21-31S-4E

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Valuation Report.

WAITE "A" LEASE

As of Nov. 30, 1946.

The Waite "A" Lease consists of the E½ SW¼ & SE¼ NW¼ of Sec. 21-31S-4E, Cowley County, Kansas. It consists of 120 acres and has 12 wells drilled to the Arbuckle Lime with total depths ranging from 3,283 feet to 3,380 feet.

Production Record.

1939		295,361 bbl.
1940		213,782
1941		210,558
1942		198,836
1943		197,773
1944		173,647
1945		173,884
1946	(11 mo)	128,284
Total		1,592,125 bbl.

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1946	Aug.	12,023 bbl.
	Sept.	11,372
	Oct.	12,248
	Nov.	11897

It is characteristic of Hittle Pool leases to produce their allowable production for several years and then to break into a rapid decline. This characteristic is illustrated by the Barnett- Waite, Cities Service-Waite and Cities Service-Hittle leases, all of which have been abandoned. These leases followed fairly regular decline curves after the "break", and the decline curves had about the same slope when plotted on Log-log paper. The higher the monthly production at the time of the "break", the more oil will be produced during the decline to the economic limit, and the longer is the time required to reach the economic limit. This point is illustrated by the following tabulation.

	Monthly production at time of "break"	Production after break.
Cities Service-Hittle	1,072 bbl.	5,907 bbl.
Cities Service-Waite	2,303	11,298
Barnett-Waite	9,203	70,455

If the production curve of the Waite "A" should break at its present level of 12,000 bbl. per month, and follow the same rate of decline as the Barnett-Waite, we could expect 90,000 to 95,000 bbl. of oil after the break and it would take about 36 months to decline to 300 bbl. per month.

The pumping wells on the Waite lease have declined considerably since the potential tests which were taken 8 months ago. Wells No. 3 & 4, which were flowing wells then, are now pumping. Well No. 1 has weakened considerably and is now about ready to start pumping. Tests taken this week were as follows;

Well	Daily Fluid by Barrel Test	% Oil	Daily Oil	% Oil on Pot, test.
3	357	9.56	34.13	0
4	753	27.5	207.08	0
6	846	4.7	39.76	27
10	941	1.2	11.29	13
11	974	.53	5.16	2
			297.42	

Well No. 4 is now making about half of the daily allowable of the lease. It started pumping about 4 months ago and the rapid increase of water percentage makes it appear that this well will not maintain the lease allowable much longer. No. 1 is about ready for the pump and could, by pumping maintain the present level of lease production for 3 or 4 months. By that time it is probable that No. 2 may be ready to pump so it is probable that the lease production could be maintained at its present level of 12,000 bbl. per month for at least 6 months.

6 months @ 12,000 bbl. before "break"	72,000 bbl.
Prod. after "break" by decline curve	90,000
Estimated future production	162,000 bbl.

The potentials, and the allowable production, of this lease will be cut heavily after the next potential tests which are due in March, 1947. It will take considerably longer for the production to reach the "breaking point" at the lower level of production, and the following decling production will be less

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if we start declining from the lower breaking point. However, I consider that the future production will be about the same as if we continued from the present allowable. The Texas Company is likely to have a larger percent of the field allowable after the next potential tasts which may increase the drainage against the Waite "A" lease.

The over-all operating cost to date has been 8¢ per barrel and the current operating cost is about 12½¢ per barrel. The final cost will rise to about $1.00 per barrel, but this will affect a small proportion of the total future production, and the current cost will continue until the allowable is reduced or the production curve breaks. An average cost of 30¢ per barrel is used to estimate the future income.

Estimated Salvage.

Casing	$3,600
Tubing	5,250
Units	7,500
	$16,350

Estimated Future Earnings.

Estimated future production		162,000 bbl.
Value @ $1.68		$ 272,160.00
Royalty 12½%	$ 34,020.00	
Oper. Cost 30¢ bbl.	48,600.00	82,620.00
Net earnings		$ 189,540.00
Est. Salvage		16,350.00
Total		$ 205,890.00

Respectfully submitted,

L. L. Foley.

Dec. 12, 1946.

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