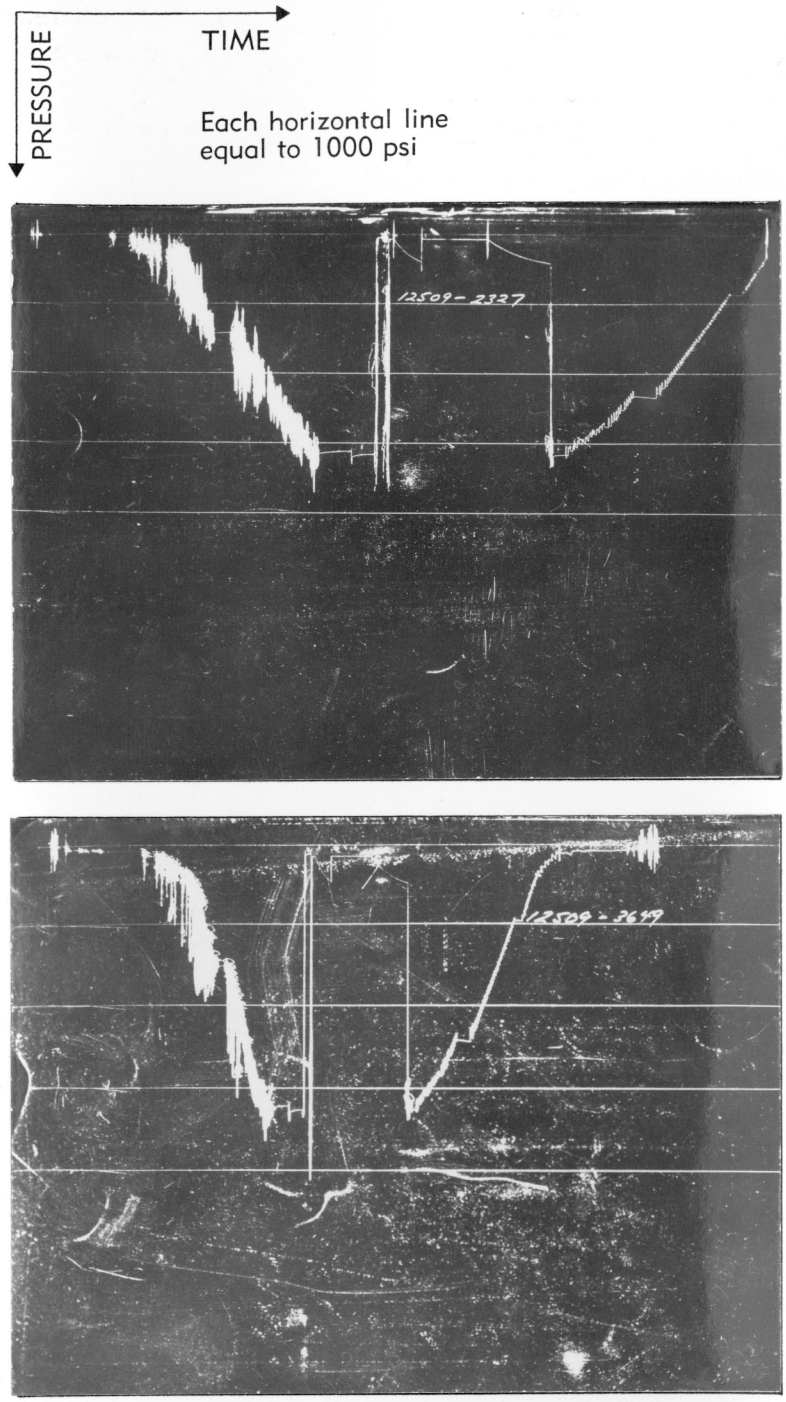
FORMATION TESTING

Technical Report

HALLIBURTON
SERVICES LIMITED

CALGARY, ALBERTA

A Halliburton Company


TIME
PRESSURE
Each horizontal line
equal to 1000 psi
12509-2327
12509-2649
TEMPERATURE
RECORD
Each concentric line
equals 10° F.
Temperature increases
outwardly
Ticket No. 12509
Temperature Range °F
70 °F to 170 °F
A to B — Initial CIP
B to C — 2nd Flow
C to D — Final CIP
A 175 °F
B 175 °F
C 175 °F
D 175 °F
1 Hr.
2 Hr.
3Hr.
4 Hr.
FORM 418

Halliburton SERVICES LIMITED

FORMATION TESTING
DATA SHEET

REFER TO INVOICE NO. 12509

HALLIBURTON DISTRICT: Ft. Nelson

JOB DATE: Jan. 24, 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
GAUGE DEPTH	7103		7270
BLANKED OFF	~~YES~~/NO	YES/NO	YES/~~NO~~
HOUR CLOCK TRAVEL	12		24
INITIAL HYDROSTATIC	3157		3259
FIRST FLOW INITIAL	75		115
FIRST FLOW FINAL	66		143
FIRST CLOSED IN	393		464
SECOND FLOW INITIAL	66		138
SECOND FLOW FINAL	73		145
SECOND CLOSED IN	415		483
THIRD FLOW INITIAL			
THIRD FLOW FINAL			
THIRD CLOSED IN			
FINAL HYDROSTATIC	3153		3252

TYPE OF TEST	TESTER	EMPL. NO.
Bottom Hole	H. Knippel	244
WITNESS	**DRILLING CONTRACTOR**	
D. Snydmiller	Bawden 31	

EQUIPMENT AND WELL DATA

FORMATION TESTED: Hume	GAUGE DEPTH 175 °F MEAS. / TEMPERATURE °F EST.
NET PRODUCTIVE THICKNESS FT.	MUD TYPE: Gel
K B ELEVATION	MUD WEIGHT 8.5 MUD VISC. 57
ALL DEPTHS MEASURED FROM: ☑ KB ☐ GROUND	CASING OR HOLE SIZE 8½"
PACKER DEPTHS TOP / BOTTOM: 7125	RATHOLE SIZE: NA
DEPTH OF TESTER VALVE: 7092	DRILL PIPE OD: 5.0" WEIGHT: 19.5
CASING PERFORATED INTERVAL: NA	DRILL COLLARS ABOVE TESTER ID: 2 7/8" LENGTH
TOTAL DEPTH: 7272	SURFACE CHOKE
AMOUNT AND TYPE CUSHION: Nil	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	5	60		TESTER OPENED	8:20	
CLOSED IN	30	60		PACKER UNSEATED	10:55	

LIQUID RECOVERY DATA

MEASURED FROM TESTER VALVE

FEET	DESCRIPTION OF LIQUID
180	Mud.
180	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 Good air blow on preflow. Good air blow on second flow dying to fair air blow after 30 min.

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: 1

WELL NAME AND NUMBER: AMOCO PCP B-1 CRANSWICK

TESTED INTERVAL: 7125 - 7272

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