

CASE No.

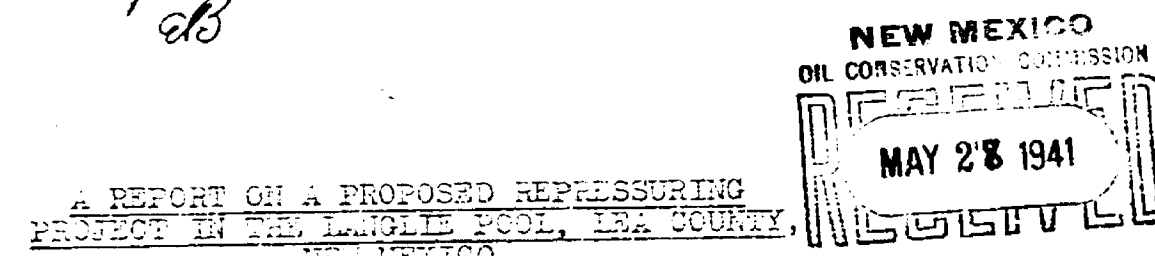
27

Large Exhibits

OCD

Case 27
Exhibits

Revised 4/1/36



The area to be discussed in this Report surrounds and includes the Culbertson & Irwin, Inc., Liberty Royalties lease located in the northeast part of the Eagle Pool, Lea County, New Mexico. This lease is described as the West One-half of the West One-half (1/2 of 1/2) of Section No. 3, Township 25-South, Range 9-East, 100 Acres, and is shown on Figure 1 of this Report.

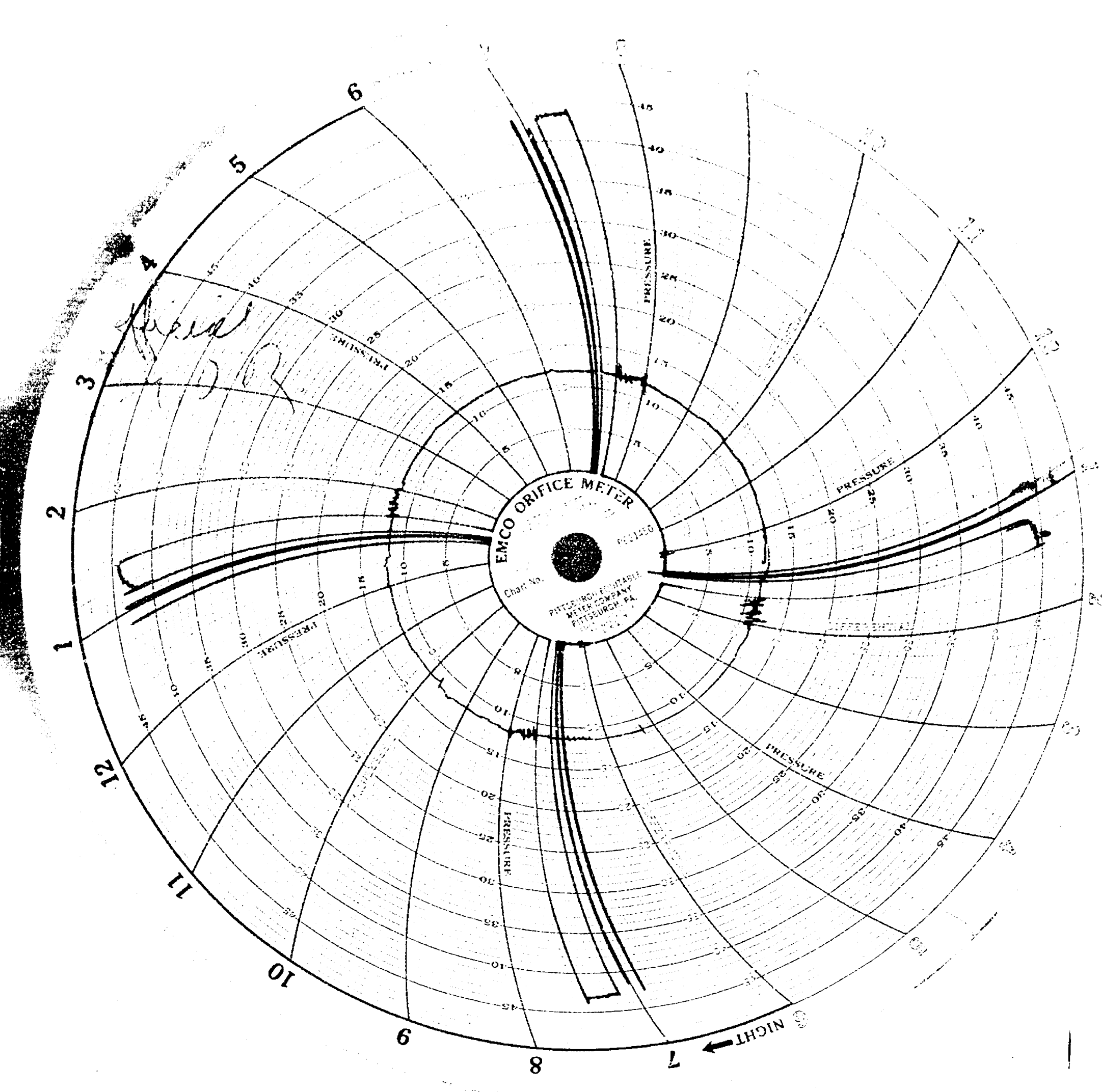
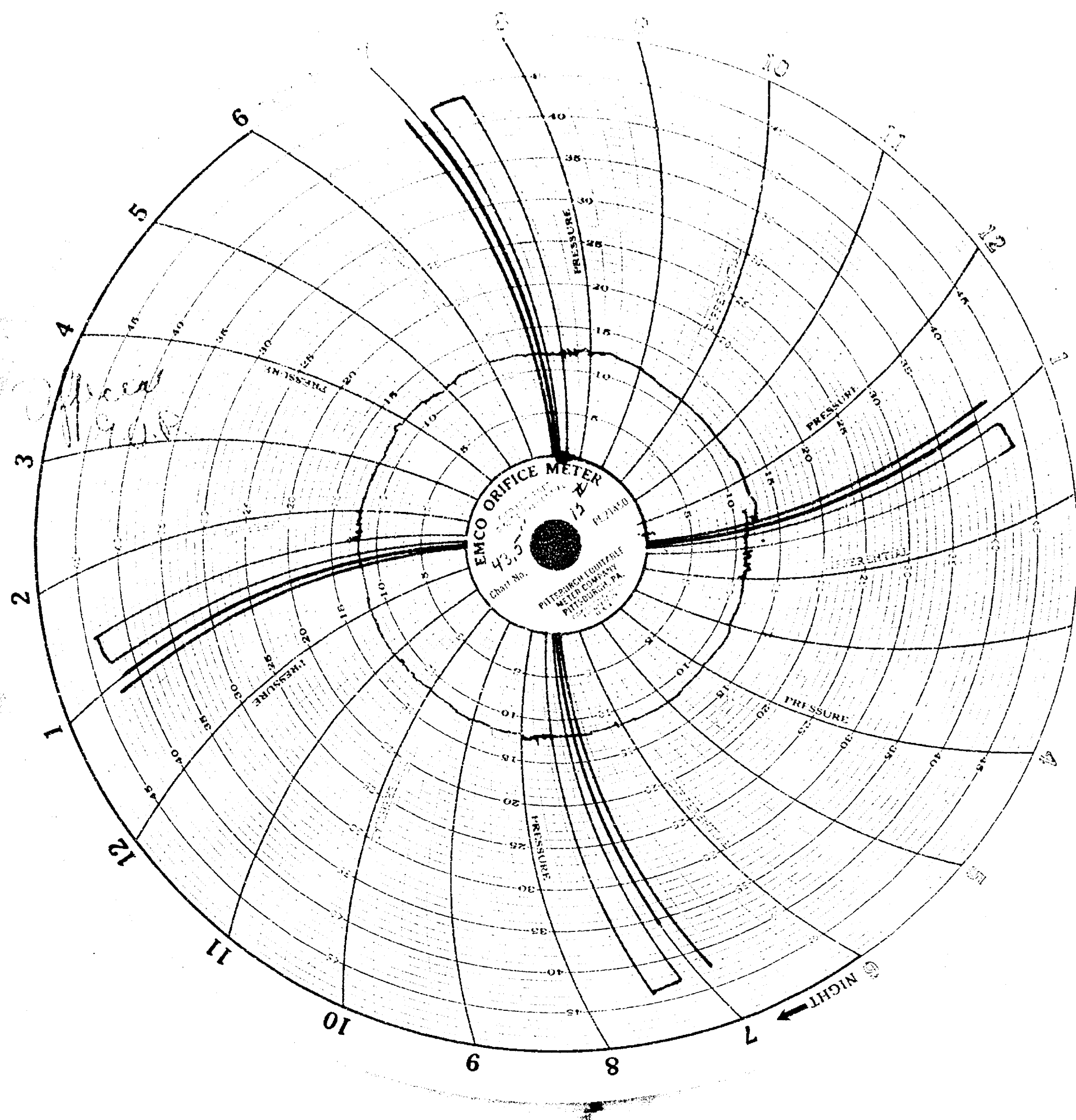
There are three producing wells on this lease. The #1 well is located 330' from the North line and 990' from the East line of the lease. This well was completed on March 25, 1935, at a total depth of 3945' for initial production of 300 barrels daily. Later this well was deepened to 4100' and completed as a natural producer, however, production declined and on April 23, 1941, the well was shut down due to the fact of solidified glycerin from 3885-4100'.

The #2 well is located 1650' from the North line and 1650' from the East line of the lease. This well was drilled to a total depth of 3125' and completed on May 19, 1939, for a natural production of 270 barrels daily. This well has been shut down with 150 gals. of solidified glycerin from 3385-3450'.

The #3 well is located 330' from the South line and 990' from the East line of the lease. This well was drilled to a total depth of 3125' and was completed on July 5, 1939, for 150 barrels daily after shutting with 150 gals. of glycerin from 3385'.

The Lardie and Martin Pools are located on the West One-half of a sub-surface structure which has a Northwest-Southeast strike. The producing zone is sandstone and is the lower member. There are several individual sand zones producing in this field. The sandstone member is characterized by approximately 100' and the oil water contact is approximately 130'. The structure in the individual parts is controlled by structure, variation and thickness of the sand content.

Figure 2 of this Report shows the approximate outline of the productive parts of the lease which is producing in the three wells on the Liberty Royalties lease. According to Figure 2, it shows the productive area of the lease and is approximately the West One-half of the West One-half of the section and is controlled by the structure of the sand member.



The pay section apparently grades into shale and becomes contaminated and unproductive on the South end of the Liberty Royalties lease. This conclusion is based on the type of section encountered in the Culbertson & Irwin, Inc., #1 Humphrey dry hole located 1950' from the West line and 660' from the South line of Section 3, Township 25-South, Range 9-East, and the two dry holes drilled in the Southeast One-fourth of the Southeast One-fourth (1/4 of 1/4) of Section No. 4, Township 25-South, Range 9-East. As shown on the structural map, Figure 3, these tests were well located structurally and would have made producers if the pay section had not been contaminated with shale and silt. This pay section, however, becomes a clean sand again in the southeast and as is shown on Figure 2, is the producing zone in the wells located on the West One-half (1/2) of Section No. 10, Township 25-South, Range 9-East.

The sand producing in the Liberty Royalties wells produces to the Northwest and on a strike with these wells for a distance of approximately two miles. At this point the axis of the structure takes more of a Northwest-Southeast strike and the Eastern limits of the Liberty Royalties sand zone become too high to produce oil and is included in the gas cap area, and becomes bentonitic and non-porous down dip.

It is our opinion that a repressuring or pressure maintenance program covering all or a portion of a sand zone of this nature would greatly increase the ultimate recovery, and lower the lifting cost over a period of years.

As shown on Figure 2, the Liberty Royalties lease is located on the South end of the North lease of this particular sand zone. It is our opinion that if a well on the South end of this lease is used as an input well, the input gas would be controlled in every direction except in the direction of the producing wells. Thus an increase in pressure and production should be noted in wells nearest the input well.

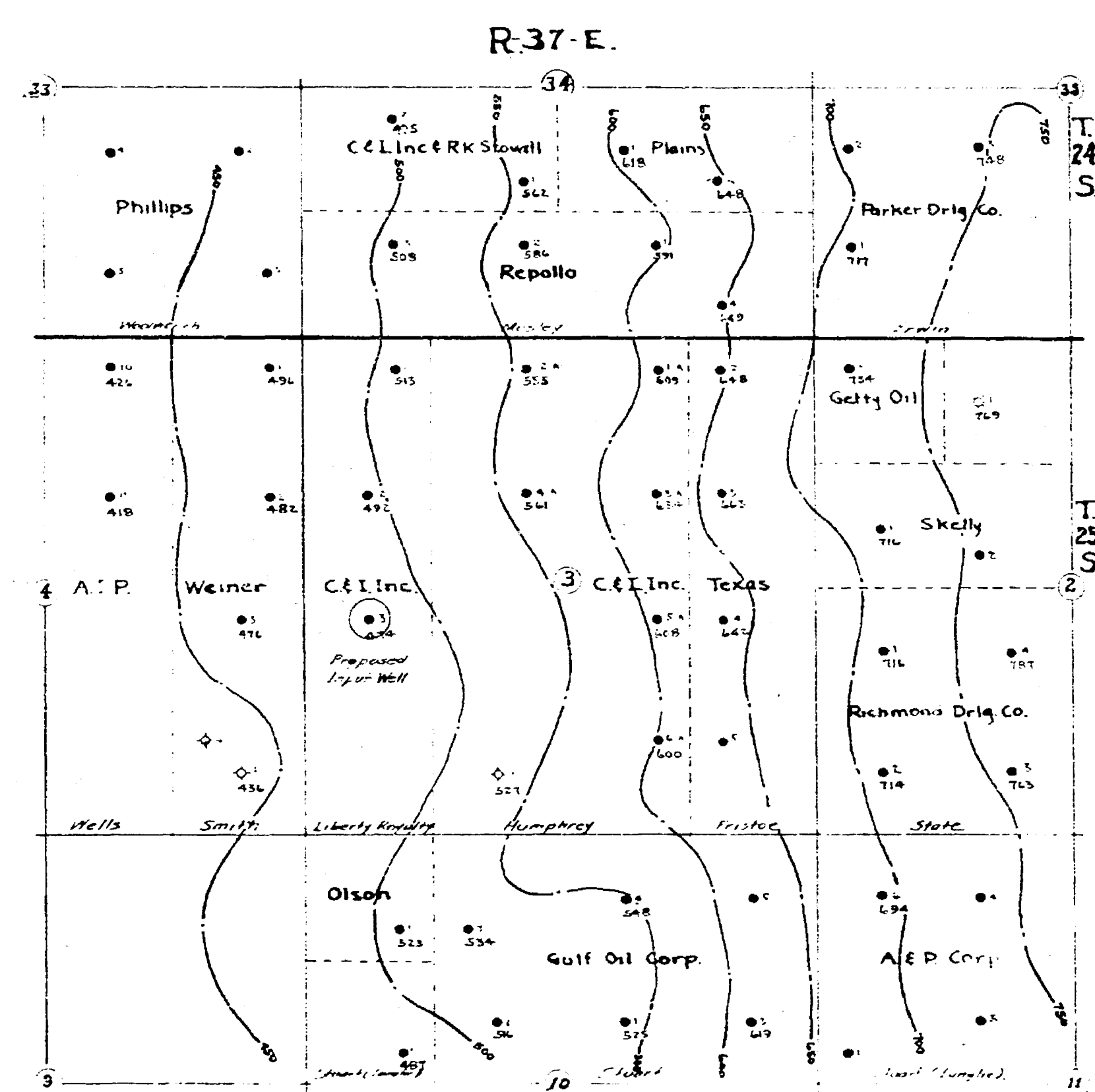
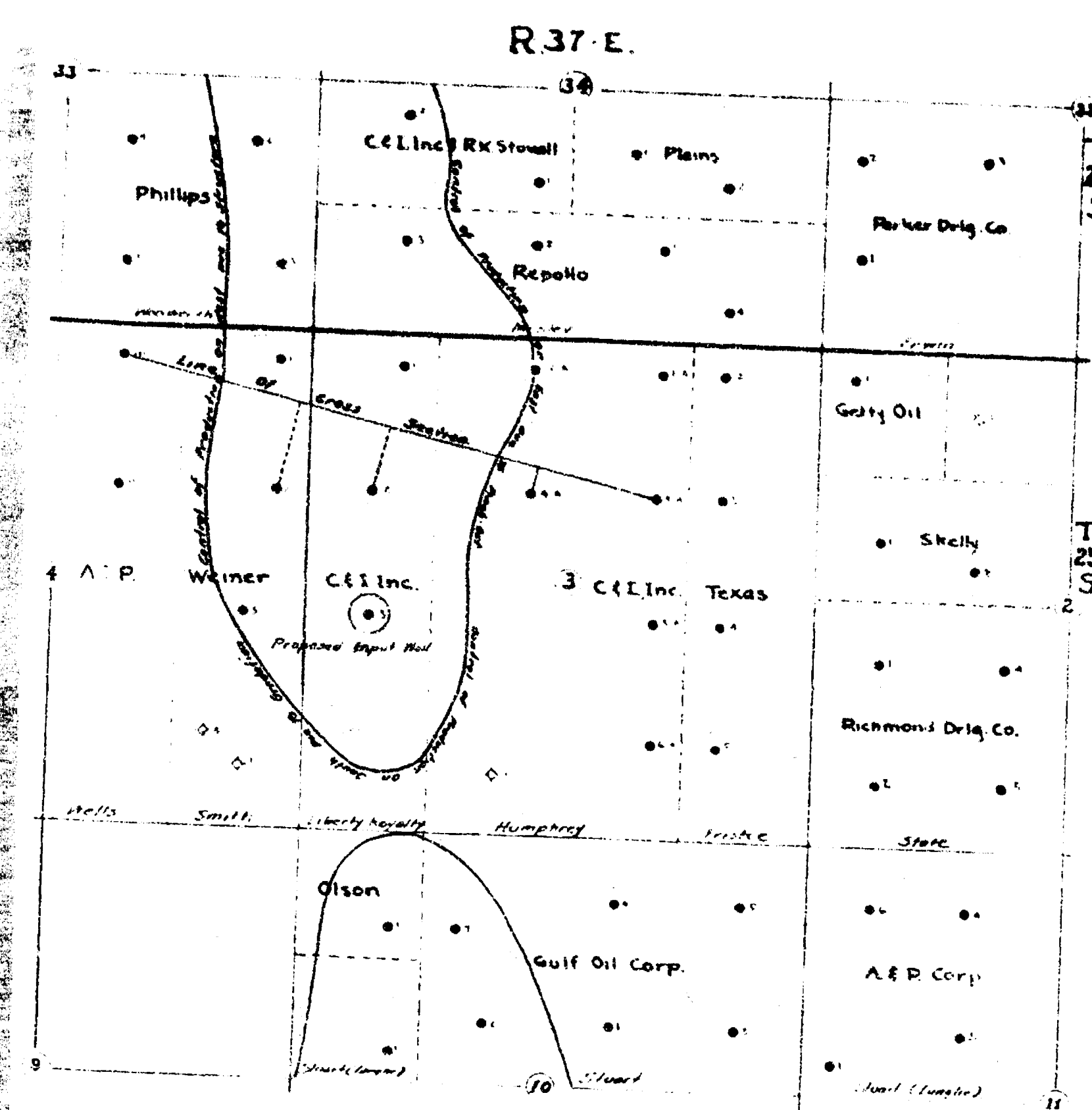
Referring to Figure 2 and using the Culbertson & Irwin, Inc., #2 Liberty Royalties well as the input well, it will be seen that the wells that would be expected to be first affected would be the Culbertson & Irwin, Inc., #1 and #2 Liberty Royalties and the Walter #1, #2 and #3 wells. Assuming these three are similar wells and as shown on Figure 2, are producing from the same sand, it would appear that the utilization of these three leases would be the ideal manner in which to operate such a project. However, due to the fact that this is an experiment we do not wish to utilize wells we are entitled that the project will be successful. However, the owners of the Walter-Smith lease are willing to cooperate with us on this project and have given us permission to check these wells from time to time with reference to production, bottom hole pressure and gas-oil ratio change.

By a periodic check of Walter-Smith wells and Culbertson & Irwin, Inc., Liberty Royalties wells, we should be able to ascertain the results of the input gas on the production and operating of the various wells, and whether it will be practical to operate the leases separately or as a unit.

In submitting this Report we beg that the Oil Conservation Commission of New Mexico:

- (1) Authorize Culbertson & Irwin, Inc., to convert their #2 Liberty Royalties well from a producing oil well to an input gas well for the purpose of repressuring or repressuring the sand zone which is producing on this lease.
- (2) That the monthly allowable be allocated to the lease as a whole, instead of to the individual wells, with authority to produce the acre in the most efficient manner.

Very truly,
Culbertson & Irwin, Inc.
By *John A. Irwin*
President

[illegible]

Contours On Top Yates Sand Contour Interval = 50'

Scale 4" = 1 Mile

