Case 011

CORE ANALYSIS REPORT

FOR

JAKE L. HAMON

COOPER "A" NO. 1 WELL

SOUTH KNOWLES FIELD

LEA COUNTY, NEW MEXICO

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

February 24, 1955

REPLY TO
P. O. BOX 36
MIDLAND, TEXAS

Jake L. Hamon
501 First National Bank Building
Dallas, Texas

Attention: Mr. J. S. Ewing

Subject: Core Analysis
Cooper "A" No. 1 Well
South Knowles Field
Lea County, New Mexico

Gentlemen:

The Devonian formation in the Cooper "A" No. 1 well was cored from 12,190 to 12,258 feet. Shale was recovered down to 12,202 feet, but the remainder of the formation was fractured and vuggy dolomite and was analyzed in the Lovington laboratory by whole-core methods.

The zone, 12,202.0 to 12,210.0 feet, is considered to be nonproductive due to the absence of significant permeability and porosity. The zones, 12,228.5 to 12,239.0, 12,244.0 to 12,251.8, and 12,256.2 to 12,258.0 feet, are expected to be oil productive. The zones, 12,210.0 to 12,228.5, 12,239.0 to 12,244.0, and 12,251.8 to 12,256.2 feet, were determined to have low permeability and porosity. These characteristics are lowest from 12,210.0 to 12,228.5 feet, and no significant flow is expected from this interval. The zone, 12,251.8 to 12,256.2 feet, may produce some fluid as a result of permeability through fractures. High permeability values obtained on sample Nos. 5, 21, 33, 35 and 39 were measured through the secondary system.

Estimates of recoverable oil have been prepared for the zones interpreted to be oil productive. Average data for those zones in which only permeability and porosity were measured also are included in this report for your convenience.

It has been a pleasure to serve you, and we trust these data will assist in the evaluation of this property.

Very truly yours,

Core Laboratories, Inc.

R S Bynum Jr (PE)

R. S. Bynum, Jr.,
District Engineer

RSB:WCF:ma

15cc. - Addressee

FORM F-11A

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

File WP-3-212 S
Well Cooper "A" No. 1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

CORE SUMMARY

FORMATION NAME	Devonian	Devonian	Devonian	Devonian
DEPTH, FEET	12,210.0-12,228.5	12,228.5-12,239.0	12,239.0-12,244.0	12,244.0-12,251.8
% CORE RECOVERY	100	100	100	100
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	18.5	8.9	5.0	7.8
AVERAGE PERMEABILITY MILLIDARCYS	Max.: 0.7 90°: 0.3	Max.: 17 90°: 3.4	Max.: 0.9 90°: 0.6	Max.: 12 90°: 5.2
CAPACITY — AVERAGE PERMEABILITY × FEET PRODUCTIVE FORMATION	Max.: 13 90°: 5.6	Max.: 151 90°: 30	Max.: 4.5 90°: 3.0	Max.: 94 90°: 41
AVERAGE POROSITY, PERCENT	1.7	7.5	2.9	5.3
AVERAGE RESIDUAL OIL SATURATION, % PORE SPACE		6.6		7.3
GRAVITY OF OIL, °A.P.I.		45.3		45.3
AVERAGE TOTAL WATER SATURATION, % PORE SPACE		41.7		40.8
AVERAGE CALCULATED CONNATE WATER SATURATION, % PORE SPACE		41.7		40.8
SOLUTION GAS-OIL RATIO, CUBIC FEET PER BARREL (1)		498		498
FORMATION VOLUME FACTOR—VOLUME THAT ONE BARREL OF STOCK TANK OIL OCCUPIES IN RESERVOIR (1)		1.368		1.368
CALCULATED RECOVERABLE OIL	Prediction dependent upon complete isolation of each division. Structural position of well, total permeable thickness of oil zone and drainage area of well should be considered.			
BY NATURAL OR GAS EXPANSION, BBLS. PER ACRE FOOT (2)		39		28
INCREASE DUE TO WATER DRIVE, BBLS. PER ACRE FOOT		171		120
TOTAL AFTER COMPLETE WATER DRIVE, BBLS. PER ACRE FOOT (3)		210		148

NOTE:

(*) REFER TO ATTACHED LETTER.

(1) REDUCTION IN PRESSURE FROM measured SATURATION PRESSURE TO ATMOSPHERIC PRESSURE.

(2) AFTER REDUCTION FROM ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.

(3) RESERVOIR PRESSURE MAINTAINED BY WATER DRIVE AT OR ABOVE measured ORIGINAL SATURATION PRESSURE.

(4) NO ESTIMATE FOR GAS PHASE RESERVOIRS.

FORM F-11A

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

File WP-3-212 S
Well Cooper "A" No. 1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

CORE SUMMARY

FORMATION NAME	Devonian			
DEPTH, FEET	12,251.8-12,256.2			
% CORE RECOVERY	100			
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	4.4			
AVERAGE PERMEABILITY MILLIDARCYS	Max.: 30 90°: 13			
CAPACITY — AVERAGE PERMEABILITY × FEET PRODUCTIVE FORMATION	Max.: 132 90°: 57			
AVERAGE POROSITY, PERCENT	2.1			
AVERAGE RESIDUAL OIL SATURATION, % PORE SPACE				
GRAVITY OF OIL, °A.P.I.				
AVERAGE TOTAL WATER SATURATION, % PORE SPACE				
AVERAGE CALCULATED CONNATE WATER SATURATION, % PORE SPACE				
SOLUTION GAS-OIL RATIO, CUBIC FEET PER BARREL (1)				
FORMATION VOLUME FACTOR—VOLUME THAT ONE BARREL OF STOCK TANK OIL OCCUPIES IN RESERVOIR (1)				

CALCULATED RECOVERABLE OIL

Prediction dependent upon complete isolation of each division. Structural position of well, total permeable thickness of oil zone and drainage area of well should be considered.

BY NATURAL OR GAS EXPANSION, BBLS. PER ACRE FOOT (2)				
INCREASE DUE TO WATER DRIVE, BBLS. PER ACRE FOOT				
TOTAL AFTER COMPLETE WATER DRIVE, BBLS. PER ACRE FOOT (3)				

Core Laboratories, Inc.

R S Bynum Jr (PE)

R. S. Bynum, Jr.

NOTE:

(*) REFER TO ATTACHED LETTER.

(1) REDUCTION IN PRESSURE FROM SATURATION PRESSURE TO ATMOSPHERIC PRESSURE.

(2) AFTER REDUCTION FROM ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.

(3) RESERVOIR PRESSURE MAINTAINED BY WATER DRIVE AT OR ABOVE ORIGINAL SATURATION PRESSURE.

(4) NO ESTIMATE FOR GAS PHASE RESERVOIRS.

Case 0.1

CORE ANALYSIS REPORT

FOR

JAKE L. HAMON

FANNYE M. HOLLOWAY NO. 1 WELL

HAMON - DEVONIAN FIELD

LEA COUNTY, NEW MEXICO

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS, TEXAS

September 1, 1954

REPLY TO
P. O. BOX 36
MIDLAND, TEXAS

Jake L. Hamon
102 Western Building
Midland, Texas

Attention: Mr. A. C. Elliott

Subject: Core Analysis
Fannye M. Holloway No. 1 Well
Hamon-Devonian Field
Lea County, New Mexico

Gentlemen:

The Devonian formation was cored between 12,114 and 12,208 feet in the Fannye M. Holloway No. 1 well. Diamond coring equipment and a water base drilling fluid were used. The core was logged, quick-frozen and transported by Core Laboratories, Inc., to the Lovington laboratory for analysis.

Dense, shaly limestone between 12,114 and 12,164 feet is nonproductive. Formation from 12,164 to 12,203 feet, consisting of fractured and vugular, stylolitic dolomite and anhydritic dolomite, is expected to be oil productive.

Permeability, porosity and fluid saturations were determined by the whole-core method in order to take into account the effects of vugs and fractures upon the productive characteristics of the formation.

Estimates of recoverable oil by gas expansion and water drive mechanisms of recovery have been prepared. It should be observed that these estimates represent the theoretical maximum unit volumes to be recovered. No economic limits on gas-oil or water-oil ratios have been taken into account.

We trust these data will assist in the evaluation of this property.

Very truly yours,

Core Laboratories, Inc.

R S Bynum Jr (OR)

R. S. Bynum, Jr.,
District Engineer

RSB:WCF:ln
16cc.- Addressee

FORM F-11A

CORE LABORATORIES, INC.
Petroleum Reservoir Engineering
DALLAS

File LNML-160 S
Well Fannye M. Holloway No. 1

CORE SUMMARY AND CALCULATED RECOVERABLE OIL

CORE SUMMARY

FORMATION NAME	Devonian			
DEPTH, FEET	12,164.0-12,201.5			
% CORE RECOVERY	100			
FEET OF PERMEABLE, PRODUCTIVE FORMATION RECOVERED	34.9			
AVERAGE PERMEABILITY MILLIDARCYS	Max.: 26 90°: 7.4			
CAPACITY — AVERAGE PERMEABILITY × FEET PRODUCTIVE FORMATION	Max.: 907 90°: 258			
AVERAGE POROSITY, PERCENT	3.9			
AVERAGE RESIDUAL OIL SATURATION, % PORE SPACE	9.0			
GRAVITY OF OIL, °A.P.I.	43.8			
AVERAGE TOTAL WATER SATURATION, % PORE SPACE	45.9			
AVERAGE CALCULATED CONNATE WATER SATURATION, % PORE SPACE	45.9			
SOLUTION GAS-OIL RATIO, CUBIC FEET PER BARREL (1)				
FORMATION VOLUME FACTOR—VOLUME THAT ONE BARREL OF STOCK TANK OIL OCCUPIES IN RESERVOIR (1)				

CALCULATED RECOVERABLE OIL

Prediction dependent upon complete isolation of each division. Structural position of well, total permeable thickness of oil zone and drainage area of well should be considered.

BY NATURAL OR GAS EXPANSION, BBLS. PER ACRE FOOT (2)	20			
INCREASE DUE TO WATER DRIVE, BBLS. PER ACRE FOOT	76			
TOTAL AFTER COMPLETE WATER DRIVE, BBLS. PER ACRE FOOT (3)	96			

Core Laboratories, Inc.

R S Bynum Jr (RE)

R. S. Bynum, Jr.

NOTE:

(*) REFER TO ATTACHED LETTER.

(1) REDUCTION IN PRESSURE FROM estimated SATURATION PRESSURE TO ATMOSPHERIC PRESSURE.

(2) AFTER REDUCTION FROM ORIGINAL RESERVOIR PRESSURE TO ZERO POUNDS PER SQUARE INCH.

(3) RESERVOIR PRESSURE MAINTAINED BY WATER DRIVE AT OR ABOVE estimated ORIGINAL SATURATION PRESSURE.

(4) NO ESTIMATE FOR GAS PHASE RESERVOIRS.

R 38 E

R 39 E

T 17 S

Sinclair

Jake L Hamon & Warren

Jake L Hamon & Warren

Shell

Roberts

R Holmes

Jake L Hamon & Warren "A"

C J Antron

Gulf

P Carter

Jake L Hamon & Warren

Gulf

12

7

1

2 4740

1 4774

1

L Cooper

Jake L Hamon & Warren

R K Cone

Jake L Hamon & Warren

Jake L Hamon & Warren

R K Cone

Jake L Hamon & Warren

1 4638

1 4743

1 4777

1 4779

J G Cox

Gulf

13

18

1 4824

Gulf

2 4825

2 4820

2

J M Gardner

H V Black

Jake L Hamon & Warren "C"

F Holloway

Federal-Davis

Amerada

D Wilhoit

Jake L Hamon & Warren "A"

1 4818

1

1 4825

Jake L Hamon & Warren "B"

Scale

0 1000 2000

24

19

Reservoir Pressure Tests
8450 Feet Subsea
June 1, 1956

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
H & W EXHIBIT No. G
CASE 819

SOUTH KNOWLES AREA
LEA COUNTY, NEW MEXICO

W V Lawrence

W V Lawrence

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

R 38 E

R. 39 E

T 17 S

Sinclair | Jake L Hamon & Warren | Jake L Hamon & Warren

Shell

Roberts | R Holmes | C J Antron | P Carter

Jake L Hamon & Warren "A" | 12 | Gulf | Jake L Hamon & Warren | Gulf | 7

1 — 23,327 — 87

2 — 63,362 — 10

1 — 92,069 — Trace

1 — 35,370 — 93

L Cooper | R K Cone | R K Cone

Jake L Hamon & Warren | Jake L Hamon & Warren | Jake L Hamon & Warren | Jake L Hamon & Warren

1 — 60,408 — 32

1 — 78,451 — 9

1 — 154,655 — 0

1 — 121,200 — 12

LEGEND

121,200 cumulative oil production to June 1, 1956.

12 water cut, percent

J G Cox | 13 | 18

Gulf

1 — 16,372 — 4

Gulf

2 — 38,720 — 0

2 — 70,655 — 0

2

J M Gardner | H V Black | F Holloway | Federal--Davis | D Wilhoit

Jake L Hamon & Warren "C" | Amerada | Jake L Hamon & Warren "A"

1 — 14,616 — 23

1

1 — 15,193 — 8

Jake L Hamon & Warren "B"

Scale

0 — 1000 — 2000

24 | 19

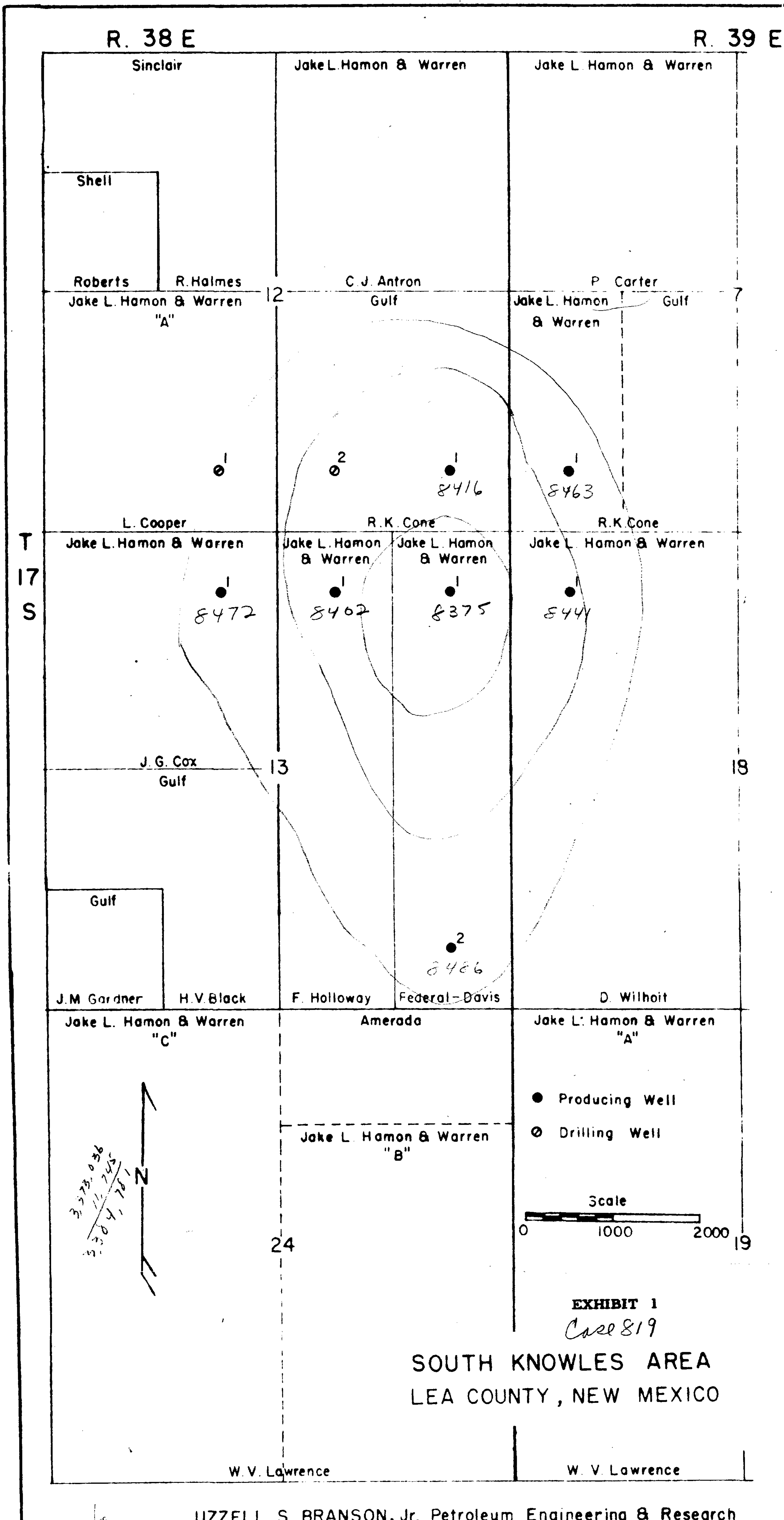
WELL STATUS JULY 1, 1956

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
H & W EXHIBIT No. H
CASE 819

SOUTH KNOWLES AREA
LEA COUNTY, NEW MEXICO

W V Lawrence | W V Lawrence

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research


R. 38 E
R. 39 E
T 17 S
Sinclair
Jake L. Hamon & Warren
Jake L. Hamon & Warren
Shell
Roberts
R. Halmes
12
C. J. Antron
Gulf
P. Carter
Jake L. Hamon & Warren
Gulf
7
Jake L. Hamon & Warren "A"
8416
8463
L. Cooper
R. K. Cone
R. K. Cone
Jake L. Hamon & Warren
Jake L. Hamon & Warren
Jake L. Hamon & Warren
Jake L. Hamon & Warren
8472
8462
8375
8444
J. G. Cox
Gulf
13
18
Gulf
8486
J. M Gardner
H. V. Black
F. Holloway
Federal-Davis
D. Wilhoit
Jake L. Hamon & Warren "C"
Amerada
Jake L. Hamon & Warren "A"
Producing Well
Drilling Well
Jake L. Hamon & Warren "B"
N
Scale
0
1000
2000
24
19
EXHIBIT 1
Case 819
SOUTH KNOWLES AREA
LEA COUNTY, NEW MEXICO
W. V. Lawrence
W. V. Lawrence
UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

R. 38 E

R. 39 E

Sinclair

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Shell

Roberts

R. Holmes

12

C. J. Antron

Gulf

P. Carter

Jake L. Hamon & Warren "A"

Jake L. Hamon & Warren

Gulf

7

1

2

1

1

L. Cooper

R. K. Cone

R. K. Cone

T 17 S

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

1

1

1

1

J. G. Cox

Gulf

13

18

Gulf

J. M. Gardner

H. V. Black

F. Holloway

Federal - Davis

D. Wilhoit

2

Jake L. Hamon & Warren "C"

Amerada

Jake L. Hamon & Warren "A"

Jake L. Hamon & Warren "B"

● Producing Well

⊘ Drilling Well

N

Scale

0 1000 2000

24

19

EXHIBIT 1

SOUTH KNOWLES AREA

LEA COUNTY, NEW MEXICO

W. V. Lawrence

W. V. Lawrence

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

R. 38 E

R. 39 E

T 17 S

Sinclair

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Shell

Roberts

R Holmes

Jake L. Hamon & Warren "A"

C J Antron

Gulf

P Carter

Jake L. Hamon & Warren

Gulf

12

7

1 -8491

2 -8438

1 -8414

1 -8463

L. Cooper

R K Cone

R K Cone

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

1 -8472

1 -8402

1 -8375

1 -8441

J G Cox

Gulf

13

18

-8400

-8500

-8530

-8600

OIL/WATER CONTACT

1

2 -8424

2 -8486

Gulf

J M Gardner

H V Black

F Holloway

Federal-Davis

D Wilhoit

Jake L. Hamon & Warren "C"

Amerada

Jake L. Hamon & Warren "A"

Jake L. Hamon & Warren "B"

Producing Well

Drilling Well

N

Scale

0 1000 2000

24

19

W V Lawrence

W V Lawrence

FIGURE 1

STRUCTURE ON DEVONIAN

SOUTH KNOWLES AREA

LEA COUNTY, NEW MEXICO

BEFORE THE
OIL CONSERVATION COMMISSION
SANTA FE, NEW MEXICO
Hamon & Warren EXHIBIT No. 3
CASE 819

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

R. 38 E

R. 39 E

Sinclair

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Shell

Roberts

R. Holmes

C. J. Antron

P. Carter

12

7

Jake L. Hamon & Warren "A"

Gulf

Jake L. Hamon & Warren

Gulf

1
4618
8496-531
50

2
-
8438-549
12

1
28,707
8422-54
0

1
12,290
8497-546
6

L. Cooper

R. K. Cone

R. K. Cone

T 17 S

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Jake L. Hamon & Warren

1
22,528
8489-542
15

1
39,338
8458-502
3

1
84,823
8445-76
0

1
56,057
8479-509
1.5

J. G. Cox

Gulf

13

18

LEGEND

56,057 — cumulative oil production to May 1, 1955

8479-589 — section open, depth feet sub-surface

1.5 — water cut, percent

Gulf

2
8520
8488-518

J. M. Gardner

H. V. Black

F. Holloway

Federal-Davis

D. Wilhoit

Jake L. Hamon & Warren "C"

Amerada

Jake L. Hamon & Warren "A"

● Producing Well

Jake L. Hamon & Warren "B"

N

Scale

0 1000 2000

24

19

FIGURE 2

BEFORE THE OIL CONSERVATION COMMISSION SANTA FE, NEW MEXICO
Hamon & Warren EXHIBIT No. 2
CASE 819

WELL STATUS MAY 1, 1955

SOUTH KNOWLES AREA

LEA COUNTY, NEW MEXICO

W. V. Lawrence

W. V. Lawrence

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

R. 38 E

R. 39 E

T 17 S

Sinclair

Jake L. Hamon & Warren

Jake L. Hamon & Warren

Shell

Roberts
Jake L. Hamon & Warren "A"

R. Holmes

12

C. J. Antron
Gulf

P. Carter
Jake L. Hamon & Warren

Gulf

7

1 -8491

2 -8438

-8414

-8463

L. Cooper
Jake L. Hamon & Warren

R. K. Cone
Jake L. Hamon & Warren

R. K. Cone
Jake L. Hamon & Warren

1 -8472

1 -8402

1 -8375

1 -8441

J. G. Cox
Gulf

13

-8400

-8500

-8530

-8600

OIL/WATER CONTACT

18

Gulf

8412

2 -8486

J. M. Gardner

H. V. Black

F. Holloway

Federal-Davis
Amerada

D. Wilhoit
Jake L. Hamon & Warren "A"

Jake L. Hamon & Warren "C"

Jake L. Hamon & Warren "B"

● Producing Well

⊘ Drilling Well

N

Scale
0 1000 2000

24

19

W. V. Lawrence

W. V. Lawrence

FIGURE 1

STRUCTURE ON DEVONIAN

SOUTH KNOWLES AREA

LEA COUNTY, NEW MEXICO

UZZELL S. BRANSON, Jr. Petroleum Engineering & Research

FORM 6 2

CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY JAKE L. HAMON — DATE ON 1-2-55 — FILE NO. LKML-195 S
WELL FEDERAL DAVIS NO. 2 — DATE OFF 1-11-55 — ENGRS. BOONE-DAIGLE
FIELD SOUTH KNOWLES — FORMATION DEVONIAN — ELEV. 3698' KB
COUNTY LEA — STATE NEW MEXICO — DRLG. FLD. WATER BASE MUD — CORES CHRISTENSEN 4"
LOCATION SEC. 13-T17S-R38E — REMARKS SAMPLED BY CORE LABORATORIES, INC.

Special Analysis
CORE REPORT

SAND — LIMESTONE — CONGLOMERATE — CHERT
SHALE — DOLOMITE — ANHYDRITE

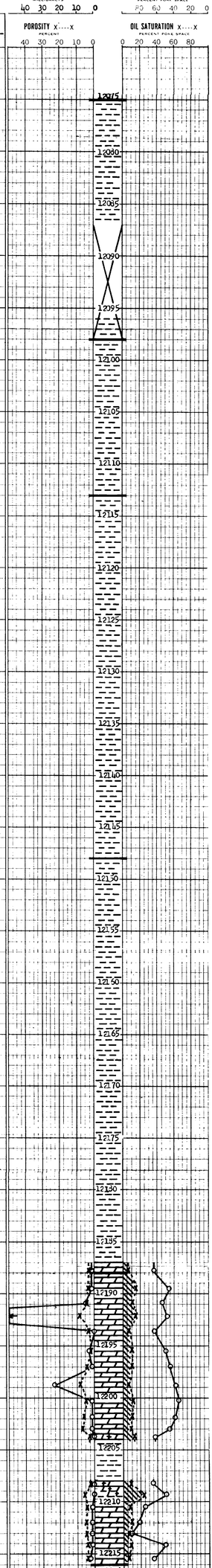
F-FRACTURED
S-SLIGHTLY
V-VUGULAR

PERMEABILITY, Maximum O–O MILLIDARCYS 40 30 20 10 0 — TOTAL WATER O–O PERCENT PORE SPACE 80 60 40 20 0

POROSITY x-----x PERCENT 40 30 20 10 0 — OIL SATURATION x----x PERCENT PORE SPACE 0 20 40 60 80

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY %	RESIDUAL SATURATION PORE SPACE OIL	TOTAL WATER	VISUAL DESCRIPTION
1	12187.0-88.8	0.5	0.1	3.3	6.1	53.7	F
2	12188.8-90.3	0.1	<0.1	3.4	14.7	47.1	SF,SV
3	90.3-91.5	4.7	0.6	4.6	10.9	54.3	V,F
4	12191.5-92.8	445	259	8.3	14.5	48.2	V,SF
5	92.8-94.5	<0.1	<0.1	3.0	6.7	63.3	SF
6	12194.5-96.2	3.2	0.5	2.0	10.0	50.0	SF
7	96.2-97.8	0.3	0.1	4.0	10.0	45.0	SV,SF
8	12197.8-99.5	*23	*20	8.1	6.2	18.3	F,V
9	12199.5-01.0	*1.1	*0.8	4.6	10.9	34.8	F,SV
10	1220 1.0-02.7	1.1	0.2	5.9	10.2	39.0	F,SV
11	02.7-03.4	0.9	0.7	6.7	9.0	46.2	F,SV
12	03.4-04.2	*<0.1	*<0.1	2.4	12.5	62.5	F
13	12207.9-08.8	<0.1	<0.1	2.3	8.7	65.2	SF
14	08.8-09.8	<0.1	<0.1	5.4	24.1	50.0	SF
15	09.8-11.3	0.4	0.2	4.0	7.5	75.0	SF
16	11.3-12.5	0.1	<0.1	4.4	9.1	81.8	
17	12.5-13.6	0.1	<0.1	4.3	7.0	90.7	
18	12213.6-14.9	0.3	0.2	1.7	8.1	51.3	V
19	14.9-16.0	2.3	0.5	3.4	5.9	64.8	F

* BROKEN-UNSUITABLE FOR FULL-DIAMETER PERMEABILITY MEASUREMENT. MATRIX PERMEABILITY ONLY.



FORM 6 2

CORE LABORATORIES, INC. CORE LAB *Petroleum Reservoir Engineering*

COMPANY JAKE L. HAMON		DATE ON 8-22-54	FILE NO. INML-160 S
WELL FANNYE M. HOLLOWAY NO. 1		DATE OFF 8-28-54	ENGRS. BOONE-HOLGUIN
FIELD HAMON-DEVONIAN		FORMATION DEVONIAN	ELEV. 3708' DF
COUNTY LEA	STATE NEW MEXICO	DRLG. FLD. WATER BASE MUD	CORES CHRISTENSEN 3.5"
LOCATION		REMARKS SAMPLED BY CORE LABORATORIES, INC.	

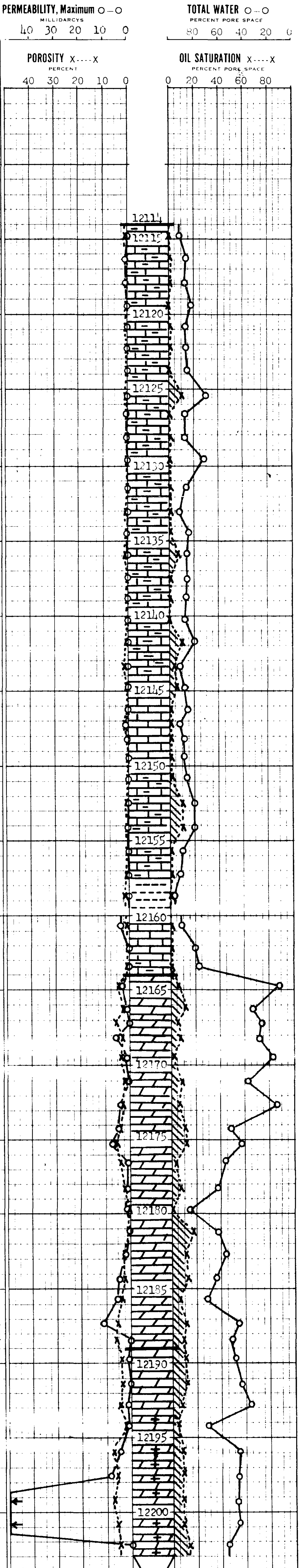
Special Analysis

CORE REPORT

SAND — SHALE — LIMESTONE — DOLOMITE — CONGLOMERATE — ANHYDRITE — CHERT

F - FRACTURED S - STYLOLITIC
V - VUGULAR SL - SLIGHTLY

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	PERMEABILITY MILLIDARCYS 90°	POROSITY %	RESIDUAL SATURATION % PORE SPACE OIL	RESIDUAL SATURATION % PORE SPACE TOTAL WATER	VISUAL DESCRIPTION
1	12114.0-15.5	<0.1	<0.1	1.3	0.0	92.3	F,S
2	12115.5-17.1	0.3	0.1	0.8	TR	87.5	F,S
3	12117.1-18.6	0.3	0.1	0.9	TR	88.8	F,S
4	12118.6-20.1	<0.1	<0.1	0.6	0.0	83.3	
5	12120.1-21.5	<0.1	<0.1	0.9	TR	[illegible]	S
6	12121.5-23.0	<0.1	<0.1	0.8	TR	87.5	S
7	12123.0-24.6	<0.1	<0.1	0.7	0.0	85.8	S
8	12124.6-26.0	<0.1	<0.1	1.0	10.0	70.0	S
9	12126.0-27.3	0.2	0.1	0.9	0.0	[illegible]	S
10	12127.3-[illegible]	0.1	0.1	[illegible]	TR	[illegible]	F,S
11	12129.0-30.7	<0.1	<0.1	0.7	TR	[illegible]	S
12	121[illegible]-32.2	<0.1	<0.1	0.7	TR	[illegible]	S
13	12132.2-33.8	<0.1	<0.1	1.3	TR	92.3	S
14	12133.8-35.2	0.1	<0.1	1.0	TR	80.0	S
15	12135.2-36.8	<0.1	<0.1	1.4	7.1	85.8	S
16	12136.8-38.1	<0.1	<0.1	0.7	TR	85.8	S
17	12138.1-39.5	<0.1	<0.1	0.8	TR	87.5	S
18	12139.5-41.0	<0.1	<0.1	0.9	0.0	88.8	S
19	12141.0-42.4	<0.1	<0.1	1.0	10.0	80.0	S
20	12142.4-44.0	<0.1	<0.1	2.3	4.3	91.3	F,S
21	12144.0-45.7	<0.1	<0.1	1.8	5.5	[illegible]	F,S
22	12145.7-46.8	<0.1	<0.1	0.7	TR	85.8	S
23	12146.8-47.4	1.2	<0.1	1.3	TR	92.3	S
24	12147.4-48.8	0.1	<0.1	0.9	TR	88.8	S
25	12148.8-50.1	<0.1	<0.1	0.9	TR	88.8	S
26	12150.1-51.6	<0.1	<0.1	0.8	TR	87.5	S
27	12151.6-53.3	<0.1	< .1	1.0	10.0	80.0	S
28	12153.3-55.0	0.1	<0.1	1.0	10.0	80.0	S
29	12155.0-56.6	0.1	0.1	1.0	TR	90.0	
30	12156.6-58.0	<0.1	<0.1	1.3	TR	92.3	
31	12158.0-59.5	<0.1	<0.1	2.4	0.0	95.8	
32	12160.0-61.5	3.5	0.2	1.2	TR	91.7	SL F
33	12161.5-63.0	<0.1	<0.1	1.0	TR	80.0	SL F
34	12163.0-64.0	<0.1	<0.1	1.3	TR	77.0	
35	12164.0-65.7	2.8	<0.1	1.2	7.2	11.9	V
36	12165.7-66.9	1.8	0.5	2.6	11.5	34.6	SLF,SLV
37	121[illegible].9-67.6	<0.1	<0.1	5.5	5.5	[illegible]	V
38	12167.6-[illegible]	[illegible]	[illegible]	[illegible]	7.1	[illegible]	[illegible]
39	[illegible]	[illegible]	1.2	2.9	2.4	[illegible]	V
40	12170.5-71.9	0.1	<0.1	2.1	9.5	38.1	F,SL V
41	12171.9-73.6	3.3	2.8	2.7	7.4	[illegible]	F,SL V
42	12173.6-7[illegible]	[illegible]	<0.1	[illegible]	[illegible]	[illegible]	SLF,SLV
43	12174.9-75.8	7.2	<0.1	5.3	11.3	[illegible]	S,SL V
44	12175.8-77.5	0.9	0.9	[illegible]	4.7	[illegible]	SLF,SLV
45	12177.5-79.1	1.0	0.1	[illegible]	8.3	[illegible]	SL V
46	12179.1-80.3	1.1	0.1	0.7	TR	85.8	SL F
47	12180.3-82.0	0.3	0.1	1.1	[illegible]	[illegible]	SLF,SLV
48	12182.0-83.7	2.0	1.6	2.7	[illegible]	55.7	F,SL V
49	12183.7-85.0	4.8	0.2	2.5	12.0	64.0	F
50	12185.0-86.7	5.5	0.1	3.3	[illegible]	72.8	F,SL V
51	12186.7-88.3	11	5.7	5.9	10.2	45.8	SLF,SLV
52	12188.3-89.0	<0.1	<0.1	[illegible]	[illegible]	51.6	SLF,SLV
53	12189.0-90.7	[illegible]	0.6	3.7	10.8	54.2	F,V
54	[illegible]	0.1	0.1	3.6	11.1	[illegible]	F,SL V
55	12192.2-93.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F,V
56	121[illegible]-95.1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F,S
57	12195.1-96.7	[illegible]	3.9	7.3	[illegible]	[illegible]	F,V
58	1219[illegible].7-98.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F,V
59	12198.5-00.0	352	12	7.1	[illegible]	[illegible]	F,V
60	12200.0-01.5	180	128	[illegible]	[illegible]	[illegible]	F,SL V
61	12201.5-03.0	<0.1	<.1	[illegible]	[illegible]	[illegible]	F,SL V



CORE LABORATORIES, INC. *Petroleum Reservoir Engineering*

COMPANY JAKE L. HAMON — DATE ON 5-14-54 — FILE NO. LNML-135 S
WELL FEDERAL-DAVIS NO. 1 — DATE OFF 5-14-54 — ENGRS. WBM
FIELD WILDCAT — FORMATION DEVONIAN — ELEV. 3695' DF
COUNTY LEA — STATE NEW MEXICO — DRLG. FLD. WATER BASE MUD — CORES DOWDCO 2½"
LOCATION NE NE SEC. 13 T17S R36E — REMARKS SAMPLED BY CORE LABORATORIES, INC.

Special Analysis

CORE REPORT

SAND · LIMESTONE · CONGLOMERATE · CHERT · SHALE · DOLOMITE

SL-SLIGHTLY V-VUGULAR
F-FRACTURE

SAMPLE NUMBER	DEPTH FEET	PERMEABILITY MILLIDARCYS MAX	90°	POROSITY %	RESIDUAL SATURATION % PORE SPACE OIL	TOTAL WATER	VISUAL DESCRIPTION
1	12142.0-44.0	1.5	0.3	5.3	11.3	52.8	SLF,V
2	12144.0-46.0	4.3	1.4	5.3	5.4	49.1	SLF,V
3	12146.0-47.0	<0.1	<0.1	2.8	TR	73.6	SLF

PERMEABILITY, Maximum O–O
MILLIDARCYS
40 30 20 10 0

TOTAL WATER O–O
PERCENT PORE SPACE
80 60 40 20 0

POROSITY X----X
PERCENT
40 30 20 10 0

OIL SATURATION X----X
PERCENT PORE SPACE
0 20 40 60 80