

PROPOSED CC TANK UNIT

EDDY COUNTY, NEW MEXICO

YATES PETROLEUM CORPORATION

ARTESIA, NEW MEXICO

BEFORE EXAMINER ST. YATES
OIL CONTINGENT ON L. 1. SIGN
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CASE NO. 5661
Submitted by <i>R. M. K. K. K.</i>
Hearing Date 3-21-76

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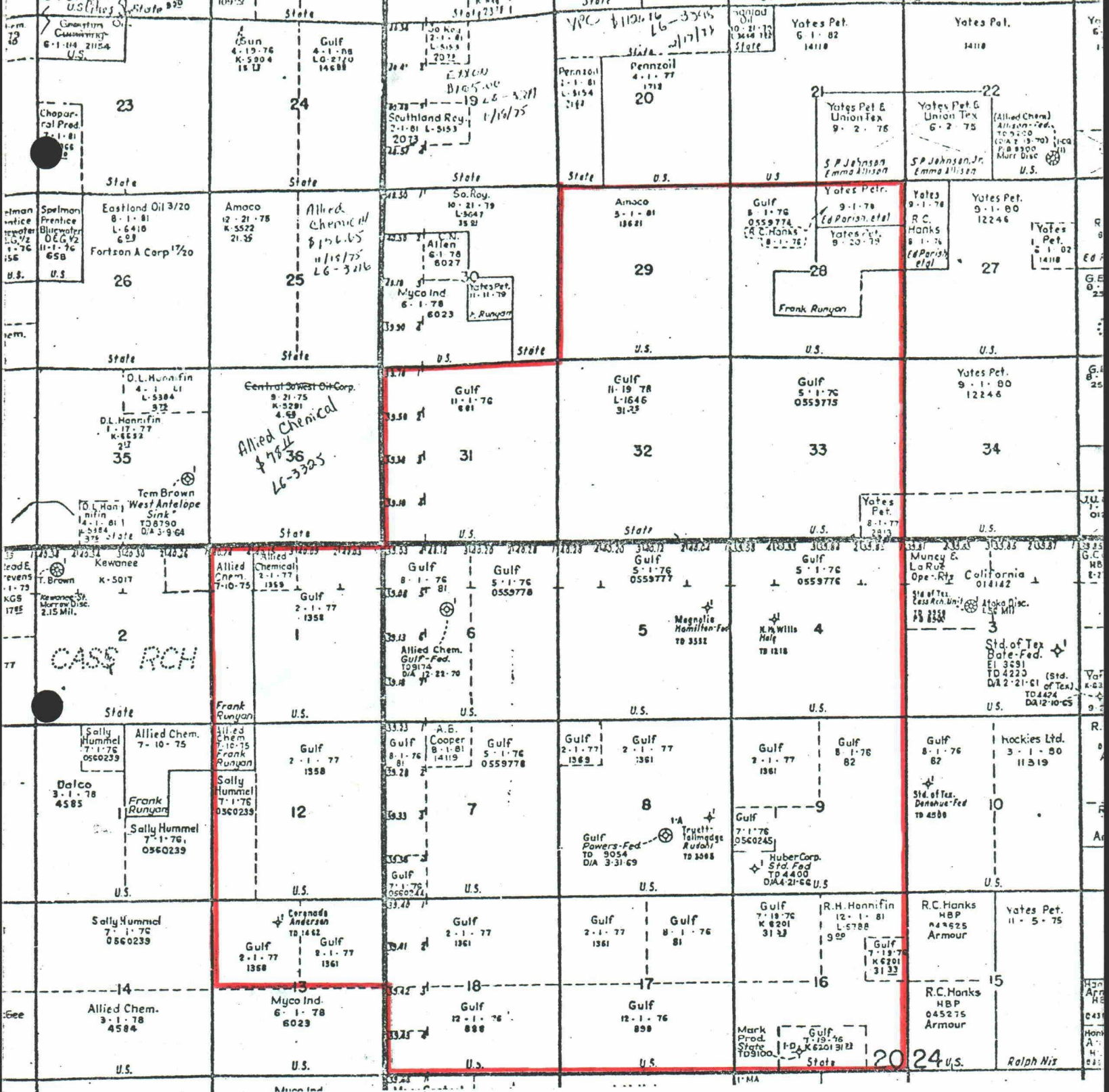
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BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

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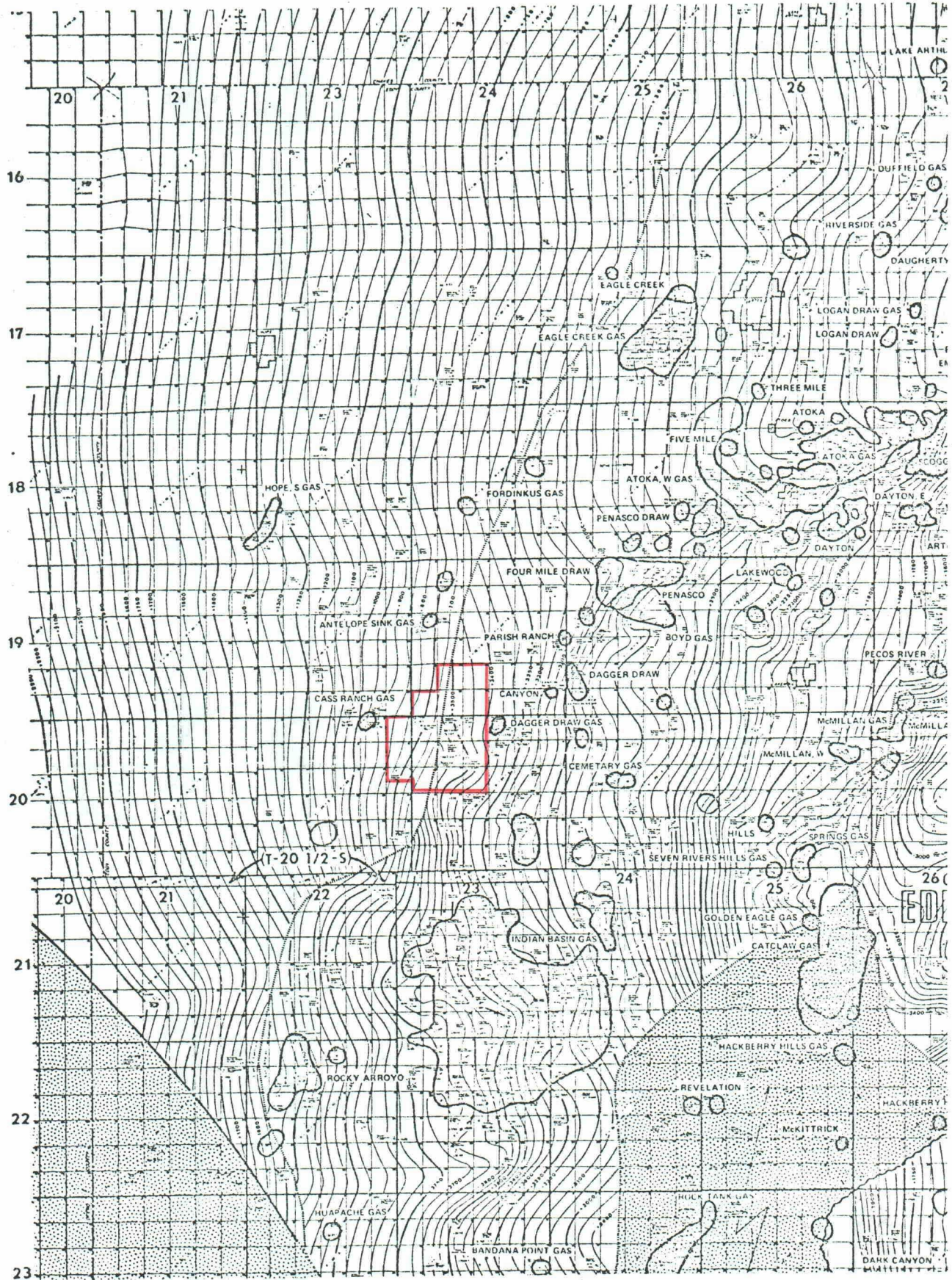
CASE NO. 5661

Submitted by R.M. Richardson

Hearing Date 3-31-76

EXHIBIT NO. 2  
LAND PLAT  
CC TANK UNIT  
EDDY COUNTY, NEW MEXICO





BEFORE EXAMINER STAMETS  
OIL CONSERVATION COMMISSION

EXHIBIT NO. 1

CASE NO. 5661

Submitted by R. M. Reilator

Hearing Date 3-31-76

EXHIBIT NO. 1  
REGIONAL INDEX MAP  
CC TANK UNIT  
EDDY COUNTY, NEW MEXICO





YATES BUILDING - 207 SOUTH 4TH ST.  
ARTESIA, NEW MEXICO - 88210  
March 18, 1976

GEOLOGICAL REPORT  
PROPOSED CC TANK UNIT  
EDDY COUNTY, NEW MEXICO

PURPOSE

The purpose of this report is to briefly summarize the geological reasons for forming a sixteen and one-half section Federal Unit. A 9,000 foot Morrow Wildcat will be drilled within the unit.

LOCATION AND LAND

The proposed CC Tank Unit is located 20 miles southwest of Artesia, New Mexico, in semi-arid, low relief rangeland drained by generally eastwardly-running draws. The unit area is easily accessible by a county-maintained road extending westwardly from U. S. 285. Ground level elevation is approximately 3720 feet.

The proposed unit area contains sixteen and one-half sections or 10,550.24 acres. The unit includes sections 28, 29, 31, 32 and 33 in T19S-R24E, Sections 1, 12 and north half of 13 in T20S-R23E and Section 4, 5, 6, 7, 8, 9, 16, 17 and 18 in T20S-R24E.

## GENERAL GEOLOGICAL DISCUSSION

The CC Tank Unit is located on the Northwestern Shelf of the greater Permian Basin of West Texas and Southeastern New Mexico. Approximately 10,800 feet of Permian, Pennsylvanian, Mississippian, Devonian, Silurian, Ordovician and Cambrian sedimentary rocks are present. A 9,000 foot wildcat in the unit will entirely penetrate the principally prospective Lower Pennsylvanian Morrow and bottom in the Chester Limestone of Mississippian age. Expected tops are as follows:

San Andres	301
Glorieta	1661
Yeso	1751
Abo	3776
Wolfcamp Limestone	5074
Lower Canyon	7316
Strawn	7943
Atoka	8394
Morrow Clastics	8706
Chester Limestone	8956

The primary objective is the Lower Pennsylvanian Morrow clastics interval. Secondary objectives include Permian Yeso carbonates and Pennsylvanian Canyon carbonates, Strawn clastics and Atoka clastics.

Shoreline strike sands (beaches, bars) of the Morrow trend generally northeast-southwest in this area of Eddy County. Thicker, but narrower and more elusive "shoestring-like" channel sand bodies (alluvial, distributary) generally trend normal or sub-normal to the shoreline strike sands.

#### GEOLOGICAL DISCUSSION OF UNIT AREA AND ENVIRONS

The primary objective of the CC Tank Prospect is the gas-bearing shoreline strike sands of the Morrow "A" Zone (or upper zone of the Morrow, see Exhibit No. 4). Exhibit No. 3 is a map showing the varying thickness of the total net pay in the Morrow "A" Zone and the structural configuration on top of the Morrow Clastics.

Zero net pay in 4 wells to the west and northwest of the unit operated by Tom Brown, namely the Kewanee State in Section 2 of 20S-23E, the Siegest Draw No. 2 in Section 34 of 19S-23E, the West Antelope Sink in Section 35 of 19S-23E and the Antelope Sink in Section 18 of 19S-24E, limit the prospect to the west and northwest and form an updip permeability barrier to trap gas in the Morrow "A" Zone within the CC Tank Unit.

Three wells in 20S-24E, the Standard No. 1 Cass Ranch in Section 3, the Mark No. 1 State "D" in Section 16 and the Carper No. 1 Monsanto in Section 21 limit the CC Tank Prospect on the downdip side. The Mark No. 1 Foster in Section 21 of 20S-24E is a fairly recent, low volume Morrow gas well, but the operators

have not yet released the "electric" logs.

The prospect is limited to the northeast by either a lack of "A" Zone sands or a permeability barrier because the Yates No. 1 Allison "CQ" in Section 22 of 19S-24E is completed in the "A" Zone but has demonstrated by production history to be in a limited reservoir. The Allison "CQ" was put on stream in August of 1974 and as of January, 1976, the well only had a cumulative production of 17.3 Million CFG and was down to 30 MCFPD. Therefore, the Allison "CQ" is draining a limited resevoir and is not thought to be connected at all with the areally extensive "A" Zone sands in the CC Tank Unit which would have yielded hundreds of times more gas than the Allison "CQ" in the same time span of production.

The key wells to the prospect are the abandoned Allied Chemical No. 1 Gulf Federal in Section 6 of 20S-24E and the abandoned Gulf No. 1 Powers Federal in Section 8 of 20S-24E. Neither of the wells were drillstem tested or cored. Therefore, analysis of the Morrow sand quality and hydrocarbon potential must come from the open hole "electric" logs which were run in the wells. The following table shows that 18 feet of potentially gas-bearing "A" Zone sand is present in the Allied Chemical No. 1 Gulf Federal well and that 19 feet of potentially gas-bearing "A" Zone sand is present in the Gulf No. 1 Powers Federal well.



LOG ANALYSES  
OF  
POTENTIALLY PRODUCTIVE  
AND  
UNTESTED MORROW "A" ZONE SANDS  
IN THE  
ALLIED CHEMICAL & GULF WELLS

Allied Chemical No. 1 Gulf Federal - Section 6-T203-R24E

<u>Depth</u>	<u>Porosity</u>	<u>Water Saturation</u>	<u>Analyst's Remarks</u>
8772-74	13%	31%	Potentially Hydrocarbon Bearing
8782-90	8%	20%	" " "
8822-30	8%	46%	" " "

Gulf Oil No. 1 Powers "A" Federal - Section 8-205-R24E

<u>Depth</u>	<u>Porosity</u>	<u>Saturation</u>	<u>Remarks</u>
8930-33	10%	47%	Potentially Hydrocarbon Bearing
8937-44	9%	38%	" " "
8949-58	12%	28%	" " "

The Gulf No. 1 Powers Federal was completed in 1969 and the Allied Chemical No. 1 Gulf Federal was completed in 1970. Since that time techniques of analyzing open hole logs of gas-bearing sands has improved significantly. Application of these improved techniques indicates that both the Gulf and Allied Chemical wells

are by passed Morrow "A" Zone gas wells. If the above wells had been drilled recently and logged with modern open hole logs designed for gas-bearing sands it is very likely that they would have been completed in the Morrow "A" Zone.

Exhibit No. 4 is stratigraphic crossection traversing the CC Tank Unit from northwest (updip) to southeast (downdip). The crossection shows the stratigraphy and zonation of the Morrow Clastics, the permeability barriers and the "A" Zone pay sands in the bypassed gas wells.

#### SUMMARY AND CONCLUSION

Extant subsurface data in the environs of the CC Tank Unit was used to construct a net pay map of the Morrow "A" Zone shoreline strike sands which shows a stratigraphic trap underlying the proposed unit outline.

Close log analysis of the Morrow interval in two older, untested and abandoned key wells within the unit indicates that they are bypassed gas wells.

Potential exists for additional pays in the Yeso, Canyon, Strawn, Atoka and Morrow "B" Zone.

In conclusion, the sixteen and one-half sections as outlined appear to be properly located by geologic reasons that give cause and justification for the formation of the CC Tank Unit as proposed.