GEOLOGICAL DATA AND DRILLING AND COMPLETION PROCEDURE

FORMATION OR DATE	TOP-DEPTH INTERVAL	REMARKS OR DESCRIPTION AND RESULTS OF WORK

FORMATION TOPS

Neva	2471' KB
Penn	2689' KB
Elmont-Reading	2753' KB
Topeka	2884' KB
Heeliner	3102' KB
Toronto	3116' KB
Lansing KC	3189' KB
Marmaton	3619' KB
Cherokee	3756' KB
Atoka	3925' KB
Morrow	4176' KB
Miss	4605' KB

CORE DESCRIPTION

No cores taken.

DRILL STEM TESTS

Drill Stem Test #1

Date:	July 30, 1961
Zone:	2595'-2653' KB
Formation:	Neva
Recovered:	Misrun

Drill Stem Test #2

Date:	July 30, 1961
Zone:	2814'-2852' KB
Formation:	Elmont-Reading
Recovered:	185' Slightly gas cut mud
IHP:	1365
FHP:	1361
IFP:	19
FFP:	68
ISIP:	372
FSIP:	354
Remarks:	Tool open 2 min before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 45 minutes. Blow - Fair

Drill Stem Test #3

Date:	July 31, 1961
Zone:	2858'-2900' KB
Formation:	Topeka
Recovered:	180' Slightly gas cut mud
IHP:	1396
FHP:	1401
IFP:	14
FFP:	89
ISIP:	417
FSIP:	392
Remarks:	Tool open 2 minutes before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 30 minutes. Blow - Fair to weak.

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Drill Stem Test #4

Date:	August 1, 1961
Zone:	2910'-2935' KB
Formation:	Topeka
Recovered:	5' mud
IHP:	1497
FHP:	1514
IFP:	10
FFP:	28
ISIP:	526
FSIP:	296

Remarks: Tool open 2 minutes before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 30 minutes. Blow: Very weak for 14 minutes then died.

Drill Stem Test #5

Date:	August 2, 1961
Zone:	3080'-3119' KB
Formation:	Topeka
Recovered:	60' Slightly gas cut mud
IHP:	1394
FHP:	--
IFP:	8
FFP:	27
ISIP:	242
FSIP:	41

Remarks: Tool open 3 minutes before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 30 minutes. Blow: Very weak.

Drill Stem Test #6

Date:	August 7, 1961
Zone:	4161'-4188' KB
Formation:	Morrow
Recovered:	5' Mud
IHP:	2046
FHP:	2046
IFP:	9
FFP:	18
ISIP:	80
FSIP:	28

Remarks: Tool open 2 minutes before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 30 minutes. Blow: Very weak for 2 minutes and died. On vacuum throughout test.

GEOLOGICAL DATA AND DRILLING AND COMPLETION PROCEDURE

FORMATION OR DATE	TOP-DEPTH INTERVAL	REMARKS OR DESCRIPTION AND RESULTS OF WORK

Drill Stem Test #7

Date:	August 8, 1961
Zone:	4229'-4241' KB
Formation:	Morrow
Recovered:	5' mud
IHP:	2032
FHP:	2045
IFP:	0
FFP:	0
ISIP:	45
FSIP:	0

Remarks: Tool open for 2 minutes before ISIP. Initial shut in 30 minutes, flow period 1 hour, final shut in 30 minutes. Blow: Very weak for 2 minutes and died, on vacuum died in 20 minutes.

LOGS AND SURVEYS

Ran electrical logs and surveys as follows: On August 10, 1961 Schlumberger Induction-Electrical log was run from 1365' KB to 4694' KB, Schlumberger bottom measured 4695' KB, Driller bottom measurement 4692' KB. On August 10, 1961 Schlumberger Sonic Log was run from 1365' KB to 4687' KB, Schlumberger bottom measured 4693' KB, Driller bottom measurement 4692' KB.

PERFORATIONS

The intervals listed below were perforated with 2 jet shots per foot. (E-log measurements)

2888'-2904' KB
2837'-2842' KB
2829'-2834' KB
2728'-2733' KB
2766'-2772' KB

ACID TREATMENTS

2888' - 2904' KB

The interval 2888'-2904' KB was treated with 2000 gallons Dowell 15X acid as follows:

Breakdown Pressure	1300 to 500
Maximum Pressure	300
Minimum Pressure	100
Instant Shut in Pressure	On vacuum immediately
Average Injection Rate:	4.5 Bbls per min

After recovering load fluid swabbed at 5.5 Bbls per hour salty water no show oil, slight gas show at 3 MCFPD.

2837' - 2842' KB 2829' - 2834' KB

With Baker Model "N" bridge plug set at 2874' KB the interval 2837'-2842' KB was treated with 1000 gallons Dowell 15X acid as follows:

Breakdown Pressure	1100 to 200
Maximum Pressure	400
Minimum Pressure	200
Instant Shut in Pressure	On vacuum immediately
Average Injection Rate	5 Bbls per min

Swab test after stablize, 29.4 MCFPD, 1 Gal Distillate per hour, 2½ - 3 BPH salt water

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The intervals 2829'-2834' KB and 2837'-2842' KB were treated with 10,000 gallons Gel X 100 retarded acid as follows:

Maximum Pressure	1200#
Minimum Pressure	100#
Average Pressure	600#
Drop to zero immediately	
Average injection rate	9 Bbls per min

Swabbed 100 bbls acid water in 12 hours, swabbed 75 bbls load water 50 bbls formation in 12 hours, trace of gas w/ odor condensate.

2728'-2733' KB 2766'-2772' KB

After cement squeezing perfs 2829'-2834' KB and 2837'-2842' KB the intervals 2728'-2733' KB and 2766'-2772' KB were treated with 5000 gallons non emulsifying acid as follows:

Breakdown Pressure	1320
Maximum Pressure	1500
Average Pressure	1100
Instant Shut in Pressure	To zero immediately from 1450 psi
Average injection rate	10 BPM

Swabbed 5 bbls acid waterper hour, no natural gas or oil. Swab 7 hours recovered 35 bbls acid water & formation water.

CEMENT SQUEEZES

Ran 1-3/8" OD tubing with Howco SDC Retainer. Set Retainer at 2804' KB. Pumped 100 sacks common cement into perfs 2829'-34' KB and 2837-42' KB at 3400-3800 psi. Tried to stage last 4 bbls slurry into formation but cement went to formation on vacuum. Had slight pressure build up at end of job. Broke down at about 200 psi and took rest of cement on vacuum. Overdisplaced with 3 bbls water to flush casing.

Squeezed perfs 2829-34' KB and 2837-42' KB at 2800 psi. Shut down pump w/20 sacks in pump line and tubing, staged 15 sacks into formation at 4000 psi, held okay. Released and repressured to 4000 psi, held okay. Pick up tubing and reversed out 5 sacks of cement, left 45 sacks in formation.

PLUG AND ABANDON

Set bridge plug at 2000' KB, parted casing at 1675'. Displaced 25 cu. ft. cement plug from 1675-1615'. Pulled 1675' 2-7/8" casing. Set 15 cu. ft. cement plug surface-27' KB. Welded cap on surface. Cementing was performed by an approved method. The intervals between plugs was filled with 9.3# mud. 1351' of 10-3/4" surface casing cement at 1359' KB and 1328' of 2-7/8" production casing cemented at 3006' KB was left in the hole when plugged.

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