulations governing the operation of the Vacuum Abo Unit Pressure Maintenance Project, Vacuum Abo Reef Pool, Lea County, New Mexico, to make the following provisions:

- ✓ 1. Authorization for the injection of gas into the Abo Reef Formation through the following described wells:
 - a. Vacuum Abo Unit Battery No. 2, Tract 13, Well No. 4, located in Unit B, Section 4, Township 18 South, Range 35 East, N.M.P.M.
 - b. Vacuum Abo Unit Battery No. 3, Tract 10, Well No. 6, Located in Unit L, Section 34, Township 17 South, Range 35 East, N.M.P.M.
- ✓ 2. Authorization to complete Vacuum Abo Pressure Maintenance Project gas injection wells for simultaneous injection of gas into the upper section of the Abo Reef while producing the lower section of the Abo Reef.
- ✓ 3. Authorization to equip Vacuum Abo Pressure Maintenance Project gas injection wells for casing-tubing annulus injection.
- ✓ 4. Amendment of Rule 1 of the Special Rules and Regulations for the Vacuum Abo Pressure Maintenance Project to enlarge the project area to include:

Township 17 South, Range 35 East, N.M.P.M.

Section 33: SE/4 NE/4

Section 34: NW/4, N/2 SE/4, and SW/4 SE/4

In support whereof the applicant would show the Commission that approval of the foregoing amendments to Commission Order No. R-3181 will result in more efficient operation of the Vacuum Abo Unit Pressure Maintenance Project and said amendments are in the interest of conservation and the prevention of waste.

WHEREFORE Applicant prays that this application be set for hearing before the Commission or the Commission's duly appointed examiner, and that after notice and hearing as required by law the Commission enter its order approving the amendments as prayed for.

Respectfully submitted,

PHILLIPS PETROLEUM COMPANY

By Jason W. Kellahin
KELLAHIN & FOX
Post Office Box 1769
Santa Fe, New Mexico

ATTORNEYS FOR APPLICANT

DRAFT

GMH/esr
9-8-69

BEFORE THE OIL CONSERVATION COMMISSION
OF THE STATE OF NEW MEXICO

IN THE MATTER OF THE HEARING
CALLED BY THE OIL CONSERVATION
COMMISSION OF NEW MEXICO FOR
THE PURPOSE OF CONSIDERING:

CASE No. 4194

Order No. R-3181-A

DMA
AM
APPLICATION OF PHILLIPS PETROLEUM COMPANY
FOR AN AMENDMENT OF ORDER NO. R-3181 AND
DUAL COMPLETIONS, LEA COUNTY, NEW MEXICO.

ORDER OF THE COMMISSION

BY THE COMMISSION:

This cause came on for hearing at 9 a.m. on August 27, 1969,
at Santa Fe, New Mexico, before Examiner Elvis A. Utz.

NOW, on this _____ day of September, 1969, the Commission, a
quorum being present, having considered the testimony, the record,
and the recommendations of the Examiner, 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 Order No. R-3181, dated January 18, 1967, authorized
the applicant, Phillips Petroleum Company, to institute a pressure
maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef Pool,
Lea County, New Mexico, through the following-described wells in
Lea County, New Mexico:

- (a) Shell Oil Company State "T" Well No. 6 (now
Vacuum Abo Unit Tract 11 Well No. 6), located ✓
in Unit P of Section 33, Township 17 South,
Range 35 East, NMPM.
- (b) Standard of Texas Vac Edge Unit Well No. 11 ✓
(now Vacuum Abo Unit Tract 13 Well No. 11),
located in Unit F of Section 4, Township 18
South, Range 35 East, NMPM.

(3) That the applicant seeks amendment of said Order No. R-3181
to permit the injection of gas through two additional wells located

in Unit L of Section 34, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico, and Unit B of Section 4, Township 18 South, Range 35 East, NMPM, Lea County, New Mexico, and the expansion of said project area to include the SE/4 NE/4 of Section 33 and the NW/4, N/2 SE/4, and SW/4 SE/4 of Section 34, Township 17 South, Range 35 East, NMPM, Lea County, New Mexico.

(4) That the applicant further seeks authority to dually complete the four above-described wells in such a manner as to permit the production of oil from the lower section of the Abo Reef through tubing and the injection of gas for pressure maintenance purposes into the upper section of the Abo Reef through the casing-tubing annulus, with separation of sections by packers.

(5) That the mechanics of the proposed dual completions are feasible and in accord with good conservation practices.

the
(6) That/injection of gas through two additional wells and the expansion of the project area as requested are in the interest of conservation and should result in greater ultimate recovery of oil, thereby preventing waste.

(7) That amendment of Order No. R-3181 to permit approval of the two additional wells for gas injection, the dual completion of all gas injection wells, and expansion of the subject project area will prevent the drilling of unnecessary wells and otherwise prevent waste and protect correlative rights.

IT IS THEREFORE ORDERED:

(1) That Order (1) of Order No. R-3181 is hereby amended to read in its entirety as follows:

"(1) That the applicant, Phillips Petroleum Company, is hereby authorized to operate a pressure maintenance project in its Vacuum Abo Unit Area, Vacuum-Abo Reef Pool, Lea County, New Mexico, to be designated as the Phillips Petroleum Company Vacuum

Abo Pressure Maintenance Project, by the injection of gas into the Abo Reef formation through four wells to be completed in such a manner as to permit the production of oil from the lower section of the Abo Reef through tubing and the injection of gas into the upper section of the Abo Reef through the casing-tubing annulus as follows:

TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM

Vacuum Abo Unit Tract 11 Well No. 6, located in Unit P of Section 33 - injection of gas in the perforated interval from 8310 feet to 8455 feet, production of oil from the perforated interval from 8746 feet to 8786 feet, with separation of sections by a packer set at 8500 feet; ✓

Vacuum Abo Unit Tract 10 Well No. 6, located in Unit L of Section 34 - injection of gas in the perforated interval from 8430 feet to 8460 feet, production of oil from the perforated interval from 8751 feet to 8833 feet, with separation of sections by a packer set at 8500 feet; ✓

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM

Vacuum Abo Unit Tract 13 Well No. 4, located in Unit B of Section 4 - injection of gas in the perforated interval from 8364 feet to 8400 feet, production of oil from the perforated interval from 8704 feet to 8762 feet, with separation of sections by a packer set at 8450 feet; ✓

Vacuum Abo Unit Tract 13 Well No. 11, located in Unit F of Section 4 - injection of gas in the perforated interval from 8335 feet to 8490 feet, production of oil from the perforated interval from 8799 feet to 8857 feet, with separation of sections by a packer set at 8550 feet." ✓

(2) That Rule 1 of the Special Rules and Regulations for the Phillips Petroleum Company Vacuum Abo Pressure Maintenance Project is hereby amended to read in its entirety as follows:

"RULE 1. The project area of the Phillips Petroleum Company Abo Pressure Maintenance Project, hereinafter referred to as the Project, shall comprise the area described as follows:

-4-
CASE No. 4194
Order No. R-3181-A

LEA COUNTY, NEW MEXICO
TOWNSHIP 17 SOUTH, RANGE 35 EAST, NMPM
Section 33: SW/4 SW/4, E/2 SW/4, SE/4,
and SE/4 NE/4 ✓
Section 34: W/2, N/2 SE/4, and SW/4 SE/4"

(3) That jurisdiction of this cause is retained for the
entry of such further orders as the Commission may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove
designated.

TOWNSHIP 18 SOUTH, RANGE 35 EAST, NMPM
Section 3: N/2 NW/4 and SW/4 NW/4
Section 4: N/2, N/2 S/2, and S/2 SW/4
Section 5: NE/4 NE/4, S/2 NE/4, and SE/4 ✓

CASE 4195: Appli. of CONTINENTAL
FOR EIGHT NON-STANDARD GAS PRO.
UNITS & A NON-STANDARD GAS LOC.