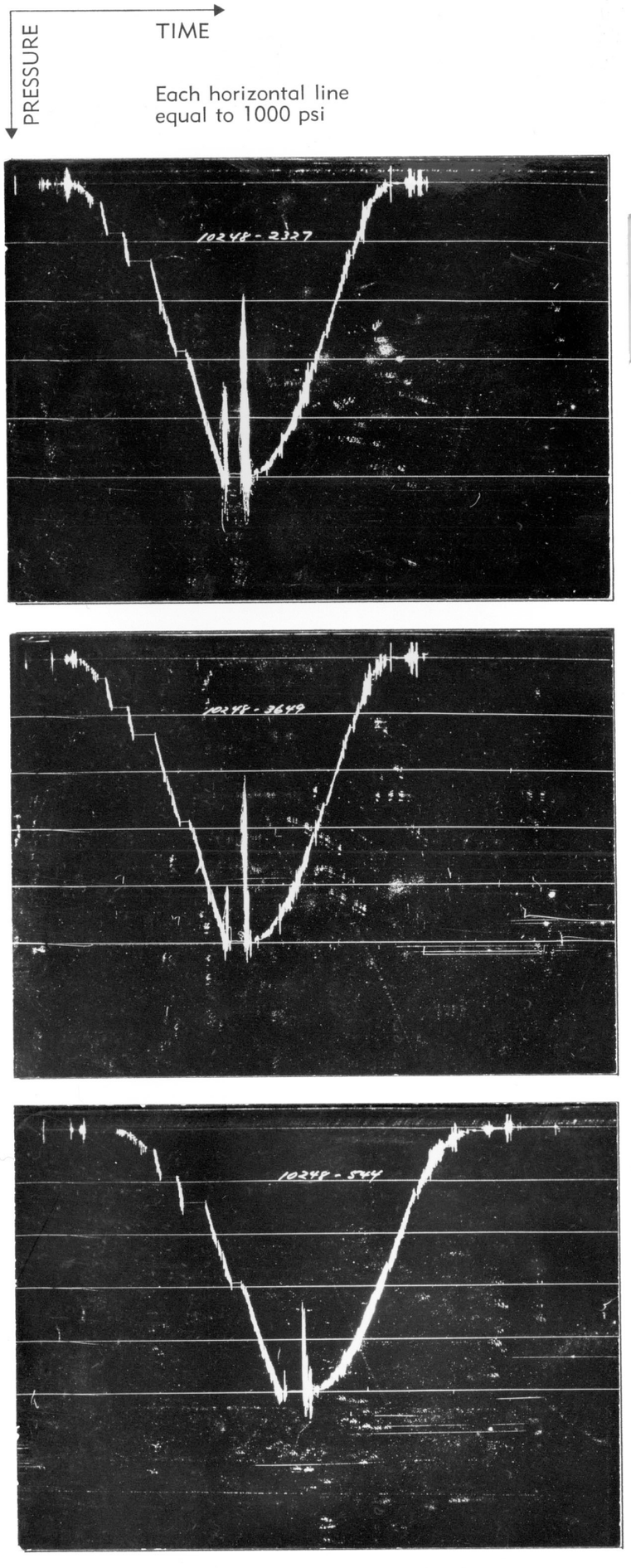
FORMATION TESTING

Technical Report

CALGARY, ALBERTA

A Halliburton Company


PRESSURE
TIME
Each horizontal line
equal to 1000 psi
10248 - 2327
10248 - 3649
10248 - 544
TEMPERATURE RECORD
Each concentric line equals 10° F.
Temperature increases outwardly
Ticket No. 10248
Temperature Range °F
250 °F to 350 °F
A to B — Initial CIP
B to C — 2nd Flow
C to D — Final CIP
A ____ °F
B ____ °F
C MAX °F
D 275 °F
1 Hr.
2 Hr.
3Hr.
4 Hr.
5 Hr.

Halliburton SERVICES LIMITED

FORMATION TESTING
DATA SHEET

REFER TO INVOICE NO. 10248

HALLIBURTON DISTRICT: Ft. Nelson

JOB DATE: February 20, 1973

OWNER, OPERATOR OR HIS AGENT STATES THE WELL IS IN CONDITION FOR THE SERVICE JOB TO BE PERFORMED AND SUBMITS THE FOLLOWING DATA:

PRESSURE DATA

	TOP	CENTRE	BOTTOM
GAUGE NUMBER	2327	3649	544
GAUGE DEPTH	11248	11272	11396
BLANKED OFF	YES/NO	YES/NO	YES/NO
HOUR CLOCK TRAVEL	24	24	24
INITIAL HYDROSTATIC	4941	4962	4975
FIRST FLOW INITIAL			
FIRST FLOW FINAL			
FIRST CLOSED IN			
SECOND FLOW INITIAL			
SECOND FLOW FINAL			
SECOND CLOSED IN			
THIRD FLOW INITIAL			
THIRD FLOW FINAL			
THIRD CLOSED IN			
FINAL HYDROSTATIC	4967	4984	4998

TYPE OF TEST: Dual Bottom Hole	TESTER: B. Miller	EMPL. NO.: 219
WITNESS: J. Lee	DRILLING CONTRACTOR: Peter Bawden #31	

EQUIPMENT AND WELL DATA

FORMATION TESTED	GAUGE DEPTH 275 °F MEAS. / TEMPERATURE °F EST.
NET PRODUCTIVE THICKNESS FT.	MUD TYPE: Gel
K B ELEVATION: 2034	MUD WEIGHT: 8.5 MUD VISC.: 50
ALL DEPTHS MEASURED FROM: ☑ KB ☐ GROUND	CASING OR HOLE SIZE: 8 1/2"
PACKER DEPTHS TOP: 11271 BOTTOM:	RATHOLE SIZE: NA
DEPTH OF TESTER VALVE: 11237	DRILL PIPE OD: 5" WEIGHT: 19.5
CASING PERFORATED INTERVAL: NA	DRILL COLLARS ABOVE TESTER ID: 2 7/8" LENGTH: 658'
TOTAL DEPTH: 11400	SURFACE CHOKE: 1"
AMOUNT AND TYPE CUSHION: water 3000 '	BOTTOM CHOKE: 5/8"

FLUID SAMPLER DATA

SAMPLER PRESSURE AT SURFACE _____ PSIG

RECOVERY: C.C. OIL _____ CU.FT. GAS _____

C.C. WATER _____

C.C. MUD _____

TOTAL LIQUID C.C. _____

SAMPLE SHIPPED TO LABORATORY: YES ☐ NO ☐

OIL GRAVITY _____ API @ _____ °F

GAS/OIL RATIO _____ CU.FT./BBL.

	RESISTIVITY/REFRACTOMETER/SP. GR. READING			CHLORIDE CONTENT
RECOVERY WATER		@ °F		PPM
RECOVERY MUD FILTRATE		@ °F		PPM
MUD PIT SAMPLE FILTRATE		@ °F		PPM

TIME PERIODS

	FIRST	SECOND	THIRD		AM	PM
FLOW				TESTER OPENED		
CLOSED IN				PACKER UNSEATED		

LIQUID RECOVERY DATA

MEASURED FROM TESTER VALVE: FEET	DESCRIPTION OF LIQUID
1841	Drilling mud.
1841	TOTAL LIQUID RECOVERY

GAS FLOW RATE DATA

TYPE OF INSTRUMENT: ☐ CRITICAL FLOW PROVER ☐ PITOT TUBE ☐ ORIFICE WELL TESTER ☐ SIDE STATIC

FLOW TIME	INSTRUMENT PRESSURE "WATER	"MERC.	PSI	ORIFICE SIZE	GAS TEMP.	GAS RATE MCFD @ 60°F

REMARKS: Misrun. Could not get packer seat.

COMPANY: AMOCO CANADA PETROLEUM CO LTD.

LEGAL DESCRIPTION: 65 41' 12.62 133 07' 52.10

PROVINCE OR TERRITORY: YUKON

FIELD OR AREA: CRANSWICK

TEST NUMBER: 6

WELL NAME AND NUMBER: AMOCO PCP B-1 CRANSWICK

TESTED INTERVAL: 11271-11400

NOMENCLATURE

AOF = absolute open flow potential, MCFD

AOF_t = theoretical absolute open flow potential if damage were removed, MCFD

B = formation volume factor, res bbl/ST bbl

c = compressibility, psi^{-1}

D = gauge depth from KB, ft

DR = damage ratio, dimensionless

E = KB elevation, ft

F = drill pipe capacity, bbl/ft

G = hydrostatic gradient of recovery fluid, psi/ft

h = net productive thickness of formation, ft

h^1 = thickness of test interval, ft

k = average effective permeability, md

k^1 = estimated average effective permeability, md

m = slope of final CIP buildup plot, psig/cycle ($psig^2$/cycle for gas)

M = slope of flow plot, min^{-1}

P_D = average pressure drop across damaged zone during flow, psig

P_f = reservoir pressure, psig

P_s = wellbore flow pressure, psig

$\overline{P}$ = weighted average wellbore flow pressure, psig

PI = productivity index, bbl/day-psi

PI_t = theoretical productivity index if damage were removed, bbl/day-psi

PS = potentiometric surface, fresh water corrected to 100°F, ft

Q = average liquid production rate during test, bbl/day

Q_g = measured gas production rate, MCFD at 60°F, 14.4 psig, sp. gr. 0.60

Q_m = maximum production rate, U.S. gal/min

Q_{mt} = maximum theoretical production rate if damage were removed, U.S. gal/min

q = flow rate calculated from hydrostatic of recovery, psi/×min

r_i = radius of investigation, ft

r_w = wellbore or shaft radius, ft

R_s = solution gas-oil ratio, MCFD/ST bbl

s = fluid saturation, fraction

t = effective flow time, min

t_f = time interval from start of continuous production to some future point of interest, min

T = reservoir temperature, °R

μ = viscosity, cp

x = time increment during which q values are calculated, min

Z = compressibility factor, dimensionless

ϕ = porosity, fraction

θ = time point during the closed-in period, minutes

Subscripts

g = gas

o = oil

w = water

t = total