13-22s-10E

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS 1, TEXAS

September 13, 1961

REPLY TO
4010 N. YOUNGS BLVD.
P. O. BOX 7128
OKLAHOMA CITY, OKLA.

Home-Stake Production Company
Philtower Building
Tulsa, Oklahoma

Attention: Mr. Dave Davies

Subject: Core Analysis
Kipper "A" No. O-3 Well
Harris Pool Field
Greenwood County, Kansas
CLI File No. CP-10-718-FC

Gentlemen:

Coarse grained Bartlesville sand analyzed from 2140 to 2168 feet exhibits residual fluid saturations indicative of oil production. The interval has an average porosity of 20.6 percent and an average permeability of 48 md. The productive capacity of 1047 md./ft. appears adequate to support satisfactory rates of withdrawal without benefit of a treatment. Higher than normal total water saturations are believed due to the presence of chert and weathered chert nodules found in the analyzed interval.

A summary of the average core analysis values on those samples which measured in excess of 2.0 md. permeability has been presented on page one of this report along with estimates of the recoverable oil.

Thank you for the opportunity of serving you.

Yours very truly,

Core Laboratories, Inc.

J. G. Evertson, Jr.
District Manager

JGE:db
7 cc: Addressee

CL 949

CORE LABORATORIES, INC.

Petroleum Reservoir Engineering

DALLAS, TEXAS

Well Kipper "A" No. O-3

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

FORMATION NAME AND DEPTH INTERVAL: Bartlesville 2140 - 2168

FEET OF CORE RECOVERED FROM ABOVE INTERVAL	28		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	50.6
FEET OF CORE INCLUDED IN AVERAGES	22		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	(e) 45
AVERAGE PERMEABILITY: MILLIDARCYS	48		OIL GRAVITY: °API	(e) 38
PRODUCTIVE CAPACITY: MILLIDARCY-FEET	1047		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	(e) 140/1
AVERAGE POROSITY: PER CENT	20.6		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	(e) 1.13
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE	20.0		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	745

Calculated maximum solution gas drive recovery is 176 barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is 425 barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

FORMATION NAME AND DEPTH INTERVAL:

FEET OF CORE RECOVERED FROM ABOVE INTERVAL		AVERAGE TOTAL WATER SATURATION: PER CENT OF PORE SPACE	
FEET OF CORE INCLUDED IN AVERAGES		AVERAGE CONNATE WATER SATURATION: PER CENT OF PORE SPACE	
AVERAGE PERMEABILITY: MILLIDARCYS		OIL GRAVITY: °API	
PRODUCTIVE CAPACITY: MILLIDARCY-FEET		ORIGINAL SOLUTION GAS-OIL RATIO: CUBIC FEET PER BARREL	
AVERAGE POROSITY: PER CENT		ORIGINAL FORMATION VOLUME FACTOR: BARRELS SATURATED OIL PER BARREL STOCK-TANK OIL	
AVERAGE RESIDUAL OIL SATURATION: PER CENT OF PORE SPACE		CALCULATED ORIGINAL STOCK-TANK OIL IN PLACE: BARRELS PER ACRE-FOOT	

Calculated maximum solution gas drive recovery is barrels per acre-foot, assuming production could be continued until reservoir pressure declined to zero psig. Calculated maximum water drive recovery is barrels per acre-foot, assuming full maintenance of original reservoir pressure, 100% areal and vertical coverage, and continuation of production to 100% water cut. (*Please refer to footnotes for further discussion of recovery estimates.*)

(c) Calculated (e) Estimated (m) Measured (*) Refer to attached letter.

These recovery estimates represent theoretical maximum values for solution gas and water drive. They assume that production is started at original reservoir pressure; i.e., no account is taken of production to date or of prior drainage to other areas. The effects of factors tending to reduce actual ultimate recovery, such as economic limits on oil production rates, gas-oil ratios, or water-oil ratios, have not been taken into account. Neither have factors been considered which may result in actual recovery intermediate between solution gas and complete water drive recoveries, such as gas cap expansion, gravity drainage, or partial water drive. Detailed predictions of ultimate oil recovery to specific abandonment conditions may be made in an engineering study in which consideration is given to overall reservoir characteristics and economic factors.

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY HOME-STAKE PRODUCTION COMPANY	DATE ON 9-3-61	FILE NO. CP10-718-FC
WELL KIPFER "A" NO. 0-3	DATE OFF 9-3-61	ENGRS. BOYLE
FIELD HARRIS POOL	FORMATION BARTLESVILLE	ELEV. -
COUNTY GREENWOOD STATE KANSAS	DRLG. FLD. WATER BASE MUD	CORES DIAMOND
LOCATION E½-NW-NE SEC 13-22S-10E	REMARKS CLI SAMPLED - SERVICE NO. 4	

SAND LIMESTONE CONGLOMERATE CHERT
SHALE DOLOMITE

TABULAR DATA and INTERPRETATION

SAMPLE NUMBER	DEPTH FEET	PERM. MD.	POROSITY %	RESIDUAL SATURATION % PORE SPACE		PROD
				OIL	TOTAL WATER	
1	2140-41	61	21.4	25.2	52.3	
2	41-42	127	21.1	20.8	53.0	
3	42-43	205	21.3	20.6	42.3	
4	43-44	17	21.4	22.4	46.7	
5	44-45	21	19.5	24.6	49.2	
6	45-46	5.1	20.1	19.4	58.2	
7	46-47	29	21.6	19.9	50.4	
8	47-48	10	19.8	22.2	49.5	
9	48-49	89	21.5	21.8	47.0	
10	49-50	44	21.0	19.5	45.3	
11	50-51	201	23.2	23.7	47.0	
12	51-52	31	18.6	22.6	45.2	
13	52-53	14	17.9	23.5	44.2	
14	53-54	30	19.5	20.5	53.8	
15	54-55	15	19.2	17.7	52.1	
16	55-56	15	20.3	16.7	57.1	
17	56-57	18	22.3	17.5	60.5	
18	57-58	15	17.2	17.5	53.5	
19	58-59	12	20.9	16.3	50.6	
20	59-60	5.2	18.9	12.2	56.0	
21	60-61	0.4	16.6	11.5	53.0	
22	61-62	1.3	17.7	15.3	49.7	
23	62-63	3.3	24.0	18.4	56.2	
24	63-64	79	23.0	16.5	43.0	
25	64-65	0.1	25.5	14.5	63.5	
26	65-66	1.6	19.6	11.7	52.5	
27	66-67	0.4	16.0	11.9	65.6	
28	67-68	<0.1	14.8	0.0	85.7	

COMPLETION COREGRAPH