K 12022/15

1800-1810
3310-20
7710-20

WELL HISTORY REPORT

SHELL TRAIL RIVER H-37

SHELL CANADA LIMITED

Document No.

APRIL 1977

K 12022/16

WELL HISTORY REPORT

TABLE OF CONTENTS

(Index and check list)

GENERAL DATA

K 12022/17

	SUMMARY	WELL NAME AND NUMBER: SHELL TRAIL RIVER H-37

Shell Trail River H-37 is located approximately 60 miles due south of the townsite of Ft. McPherson and 3 miles northwest of Shell Peel River B-6 (D & A, 1967). The purpose of the well was to test anomalous characteristics within the massive shelf carbonate section, indicated by seismic, for hydrocarbon accumulations.

The drilling contractor was ADECO Drilling and Engineering Co. Limited.

The subject well was spudded on November 27, 1973 and drilled to a total depth of 12,210 feet. Rig release was March 26, 1974.

The hole bottomed in carbonates of Siluro-Ordovician Age. No oil or gas zones were encountered and the well was plugged back to surface and abandoned.

REPORT PREPARED BY:	DATE:
Beaufort/Peel	April/1974

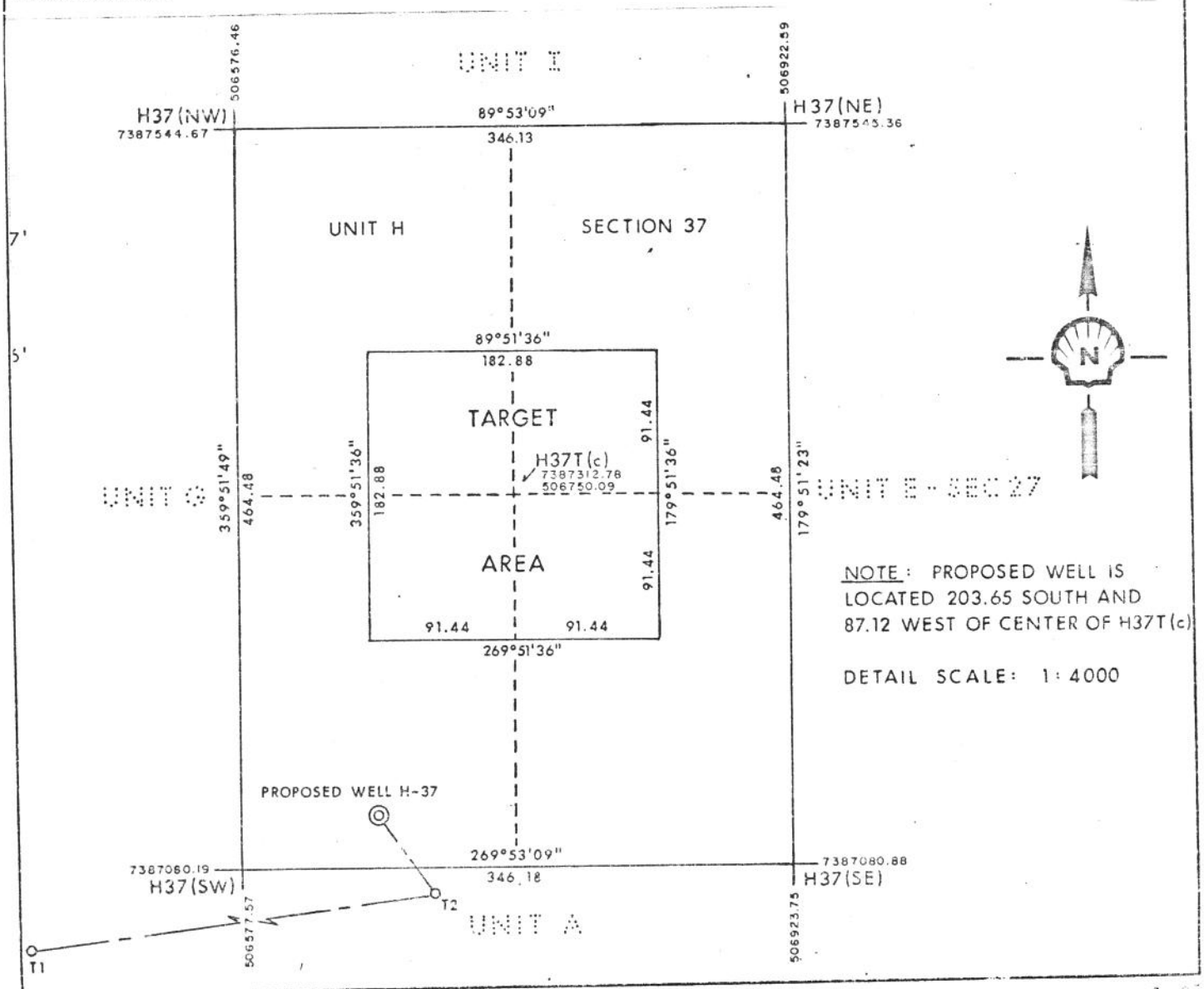
REPORT SUBMITTED BY:	DATE:	TITLE:	DATE:
S McMurtry	May 10, 1974	Western Division Exploration-Manager	

K 12022/19

SUMMARY OF WELL DATA

WELL NAME AND NUMBER	SHELL TRAIL RIVER YTH-37
CO-ORDINATES SURVEY SYSTEM	LATITUDE 66°36'16.10" LONGITUDE 134°50'58.68"
GRID CO-ORDINATES	66-40-134-45
PERMIT No. ~~OR LEASE~~	3612
DRILLING AUTHORITY NUMBER:	728
STATUS	Abandoned
UNIQUE WELL IDENTIFIER:	300H376640134450
PERMITEE/OPERATOR	Shell Canada Ltd. & Shell Explorer Ltd. Operator - Shell Canada Ltd.
LOCATION	Unit H Section 37 Grid 66-40-134-45
AAPG CLASSIFICATION	
ELEVATIONS	G.E. 1264.1 K.B. 1290
TOTAL DEPTH	12210 T.D. 8373 P.B.T.D.
DRILLING CONTRACTOR	Adeco Drilling & Engineering Co. Ltd. Rig 10
DATE AND HOUR SPUDDED	8:00 P.M. 27/11/73
DATE COMPLETED DRILLING	17/3/74
DATE COMPLETED ABANDONMENT	26/3/74
DATE AND HOUR RIG RELEASED	12:00AM 26/3/74

LOCATION PLAT:



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DRILLING DATA

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DRILLING DATA SUMMARY

WELL NAME AND NUMBER: SHELL TRAIL RIVER YTH-37

DRILLING VESSEL/UNIT: ADECO RIG 10

SPUD: 8:00 P.M. Nov. 27/73

HOLE SIZE

SIZE	TO DEPTH (RT)
36"	83
24"	533
17-1/2	2144
12-1/4	8575
8-1/2	12210 T.D.

BLOWOUTS OR OTHER DIFFICULTIES ENCOUNTERED

During drilling of initial 533' of hole, formation around conductor pipe kept washing out. Required 6 additional cement jobs around conductor.

CASING RECORD

DATE	SIZE	JOINTS	WT	GRADE	SHOE DEPTH	MAKE
Nov. 23/73	26"	2	.364		83'	Conductor pipe
Dec. 6/73	20"	13	94	H-40	529	
Dec. 19/73	13-3/8"	66	72 & 61	K-55	2144	
Feb. 18/74	9-5/8	211	47 & 40	N-80	8573	

CEMENT ADDITIVES

Cemented 9-5/8" csg. with 825 sx 'G' cement + 0.2%HR_4

FISHING OPERATIONS, LOST CIRCULATION ZONES

Jan. 19/74 Twisted off kelly saver sub., backed off drill string 13 stands down. Screwed into fish on second attempt, Jan. 20/74

ABANDONMENT PLUGS

NUMBER	DATE	INTERVAL	CEMENT
1	23/3/74	12110-12210	88 sx Class 'G' cement
2	24/3/74	8820- 8920	88 sx 'G' Cement tagged top @ 8840
3	24/3/74	8523- 8623	100 sx 'G' Cement tagged top @ 8373
4	26/374	Surface Plug	5 sx 'G' Cement

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	DRILLING EQUIPMENT	WELL NAME AND NUMBER SHELL TRAIL RIVER YT H-37

See Inventory Rig #10 Heli-Hoist 2000.

INVENTORY

RIG #10

HELI-HOIST 2000

Mast and Sub-structure

Lee C. Moore 136' x 1,025,000 GNC helicopter capable hi-floor mast complete with 6 sheave crown block, crown safety platform, winterized racking platform, erection equipment, ladder, tongs, counter weights with a 21' floor, cold temperature construction, model 27415B, Ser. N. T3644.

Drawworks

TBA 2000 single drum drawworks, SN 619-01 complete with air controls, Parkersburg 40" type 342 hydromatic brake, SN #48933, OIME four engine flat set oilbath compound with 2 way crown-o-matic.

Catworks

OIME independent catworks, with two Foster automatic catheads, break-out SN24AH504, make up SN 37AH249 torque tube drive and oilbath chain rotary drive.

Compressors

Three Quincy model 315-15 - SN 827974-L, 827967-L, Spare #826362-S

Power

4 Caterpillar D343B turbo charged diesel engines, SN 62B10305, 62B11441, 62B10537, 62B10816, all with radiator, rated at 345 HP continuous, 425 intermittent, 500 HP maximum each, complete with Barber Kill Switch.

Twin disc torque converters, SN 247128, 247780, 247784, 247775, and power shift transmissions, SN 395521, 395518, 397287, 395527.

Winterization

Northwest Tent and Awning neolon rig enclosure, with 100 MPH wind load design.

Drilling Line

One 1¼" x 6,000' drill lines.

Two 1¼" x 3,200' drill lines.

Travelling Equipment

Ideco Shorty 5 sheave, 265 ton travelling block - hook combination, model UTB 265, SN 208.

Set (2) 2 3/4" x 108" elevator links.

Continental Emsco Type LA-400 quick change assembly 6597-0389.

4½" x 40" hexagon kelly.

Varco 4 KRS pin drive kelly bushing.

Rotary Table

Ideco 23-D Model SR23D, 24" rotary table, SN 306, with solid Varco pin drive, master bushing SN F27E.

Power Tongs

Lamb - Power Unit - model LS353, SN 337
Tong - Model 16,000 SN 382-C.
Range - 2 3/8 - 16".

Kelly Spinner

Foster - type 77, SN 77-02-10, 30 HP hydraulic unit, SN JH6392012.

Weight Indicators

Martin Decker, type D with National type D anchor.

Cameron - type G, SN 73J5278.

Automatic Driller

SWACO Unit 681.

Survey Winch

Commercial Electric Drive Co. model MMG E15DRS, SN 210, line measuring device with transmissions powered by 7½ HP electric motor.

Air Hoist

Ingersol Rand HU air hoist complete, SN 41789.

Accumulator - Tank cap - 244 Gal.

Koomey T-15160-3S, SN 5339, with triplex pressure pump, model T315-15-3, SN 731376B-514 with 2 air pumps.

Koomey remote control station ERC-6, SN 5339.

BOP

One - 20" Shaffer spherical preventer with flanged bottom, 2,000 lb, BHN 217, SN 4427.

One - 13 5/8" Shaffer spherical preventer with hub bottom, 5,000 lb, HN-210, SN 59965.

Two - 13 5/8" Shaffer LWS Autolock single gate preventers, hubbed top and bottom with two 3" hubbed outlets, SN 139659-51, 139659-49.

One - 13 5/8" Shaffer LWS Autolock single gate shear ram preventer, hubbed top and bottom with two 3" hubbed outlets, SN 139696-48.

One - 13 5/8" 5,000 psi hubbed spool with two 3" hubbed outlets.

One - 13 5/8" 5,000 psi hubbed spool with two 3" hubbed outlets - spare.

Four - 13 5/8" 5,000 psi CIW clamps.

Twenty-one 3" 5,000 psi CIW clamps.

Three 3" 5,000 psi CIW clamps - spare.

Seven 3" flanged 5,000 psi Shaffer manual valves - SN B-0210, B-0207, B-0130, B-0151, B-0202, B-0133, B-0212.

One 2" 5,000 psi Shaffer manual valve, SN B-0303.

Two 3" flange to hub 5,000 psi Shaffer, change-over flanges.

Four Shaffer 3" 5,000 psi hydraulic valves, SN B0477, B-0474, B-0224, B-0475.

Six 3" flange to hub adapters.

BOP - continued

Three - 3" hub to hub adapters.

One - 3" hub to hub adapter, 3" spare.

One - 3" weld hub, 5,000 psi - in use.

Four - 3" 5,000 psi blank-hubbed.

Two 3" 5,000 psi blank-flanged.

Two - 3" four way block cross studded, 5,000 psi.

One 3" three way cross flanged, 5,000 psi.

One 3" manual Shaffer adjustable type 34 standard trim choke.

One Swaco automatic adjustable choke. SN 362270, unit #17031 with 2 9/16" choke openings.

Two 3" 5,000 psi hubbed Shaffer check valves.

Two bolt assemblies for 13 5/8" CIW clamp - spare.

Two - 10 ton Coffing chain hoists, M-1007-F.

Two - 3 ton Coffing chain hoists, M-304-F.

Pumps--

Three Halliburton HT400 triplex mud pumps, SN HT8251, HT8609, complete with Gist fluid ends, SN167, 165, 164, 168.

Mud System

Eight helicopter portable steel mud tanks with internal piping and walkways, 12" x 8" x 10", approximate total capacity - 1,000 lbs.

Double Thompson Shale Shaker, model B54D, SN B54D-285.

Four mud mixing units, Cat. D330, SN 4B6622, 4B6634, 4B6213, 4B6636, with ASH centrifugal pumps, type B-6-5, SN 13540UH, 13541UH, 13542UH, 13543UH.

Two automatic mud hoppers - Thompson with Crofts right angle drives, SN 320 1116-6 and EXP3485661.

One conventional mud hopper.

One Swaco degasser, SN 843, complete, IR type 30 model 255, vacuum pump SN 30T324689.

One Pioneer 12 cone desilter, model T12-4S, 12 cone Silt Master, SN CP4-154 with one 30 HP electric motor #83-03233-069.

One ASH pump model B65, SN 13544UH.

One Pioneer desander - model S2-12, SN 7363 with caterpillar, D330, SN 4B6639 with ASH pump SN 134520H.

One Pioneer centrifuge, SN C-7304, complete with a Power unit SN SPU-5, with ASH pump model B-65, SN 13544UH.

Two kelly hoses - 3" max. W.P. 4,000 psi, SN NAC040R, NKA007R.

Alarm System - Measurand, model 2013, SN #55.

Water Tanks

Eight steel enclosed water tanks, approximately 900 bbls total.

Fuel Tanks

Eight steel enclosed diesel fuel tanks, approximately 900 bbls.

Light Plants

Three Caterpillar D-3306, 125 KW, 60 cycle generators each powered by Caterpillar D-3306 turbo charged diesel engines, SN 66D10106, Gen 100TH3651, 66D10101, Gen 100TH3658, 66D10105, Gen 100TH3660.

Dog House

Helicopter, insulated aluminium top mounted dog house with knowledge box, storage bins.

Welders

One Lincoln shield arc, SAE 300-220 electric welding machine, SN A-717780, complete with necessary leads, GM bedford model 220F/F diesel power, SN 695854/6469.

One Lincoln shield arc, SAE 300, DC welder, type S7038, SN TAM6547.

Two Oxy Acetylene sets complete.

Pipe Racks - Catwalks

Four sets (8) steel pipe racks.

Two catwalks.

Boilers

Four Napanee 50 HP, model 33650B, SN 75937, 75938, 75939, 75940, automatic boilers.

One lot of heaters, blowers, piping and controls for heating.

Air Heaters

One Air Heaters Inc. model IDF-20S, SN 117, maximum burner capacity of 3,500,000 BTU with Iron Fireman "Whirlpower" space conditioner, model C-2400 electric controls and other necessary appurtenances.

One Master air heater, SN 2256581.

One Master air heater, SN 2256583.

Drill Pipe and Drill Collars

10,000' plus (340 jts) of 4½" Grade E drill pipe, plastic coated, equipped with 4½" EH connection, flush-hard banded.

5,000' plus (170 jts) of 4½" Grade G-110 drill pipe, plastic coated, equipped with 4½" EH connections, not hard banded.

Ten 8" O.D. x 2 13/16 I.D. x 30' with 6 5/8 API regular connections, zip lift recess, flush-hard banded.

Thirty 6 3/4 OD x 2 13/16 ID x 30' with 5" H-90 connections, zip lift recess, flush-hard banded.

Subs

One upper kelly cock.

One lower kelly cock, 4½" EH box x 4½" EH pin.

Two saver subs, 4½" EH box x 4½" EH pin.

Two changeover subs, 4½" EH box x 5" H-90 pin.

Two changeover subs, 4½" EH box x 6 5/8" regular pin.

One 4½" EH pin x 6 5/8" regular box.

Subs - continued

Two 6 5/8" regular box x 6 5/8" regular box.

Two 5" H-90 box x 4½" regular box.

Twelve throw away subs, 4½ EH box x 4½ EH pin.

Two pick up subs, - 5" H-90 pins.

Two pick up subs, - 6 5/8 regular pins.

One stabbing valve, X-over, 6 5/8 regular pin x 4½ EH box.

One stabbing valve, X-over, 5" H-90 pin x 4½ EH box.

Two changeover subs, - 6 5/8 regular pin x 5" H-90 box.

One inside BOP, 4½ EH box x 4½ EH pin.

Two Hydril back pressure valves, stop I.D. 1.937. SN 51306 - 6 5/8" regular box - pin complete with #31031 stop ring and #18345-4 drop valve. SN50381, 5" H-90 box-pin complete with 31031 stop ring and 18345-4 drop valve.

Handling Tools

One 8" collar elevator, MGG 7½ ID.

One 6 3/4" collar elevator MGG 6 3/16 ID.

Two 4½", 18° MGG, pipe elevators.

Slips

One set 5½ x 7" Woolley type A collar slips.

One set 6 3/4 x 8¼" Woolley type A collar slips.

Two sets 4½" Woolley Drill pipe slips.

Casing Tools

Elevators

One 20" H-150 Web Wilson, 150 ton elevator plus pick up elevator.

One 16" H-150 Web Wilson, 150 ton elevator plus pick up elevator.

One 13 3/8" H-150 Web Wilson, 150 ton elevator plus pickup elevator.
One 9 5/8" H-150 Web Wilson, 150 ton elevator plus pick up elevator.

One 7" H-150 Web Wilson, 150 ton elevator plus pick up elevator.

Slips

One type HCS 20" hinged spider, inserts for 16" and 20" casing.

One set each CMSX casing slips for 20" and 16" casing.

Combination

One BJ 350 ton, 13 3/8" elevator complete with 13 3/8", 9 5/8" and 7" inserts with Varco solid master bushing complete with 13 3/8", 9 5/8" and 7" casing inserts with Varco slips for 7", 9 5/8", 13 3/8" and 16" casing.

Workshop

One 40" x 38" integral with rig shelter.

Cementing Unit

Mixing skid complete.

Incinerator

Howell Refractories - model CY100, SN 1106.

Water Pump and Line

G-D Duplex FFXFE, SN 625-496 and Detroit diesel model PTA 41081.

5,280' lighting line.

Fishing Equipment

149' (5 jts) of 10 3/4", 55.5# wash pipe.

150' (5 jts) of 8" 31# wash pipe.

10 3/4 and 8 1/8" wash pipe drive sub.

10 3/4" and 8 1/8" conventional shoe.

9 5/8" and 7" junk subs.

10 3/4" elevators with 8 1/8" inserts.

Bowen series 150 - 8 1/8" overshot assembly #9815 with:
- 6" grapples
- 6" mill control packer
- 6 3/4" grapple
- 6 3/4" cut lipped guide.
- 6 3/4" pack off.

Bowen Series 150 - 10 5/8" overshot - assembly #5321 with:
- 9" grapple
- 9" cut lipped guide
- 9" pack off
- 8" basket grapple
- 8" plain control packer

Bowen 11¼" junk basket with conventional type A shoe and magnet insert assembly #61977.

Bowen 8 1/8" junk basket with conventional type A shoe and magnet assembly #61955.

One junk sub - 9 5/8" x 6 5/8" pin box.

One junk sub - 7" x 4½" regular pin box.

Intercom System

Sound Service - 8 station telephone system.

Fire Fighting Equipment

Two 2-wheeled Ansuls, model WDC-150D.

14 hand Generals - 30#.

Safety Equipment

Six Scott airpacks with Bauer compressor, model KA13E, SN 97762, with spare bottles.

One Safety Supply resusitator.

2 First Aid Kits.

Stretcher baskets.

Tractor and Crane

Caterpillar D-5 crawler tractor SN96J3495 complete with cab, angle dozer, Prentice hydraulic crane, SN 8T-Z12108-7307, with hydraulic outriggers.

Fork Lift

Caterpillar tow motor, model V60B, SN 83M345 complete with cab.

Toolpushers Unit

1973, 4 wheel drive Ford crew cab, model F260, SN F268CR68851.

Storage Cabinets

Three helicopter portable bins, 6' high x 8' wide x 4' deep, 8 bins per side.

Shale and Sand Augers

Two 6" x 22' screw conveyors with 7½ HP electric motors and shaft mounted gear reducers. (Coutts)

One conveyor belt for shale removal - Universal Trof-Belt, model KL18-4500, SN 1071548.

Exhaust Fans

Three Westinghouse
One Squirrel cage.

Portable Centrifugal Pumps

One electric 3" pump - model 15CCE, Barnes.

Two Yellow Dogs with 3" pumps.

CAMP

One - 24 unit Helicopter transportable drilling camp with Perma Walks, Power harness, complete. Serial numbers:

Washroom	01638660
Washroom	01638589
Water Storage	01638590
Advance with water storage	01638591
Advance storage with stove	01638592
Rec Room	01838593
Cold Storage	02238584
Rec Room with Pool Table	02238661
Rec Room with Pool Table	02238662
Change Room	02238585
Toolpushers	01838594
Engineers	01838583
Radio Room	01838579
Cooks	01838568
Geologists	01838582
Sleeper	01838581
Sleeper	01838658
Sleeper	01838580
Sleeper	01838578
Sleeper	01838577
Sleeper	01838659
Sleeper	01838576
Diner	01838587
Kitchen Unit	06138588

This camp is equipped with sufficient beds and space to operate with a normal load of 36 men, but provides accommodation for up to 63 men in emergencies.

Camp Generators

Two - Cat. model D3306 diesel electric sets with 125 KW EMD Generators.

Engine Serial numbers:	66D10039 & 66D10111
Generator Serial numbers:	173911431

Generator Building

One - 28'L x 8'W x 8'6" building, divisable into 14'L buildings for helicopter transportation.

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DRILLING TIME DISTRIBUTION - HOURS	WELL NAME AND NUMBER SHELL TRAIL RIVER YTH-37

See attached "Drilling Record" sheet.

K 12022/24

DST TESTING SUMMARY

WELL NAME AND NUMBER

SHELL TRAIL RIVER YTH-37

DST NO.	INTERVAL	ISIP (PSI)	FFP (PSI)	FSIP (PSI)	HP. (PSI)	DATE	RECOVERY
1	8573-8822	487	121	670	5299	Feb 25/74	210' mud 1.68 Bbls Fair blow decreasing to weak in 60 min.
2	10350-10450	Misrun					Unable to get packer seat
3	10323-10512	3392	2014	3142	5326	Mar 22/74	Strong air blow Rec 48.3 bbls Filtrate cut water

COMMENTS

All Pressures are field readings.

K 12022/25

WIRELINE TESTING SUMMARY

WELL NAME AND NUMBER

SHELL TRAIL RIVER YTH-37

WLT NO.	DEPTH RT OR INTERVAL	ISIP (PSI)	SPL PRESS (PSI)	FSIP (PSI)	HP. (PSI)	DATE	RECOVERY
No wireline tests run.							

COMMENTS

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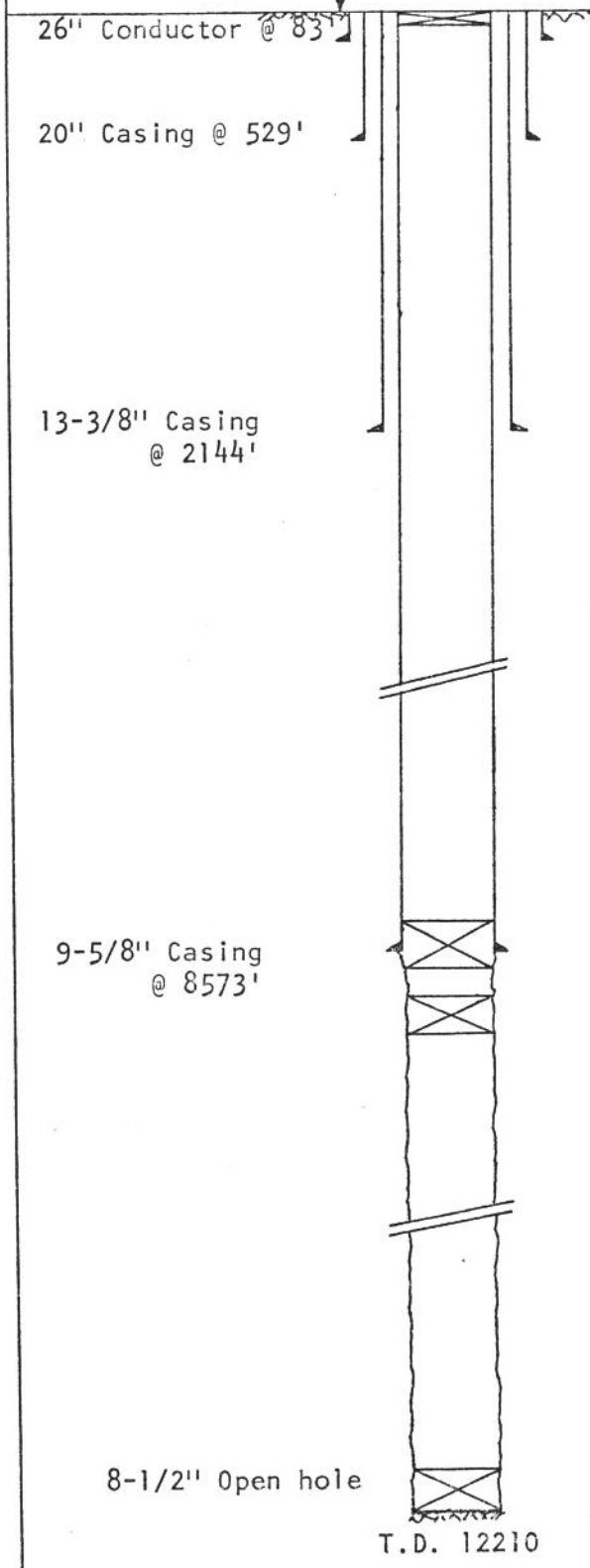
PRODUCTION TEST SUMMARY	WELL NAME AND NUMBER SHELL TRAIL RIVER YTH-37

No Production Tests

K 12022/27

WELL DIAGRAM AND ABANDONMENT DETAILS	WELL NAME AND NUMBER Shell Trail River YT H-37



Cemented conductor pipe with 250 sx. Permafrost. Required 6 additional recementings of 450, 300, 200, 200, 250, 400 sx. jobs using Permafrost cement.

Cemented 20" casing with 1100 sx. Permafrost cement. Recemented top 27' with 30 sx. Permafrost.

Cemented 13-3/8" casing with 1700 sx. Permafrost cement and 550 sx. "G" cement.

Cemented 9-5/8" casing with 825 sx. "G" cement. and 0.2% HR_4.

Plug No. 4 Surface Plug, 5 sx. "G" cement, welded plate on top of casing + 3' riser and well marker.

Plug No. 3 8523-8623 100 sx. "G" cement Felt top @ 8373'.

Plug No. 2 8820-8920 88 sx. "G" cement Felt top @ 8840'

Plug No. 1 12110-12210 88 sx. "G" cement.

GEOLOGY

K 12022/29

SUMMARY OF MECHANICAL LOGS RUN

(SEE APPENDIX FOR COPIES OF LOGS)

WELL NAME AND NUMBER: SHELL TRAIL RIVER H-37

RUN NUMBER	DATE	TYPE	INTERVAL
1.	Dec. 13/73	Borehole Compensated sonic	531-2191
	Dec. 13/73	Dual Laterolog	531-2179
	Dec. 14/73	Formation Density	531-2191
	Dec. 14/73	Proximity Microlog	531-2188
	Dec. 14/73	High Resolution Dipmeter	531-2191
2.	Feb. 14/74	Borehole Compensated sonic	2142-8563
	Feb. 15/74	Dual Laterolog	2142-8561
	Feb. 16/74	Formation Density	2142-8571
	Feb. 16/74	High Resolution Dipmeter	2142-8571
3.	Mar. 17/74	Borehole Compensated sonic	8568-12, 192
	Mar. 17/74	Dual Laterolog	8568-12, 200
	Mar. 18/74	Formation Density	8568-12, 202
	Mar. 18/74	High Resolution Dipmeter	8568-12, 198

K 12022/30

SAMPLE AND CORE DATA

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

DITCH CUTTINGS

TOTAL INVERVAL SAMPLED FROM 0 TO 12,210

SAMPLE INTERVAL

MATERIAL STORAGE LOCATION	SPL	CORE	FROM	TO	FREQUENCY
1. SHELL CANADA LTD. CALGARY WAREHOUSE CALGARY, ALBERTA	X		0	750	ONE SAMPLE EVERY 30 FEET
2. INSTITUTE OF SEDIMENTARY & PETROLEUM GEOLOGY 3303-33 ST. NW. CALGARY, ALBERTA	X		750	12,210	ONE SAMPLE EVERY 10 FEET
3. NOVA SCOTIA DEPT. OF MINES STELLARTON, NOVA SCOTIA					
4. ALBERTA CONSERVATION BOARD					
5. DEPT. OF ENERGY MINES & RESOURCES BEDFORD INSTITUTE DARTMOUTH, N.S.					
6. OTHER					

CONVENTIONAL CORE

NO.	SIZE	INTERVAL	RECOVERY	DATE CORED
1	3"	8585-8615	30'	Feb. 22/74

COMMENTS:

Majority of the sidewall cores were tested to destruction for paleontological and petrophysical data.

K 12022/31

SAMPLE DESCRIPTION	WELL NAME AND NUMBER SHELL TRAIL RIVER H-37

See Following Pages:

DESCRIBED BY J. Dooge

DATE April, 1974

LITHOLOGIC DESCRIPTIONS

The following descriptions of sidewall samples, ditch cuttings and cores are derived from lithologic data sheets prepared during microscopic examination. This data is punched onto Hollerith cards and played-out in a standardized vocabulary.

The order of description is as follows: top of interval or depth of sidewall sample; rock type; color; lithologic modifiers; particle type; particle size (mode and range); angularity; consolidation; fauna, flora, accessory minerals; sedimentary structures; porosity; permeability; hydrocarbon shows; comments.

Where more than one rock type is present the dominant one is described first and others follow in quantitative order; individual descriptions are separated by xxx interbedded with xxx.

Percentage estimates are from visual examination and vary with the individual. Colors are keyed to the Munsell system whenever possible. Carbonates are classified according to Dunham: Classification of Carbonate Rocks - A Symposium, Memoir No. 1; The American Association of Petroleum Geologists, 1962.

Please note the following punctuation discrepancies which are due to machine limitations:

Colon (:) is written (..)
Semicolon (;) is written (.,)
Percent (%) is written (PCT)

SAMPLE DESCRIPTION
SHELL TRAIL RIVER H-37

0'- 180'	90% Shale, medium dark gray, soft; 10% Clay, siltstone, trace chert.
180'- 540'	100% Silty shale, medium dard gray, soft; Trace siltstone and clay.
540'-1050'	100% Medium dark gray shale, medium hard; Traces of chert and siltstone.
1050'-1400'	100% Shale, black to gray, fissile, micromicaceous; Traces of pyrite and siltstone.
1400'-1870'	100% Shale, gray to black, hard, micromicaceous; Traces of pyrite.
1870'-2070'	95% Shale as above; 5% very fine sandstone, friable.
2070'-2140'	90% Shale as above; 10% Sandstone, midium-fine grained, sub-rounded to sub-angular, friable; Trace of chert.
2140'-2220'	80% Shale as above; 20% Sandstone as above.
2220'-2260'	100% Shale, dark gray, hard, micromicaceous.
2260'-2370'	40 to 50% Shale, gray to dard gray, silty, micaceous; 50 to 60% Sandstone, light gray to tan, fine to very fine, sub-rounded to sub-angular, siliceous cement.
2370'-2440'	100% Shale as above.
2440'-2570'	70 to 90% Shale as above; 10 to 30% Sandstone as above.
2570'-2620'	40 to 60% Shale as above; 40 to 60% Sandstone as above; Trace of chert.
2620'-2690'	90 to 100% Shale as above; 0 to 10% Sandstone as above.
2690'-2720'	60% Shale as above; 40% Sandstone as above.

Sample Description (Cont'd)

2720'-2760'	10% Shale as above; 80% Sandstone; 10% Siltstone.
2760'-2780'	80% Shale as above; 20% Silstone.
2780'-2800'	20% Shale as above; 80% Siltstone.
2800'-2900'	60 to 80% Shale as above; 20 to 40% Siltstone.
2900'-2930'	20 to 40% Shale as above; 60 to 80% Siltstone.
2930'-3010'	70 to 90% Shale, light gray, hard; 10 to 30% Siltstone, light gray to brown, hard.
3010'-3090'	40 to 60% Shale as above; 40 to 60% Siltstone.
3090'-3160'	60 to 90% Shale, medium to dark gray, silty, hard; 10 to 40% Siltstone, gray to brown.
3160'-3210'	60 to 70% Shale as above; 30 to 40% Sandstone, very fine grained, white to light gray, sub-rounded to sub-angular.
3210'-3320'	80% Shale as above; 10% Sandstone as above; 10% Siltstone.
3320'-3550'	100% Shale, light to medium gray, splintery; Trace of siltstone.
3550'-3650'	50 to 70% Shale as above; 30 to 50% Sandstone very fine to medium grained, 6-12% porosity, white to light gray.
3650'-3880'	10 to 20% Shale as above; 80 to 90% Sandstone as above.
3880'-3960'	60 to 90% Shale, medium to dark gray, silty, trace pyrite; 10 to 30% Sandstone as above.
3960'-4090'	90 to 100% Shale as above; 0 to 10% Sandstone as above.

Sample Description (Cont'd)

4090'-4140'	10 to 20% Shale as above; 80 to 90% Sandstone, sub-rounded, fine to very fine grained, poorly consolidated, trace pyrite.
4140'-4160'	50% Shale; 50% Sandstone.
4160'-4250'	90 to 100% Shale, medium to dark gray, silty; 0 to 10% Sandstone, white to light gray, trace pyrite.
4250'-4330'	70 to 80% Shale as above; 20 to 30% Sandstone, angular, very fine grained.
4330'-4480'	50% Shale as above; 50% Sandstone as above.
4480'-4510	30% Shale, medium gray, bulky, silty, trace pyrite; 70% Sandstone, white to light gray, sub-angular, very fine.
4510'-4550'	50 to 60% Shale as above; 40 to 50% Sandstone as above.
4550'-4710'	10 to 20% Shale as above with some coal stringers; 80 to 90% Sandstone as above.
4710'-4860'	30 to 60% Shale as above; 20 to 50% Sandstone as above; 20% Siltstone, medium to dark gray.
4860'-5020'	80% Shale, medium gray, silty, trace pyrite; 10% Sandstone, sub-angular to sub-rounded, fine to very fine grained, consolidated, no visible porosity; 10% Siltstone, light to medium gray.
5020'-5240'	80 to 100% Shale as above; 0 to 20% Siltstone.
5240'-5390'	80% Shale, dark gray, bulky, silty, micromicaceous; 20% Siltstone, gray brown, hard, trace pyrite.
5390'-5490'	60 to 70% Shale, medium to dark gray, hard silty; 30 to 40% Siltstone.
5490'-5640'	70 to 90% Shale as above; 30 to 40% Siltstone as above.

Sample Description (Cont'd)

5640'-5780'	60 to 70% Shale, medium to dark gray, brittle; 10% Sandstone, white to light gray, very fine grained, hard. 20 to 30% Siltstone.
5780'-5850'	30 to 50% Shale as above; 10 to 40% Sandstoen as above; 30 to 40% Siltstone.
5850'-5890'	20% Shale as above; 60% Sandstone; 20% Siltstone, light to dark gray, slightly sandy.
5890'-5990'	40% Shale, gray to dark gray, splintery and fissile, trace mica; 50% Sandstone, fine to medium grained, sub-angular to sub-rounded; 10% Siltstone.
5990'-6050'	20% Shale as above; 70% Sandstone as above; 10% Siltstone.
6050'-6230'	60 to 80% Shale as above; 10 to 20% Sandstone; 10 to 20% Siltstone.
6230'-6270'	40% Shale as above; 40% Sandstone; 20% Siltstone.
6270'-6320'	60 to 80% Shale, medium to dark gray, bulky, hard; 20 to 40% Sandstone.
6320'-6390'	50% Shale as above; 30% Sandstone; 20% Siltstone.
6390'-6450'	30% Shale as above; 40% Sandstone; 30% Siltstone.
6450'-6670'	20 to 40% Shale as above; 20 to 30% Sandstone as above; 40 to 50% Siltstone.
6670'-6880'	30 to 50% Shale, medium to dark gray, micromicaceous, silty; 20 to 30% Sandstone, fine to very fine grained, sub-rounded to sub-angular, salt and pepper; 30 to 40% Siltstone, gray to brown,tight; Trace pyrite.

Sample Description (Cont'd)

6880'-7070'	40 to 60% Shale as above; 10 to 30% Sandstone; 30% Siltstone.
7070'-7140'	40 to 60% Shale as above; 40 to 60% Siltstone, gray to brown, sandy; Trace chert nodules.
7140'-7390'	80 to 90% Shale as above; 10 to 20% Siltstone as above.
7390'-7680'	70 to 80% Shale, dark to medium gray, splintery, fissile, bulky, slightly micromicaceous. 20 to 30% Siltstone as above.
7680'-7760'	50 to 60% Shale as above; 10 to 20% Sandstone, angular to sub-rounded, very fine grained, gray to brown; 30% Siltstone; Trace calcite.
7760'-7900'	40 to 70% Shale as above; 30 to 60% Siltstone.
7900'-7990'	50% Shale as above; 20% Sandstone; 30% Siltstone.
7990'-8070'	30% Shale as above; 70% Siltstone.
8070'-8180'	60 to 70% Shale, gray to dark gray, bulky, hard, brittle, silty; 30 to 40% Siltstone, gray to gray brown, hard, occassionally friable, predominantly siliceous, slightly calcitic cement.
8180'-8350'	20 to 40% Shale as above; 60 to 80% Siltstone as above.
8350'-8490'	60 to 70% Shale as above; 30 to 40% Siltstone as above.

SHELL CANADA LIMITED

EXPLORATION AND PRODUCTION DEPT.

LITHOLOGIC DESCRIPTION

PROVINCE YT. COMPANY SHELL CANADA LTD. AREA WILDCAT

WELL NAME TRAIL RIVER H-37.

TOTAL DEPTH 12210 COMMENCED 27/11/73 COMPLETED / /

LAT. 66. DEG 36. MIN 16.10 SEC LONG. 134. DEG 50. MIN 58.68 SEC

DATE LOGGED 22/03/74 BY DR. JASPER DOOGE.

ELEVATION AT 0000 WATER DEPTH

LOGS AND ANALYSIS

SGR
DENSITY
CDM
VEL

REMARKS

DITCH CUTTING LOG. MELISA REPRESENTATION
BY BARBARA SURPLUS.

8490	SHALE	THIN BEDS. DARK GREY., 30PCT SILT.
		INTERBEDDED WITH
	SHALE	DARK GREY., 10PCT SILICEOUS.. HARD.
8540	SHALE	DARK GREY., TRACE OF SILT.
		COMMENTS- HARD, FIRM, BLOCKY LIGHT BROWN STREAK. CORED INTERVAL.
8615	SHALE	DARK GREY.
		INTERBEDDED WITH
	SHALE	DARK GREY., 40PCT QUARTZ SILT.. HARD.
8690	SHALE	BROWNISH GREY.
		COMMENTS- GREASY LUMP APPEARANCE. BITUMI NOUS. BROWN STREAK.
8710	SHALE	THIN BEDS. DARK GREY., 20PCT SILT, TRACE OF MICA.
		INTERBEDDED WITH
	SILTSTONE QUARTZOSE	DARK GREY., 50PCT ARGILLACEOUS MATERIAL., TRACE OF MICA.
8780	SHALE	DARK GREY., 10PCT QUARTZ SILT.
		COMMENTS- FLAKY APPEARANCE. NO SAMPLE AVAILABLE.
8830	SHALE	DARK GREY., 10PCT QUARTZ SILT.
		INTERBEDDED WITH
	SHALE	BROWNISH GREY.. RICH IN ORGANIC MATTER.
8870	LIMESTONE	MEDIUM GREY., 10PCT ARGILLACEOUS MATERIAL., TRACE OF CRINOIDS, 60PCT PELLETED MUD, 20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF LIMESTONE CRYSTALS FINE. COMMENTS- IA. SAMPLE TOP PALEOZOIC CARB. AT 8870 FT. THE DARK GREY PELLETS LITHOCLASTS IN THE LT. GREY SPAR MATRIX UNDER A DISTINCT SPECKLED APPEARANCE.
8970	LIMESTONE	THIN BEDS. MEDIUM 20PCT ARGILLACEOUS MATERIAL.. SOLID HYDROCARBIN.
		COMMENTS- IA.
		INTERBEDDED WITH
	LIMESTONE	TRACE OF FOSSILS, 20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF FOSSILS MEDIUM., MODE OF LIMESTONE CRYSTALS VERY FINE., SOLID HYDROCARBIN.
		COMMENTS- IA.
9000	LIMESTONE	20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF LIMESTONE CRYSTALS FINE., SOLID HYDROCARBIN.
		COMMENTS- IA.
9120	LIMESTONE	10PCT ARGILLACEOUS MATERIAL., TRACE OF CRINOIDS.. SOLID HYDROCARBIN.
		COMMENTS- IA.

9140	LIMESTONE	40PCT FOSSILS.. SOLID HYDROCARBIN. COMMENTS- IA.
9160	LIMESTONE	LIGHT GREY., 80PCT PELLETED MUD, 20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF PELLETED MUD VERY FINE. COMMENTS- IA.
9170	LIMESTONE	MEDIUM GREY. COMMENTS- IA.
9180	LIMESTONE	MEDIUM 70PCT PELLETED MUD, TRACE OF FOSSILS, 20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF ROUNDED LITHOCLASTS VERY COARSE., MODE OF FOSSILS COARSE., MODE OF LIMESTONE CRYSTALS FINE. COMMENTS- IA. ALL PARAMETERS SUGGEST A HIGH-ENERGY ENVIRONMENT.
9230	LIMESTONE	THIN BEDS. MEDIUM 80PCT PELLETED MUD, 20PCT SPAR CALCITE.. GRAIN SIZE- MODE OF PELLETED MUD FINE. COMMENTS- IA. ***INTERBEDDED WITH***
	LIMESTONE	DARK GREY. COMMENTS- IA.
9250	LIMESTONE	MEDIUM GREY., 70PCT PELLETED MUD, 30PCT SPAR CALCITE.. GRAIN SIZE- MODE OF PELLETED MUD VERY FINE. COMMENTS- IA.
9270	LIMESTONE	DARK GREY., 10PCT QUARTZ SILT, 20PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
9290	SHALE	MEDIUM GREY., 20PCT QUARTZ SILT, 10PCT CALCAREOUS. COMMENTS- MARINE SHALE.
9470	SHALE	MEDIUM 30PCT QUARTZ SILT, 10PCT CALCAREOUS.
9610	LIMESTONE	MEDIUM 20PCT TWO-HOLE CRINOIDS.. RICH IN ORGANIC MATTER. ***INTERBEDDED WITH***
	SHALE	GREYISH BLACK.. RICH IN ORGANIC MATTER.
9630	SHALE	MEDIUM 20PCT QUARTZ SILT, 10PCT CALCAREOUS.
9660	SHALE	MEDIUM 20PCT QUARTZ SILT, 10PCT CALCAREOUS. ***INTERBEDDED WITH***
	LIMESTONE	10PCT ARGILLACEOUS MATERIAL., 60PCT PELLETED MUD, 20PCT SPAR CALCITE, TRACE OF FOSSILS.. GRAIN SIZE- MODE OF PELLETED MUD VERY FINE., SOLID HYDROCARBIN. COMMENTS- IA.

9990	LIMESTONE	LIGHT BROWNISH GREY., 50PCT TWO-HOLE CRINOIDS, 20PCT PELLETED MUD, 30PCT SPAR CALCITE.. GRAIN SIZE- MODE OF TWO-HOLE CRINOIDS MEDIUM., SOLID HYDROCARBIN. COMMENTS- IA. ENCRINITE AND FRACTURES
10200	LIMESTONE	LIGHT GREY., 50PCT CRINOIDS, 20PCT PELLETED MUD, 30PCT SPAR CALCITE.. GRAIN SIZE- MODE OF CRINOIDS MEDIUM. COMMENTS- IA. EXTRMLY FRACTURED IN INT. ***INTERBEDDED WITH***
	LIMESTONE	LIGHT GREY., 30PCT CRINOIDS.. GRAIN SIZE- MODE OF CRINOIDS MEDIUM. COMMENTS- IA.
10450	LIMESTONE	LIGHT GREY., 20PCT ARGILLACEOUS MATERIAL., TRACE OF TWO-HOLE CRINOIDS. COMMENTS- IA.
10490	SHALE	THIN BEDS. LIGHT GREY., 20PCT CALCAREOUS. ***INTERBEDDED WITH***
	LIMESTONE	LIGHT GREY., 20PCT ARGILLACEOUS MATERIAL. COMMENTS- RADIOLARIA AND STYLIOLINA.
10500	LIMESTONE	MEDIUM GREY., 50PCT TWO-HOLE CRINOIDS. COMMENTS- IA.
10530	SHALE	THIN BEDS. DARK GREY., 20PCT CALCAREOUS.. RICH IN ORGANIC MATTER. ***INTERBEDDED WITH***
	LIMESTONE	DARK GREY., 10PCT ARGILLACEOUS MATERIAL., TRACE OF TENTACULITES. COMMENTS- IA. TRACE SMALL DIAMETER CR2. PROMINENT AND NEAR EXCLUSIVE STYLIOLINA-TENTACULITES ASSEMBLAGE (PELAGIC). ALSO TRACE OF DARK GREY CHERT NODULES.
11080	LIMESTONE	DARK GREY., 70PCT PELLETED MUD, 20PCT SPAR CALCITE, TRACE OF FOSSILS.. GRAIN SIZE- MODE OF FOSSILS FINE., MODE OF PELLETED MUD VERY FINE. COMMENTS- IA.
11110	DOLOMITE	THIN BEDS. BROWNISH BLACK., 50PCT DOLOMITIC TWO-HOLE CRINOIDS. COMMENTS- IA. ***INTERBEDDED WITH***
	LIMESTONE	BROWNISH GREY., 70PCT PELLETED MUD, 20PCT SPAR CALCITE, TRACE OF FOSSILS.. GRAIN SIZE- MODE OF FOSSILS FINE., MODE OF PELLETED MUD VERY FINE. COMMENTS- IA.
11400	DOLOMITE	BROWNISH BLACK. COMMENTS- IA.
11410	DOLOMITE	GREYISH BLACK. COMMENTS- IA.

11440	DOLOMITE	BROWNISH BLACK., 10PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
11450	LIMESTONE	BROWNISH BLACK., 10PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
11460	SHALE	THIN BEDS. DARK GREENISH GREY., 30PCT QUARTZ SILT. COMMENTS- SAMPLE TOP DELORME AT 11460.
		INTERBEDDED WITH
	DOLOMITE	MEDIUM GREY.. GRAIN SIZE- MODE OF PYRITE COBBLE SIZE. COMMENTS- IA. TERRIG. RES. PLAT. FACIES.
11530	DOLOMITE	LIGHT BROWNISH GREY., 10PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
11610	DOLOMITE	LIGHT GREY. COMMENTS- IA. MID. CARB. MBR. INTERIOR- RESTRICTED PLATFORM FACIES
11750	DOLOMITE	MEDIUM GREY. COMMENTS- IA.
		INTERBEDDED WITH
	DOLOMITE	LIGHT GREY. COMMENTS- IA. COLOUR VARIATION SUGGESTS BANDED SEQUENCE.
11870	DOLOMITE	LIGHT GREY. COMMENTS- IIIB C10.
11880	DOLOMITE	MEDI. COMMENTS- IA.
11885	DOLOMITE	LIGHT GREY. COMMENTS- IA. NO SAMPLE AVAILABLE.
12000	DOLOMITE	MEDIUM 10PCT QUARTZ SILT,. 20PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
		INTERBEDDED WITH
	DOLOMITE	LIGHT BROWNISH GREY. COMMENTS- IA. NO SAMPLE AVAILABLE.
12070	DOLOMITE	MEDIUM 10PCT QUARTZ SILT, 20PCT ARGILLACEOUS MATERIAL. COMMENTS- IA.
12075	DOLOMITE	LIGHT BROWNISH GREY. COMMENTS- IA.
12080	DOLOMITE	DARK GREY.. OIL REACTION IN ACID. COMMENTS- IA. FRACTURED. OILY SCUM RESIDUE.
12090	DOLOMITE	LIGHT GREY. COMMENTS- IA.
12110	DOLOMITE	LIGHT BROWNISH GREY. COMMENTS- IA.
		INTERBEDDED WITH

SHALE MEDIUM 10PCT QUARTZ SILT, 40PCT DOLOMITIC.

K 12022/32

CONVENTIONAL CORE DESCRIPTION

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

Core #1 8565-86-15 (recovered 30')

100% shale, dark grey to black, firm, hard and blocky, high percent of rubble. Trace small fractures, silty and carbonaceous. No shows.

DESCRIBED BY D. Sorkilmo

DATE Feb. 22, 1974

K 12022/33

SIDEWALL CORE DESCRIPTION

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

See Following Pages:

DESCRIBED BY I. D. Stewart

DATE April 1974

SHELL CANADA LIMITED

EXPLORATION AND PRODUCTION DEPT.

LITHOLOGIC DESCRIPTION

PROVINCE NWT COMPANY SHELL CANADA LIMITED AREA WILDCAT

WELL NAME TRAIL RIVER YT H-37

TOTAL DEPTH COMMENCED / / COMPLETED / /

LAT. 66. DEG 36. MIN 16.00 SEC LONG. 134. DEG 50. MIN 59.00 SEC

DATE LOGGED 20/02/74 BY I.STEWART

ELEVATION AT 0000 WATER DEPTH

LOGS AND ANALYSIS

REMARKS

575	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. SOFT., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. THIN(.5MM) SLT LAMINAE.
603	SHALE	DARK BROWNISH GREY., 10PCT SILT.. FIRM. COMMENTS- N.S. THIN(.5-1MM) SLT LAM.
657	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. FIRM. COMMENTS- N.S. THIN (.2-1MM) SLT LAM.
699	SHALE	DARK BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 2PCT. COMMENTS- N.S.LENSES AND THIN LAM. SLT.
725	SHALE	DARK BROWNISH GREY., 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.THIN SLT LAM.(.5-1MM)
762	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. THIN SLT LAM.
820	SHALE	DARK BROWNISH GREY.. SOFT., CARBONACEOUS MATERIAL 1PCT, SILT 3PCT. COMMENTS- N.S.THIN SLT LAM. TR.VFG SAND.
888	SHALE	MEDIUM BROWNISH GREY.. FIRM., MICA 1PCT, SILT 1PCT. COMMENTS- N.S.
925	SHALE	DARK BROWNISH GREY., 20PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. THIN SLT LAM.
953	SHALE	DARK BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 2PCT, SILT 1PCT, IRONSTONE NODULES 1PCT. COMMENTS- N.S.
1029	SHALE	DARK BROWNISH GREY., 10PCT SILT.. FIRM. COMMENTS- N.S.
1056	SHALE	MEDIUM TRACE OF SILT.. FIRM. COMMENTS- N.S.
1098	SHALE	MEDIUM BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, PYRITE 1PCT, SILT 1PCT. COMMENTS- N.S. PYRITE IN NODULES.
1149	SHALE	MEDIUM TRACE OF SILT.. FIRM., MICA 1PCT. COMMENTS- N.S.
1181	SHALE	DA.. FIRM., CARBONACEOUS MATERIAL 3PCT, MICA 1PCT. COMMENTS- N.S.

1234	SHALE	DARK BROWNISH GREY.. FIRM., SILT 1PCT. COMMENTS- N.S.
1279	SHALE	DARK TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.
1318	SHALE	DARK BROWNISH GREY.. FIRM., SILT 1PCT. COMMENTS- N.S.
1389	SHALE	DARK BROWNISH GREY.. FIRM., MICA 1PCT, SILT 1PCT. COMMENTS- N.S.
1430	SHALE	DARK TRACE OF SILT.. FIRM. COMMENTS- N.S.
1482	SHALE	MEDIUM BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 2PCT. COMMENTS- N.S. TR.CHALCOPYRITE.
1530	SHALE	MEDIUM BROWNISH GREY.. FIRM., SILT 1PCT. COMMENTS- N.S.
1576	SHALE	MEDIUM BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 2PCT. COMMENTS- N.S. TR. CHALCO.
1614	SHALE	MEDIUM BROWNISH GREY.. FIRM. COMMENTS- N.S.
1664	SHALE	DA.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 2PCT. COMMENTS- N.S.
1700	SHALE	DARK BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 1PCT. COMMENTS- N.S.
1773	SHALE	DA.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.
1814	SHALE	DARK BROWNISH GREY.. SOFT., CARBONACEOUS MATERIAL 1PCT, SILT 1PCT. COMMENTS- N.S.
1858	SHALE	DARK TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. .5 CM BAND HAS A GRNISH CAST,LIKELY DUE TO CHLORITE.
1883	SHALE	MEDIUM BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 1PCT. COMMENTS- N.S.CHALCO. ALONG SOME BDG PLANES.
1927	SHALE	DA.. SOFT., SILT 2PCT. COMMENTS- N.S.

1969	SHALE	DARK BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.
1994	SHALE	DA.. FIRM., CARBONACEOUS MATERIAL 1PCT, PYRITE 1PCT, SILT 1PCT. COMMENTS- N.S.PYR.DISS.,ALSO REPL.FOSS. FRAGS ALONG W/ SILICA.
2047	SHALE	DA.. FIRM., SILT 1PCT. COMMENTS- N.S.
2060	SILTSTONE	LIGHT 30PCT SAND, 20PCT ARGILLACEOUS MATERIAL.. GRAIN SIZE- MODE OF SAND VERY FINE, RANGE FINE TO EXTREMELY FINE., FRIABLE., GLAUCONITE 2PCT, CALCAREOUS MATERIAL 1PCT., 5PCT. COMMENTS- N.S. V.P.SORTED. FAINTLY LAM. DUE TO CHANGE IN SST CONTENT.
2076	SHALE	MEDI.. HARD., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.CRB MATERIAL IN FLECKS UP TO .3MM.
2105	SANDSTONE QUARTZOSE	LIGHT 40PCT SILT, 20PCT ARGILLACEOUS MATERIAL.. GRAIN SIZE- MODE OF GLAUCONITE VERY FINE, RANGE VERY FINE TO EXTREMELY FINE., SUBANGULAR., FRIABLE., GLAUCONITE 5PCT., 5PCT. COMMENTS- N.S.CRB MAY BE DARK GLA.
2111	SHALE	DARK BROWNISH GREY.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.
2114	SANDSTONE QUARTZOSE	LIGHT 30PCT SILT, 10PCT ARGILLACEOUS MATERIAL., TRACE OF GLAUCONITE, TRACE OF BENTONITE.. GRAIN SIZE- MODE OF SAND FINE, RANGE MEDIUM TO EXTREMELY FINE., SUBANGULAR., FRIABLE., CARBONACEOUS MATERIAL 1PCT., 10PCT. COMMENTS- N.S. VP SORTED.

2150		COMMENTS- NO RECOVERY.
2158	SILTSTONE	TAN., 30PCT QUARTZ SAND, 30PCT ARGILLACEOUS MATERIAL.. SUBANGULAR., FRIABLE., CARBONACEOUS MATERIAL 1PCT., 1PCT. COMMENTS- N.S. RUSTY SPOTS(5PC)-OXIDIZED PYRITE
2171	SHALE	DA.. FIRM. COMMENTS- N.S.
2189	SHALE	MEDIUM BROWNISH GREY.. SOFT., CARBONACEOUS MATERIAL 2PCT, SILT 2PCT. COMMENTS- N.S. SAMPLE MOSTLY DRLG MUD.
2260	SANDSTONE SUBFELDSPATHIC	BUFF., 20PCT SILT, 20PCT BENTONITIC.. GRAIN SIZE- MODE OF SAND FINE, RANGE MEDIUM TO EXTREMELY FINE., SUBANGULAR., FRIABLE., FELDSPAR 5PCT., 5PCT. COMMENTS- N.S.
2330	SILTSTONE	BUFF., 30PCT QUARTZ AND FELDSPAR SAND, 20PCT BENTONITIC.. GRAIN SIZE- MODE OF SAND VERY FINE, RANGE FINE TO EXTREMELY FINE., SUBANGULAR., FRIABLE., CARBONACEOUS MATERIAL 1PCT, FELDSPAR 8PCT. COMMENTS- N.S..4MM SEAM CRB MATERIAL. .5MM SEAM CRB-CLAY.
2390	SHALE	DARK BROWNISH GREY., 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.LOCALLY INDURATED BY SIC. THIN(.5MM) SLT BAND.
2450	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.LOC.SILICA CEM.PRODUCING HARDENED LAYERS. BLOCKY.
2590	SILTSTONE	MEDIUM BROWNISH GREY., 30PCT QUARTZ SAND, 10PCT ARGILLACEOUS MATERIAL.. SUBANGULAR., FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- LOCAL. SIC WHICH CAUSES VARY. DEGRESS OF CONSOLID. FLECKS & ***INTERBEDDED WITH***
	SHALE	DARK 20PCT SILT.. FIRM. COMMENTS- BANDS OF CRB MAT.IN INTERBD SLTS&SH. FISSILE.
2650	SHALE	MEDIUM 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT COMMENTS- N.S.CONSOL.SOF-HRD DEPEND.ON DEGREE OF SILICA CEMENTATION.
2750	SHALE	MEDIUM TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.CONSOL.AS ABOVE. POOR FISSILITY.

2880	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. HARD., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. FISSILE.
2980	SHALE	MEDIUM TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. MICROSEAM COAL. POOR FISSILITY.
3055	SHALE	MEDIUM 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. BLOCKY.
3140	SHALE	DARK TRACE OF SILT.. FIRM. COMMENTS- N.S. BLOCKY
3450	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.POOR FISS.
3510	SHALE	DARK BROWNISH GREY., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. CONSOLIDATION SOF TO HRD. POOR FISS.
3590	SHALE	MEDIUM 20PCT QUARTZ SAND, 30PCT SILT.. CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.SOF TO HRD INTBD SLTY SST &SLTY SH. POOR RECOVERY.
3605	SANDSTONE QUARTZOSE	LIGHT 30PCT SILT, 10PCT ARGILLACEOUS MATERIAL.. GRAIN SIZE- MODE OF SAND FINE, RANGE MEDIUM TO EXTREMELY FINE., SUBANGULAR., FRIABLE., CARBONACEOUS MATERIAL 2PCT, FELDSPAR 2PCT., 15PCT. COMMENTS- N.S.RUSTY SPOTS-ALTERED PYR
3640	SILTSTONE	LIGHT 40PCT QUARTZ SAND, 10PCT ARGILLACEOUS MATERIAL.. GRAIN SIZE- MODE OF SAND FINE, RANGE COARSE TO EXTREMELY FINE., SUBROUNDED., FRIABLE., CARBONACEOUS MATERIAL 1PCT, CHERT 3PCT., 10PCT. COMMENTS- N.S.5 PC CLAY CASTS.
3750	SILTSTONE	LIGHT 30PCT QUARTZ SAND, 10PCT ARGILLACEOUS MATERIAL, 10PCT BENTONITIC.. GRAIN SIZE- MODE OF SAND VERY FINE, RANGE FINE TO EXTREMELY FINE., SUBROUNDED., FRIABLE., 5PCT. COMMENTS- N.S.SOME CLAY CASTS.
3800	SILTSTONE	LIGHT 30PCT QUARTZ SAND, 10PCT ARGILLACEOUS MATERIAL, 10PCT BENTONITIC.. GRAIN SIZE- MODE OF SAND VERY FINE, RANGE FINE TO EXTREMELY FINE., SUBROUNDED., FRIABLE., 5PCT. COMMENTS- N.S. AS ABOVE.

3860	SHALE	DARK 20PCT CARBONACEOUS MATERIAL., TRACE OF SILT.. FIRM. COMMENTS- N.S. ABUND. CRB MATERIAL SPLE NEARLY BLACK. FISSILE.
3950	SHALE	MEDIUM TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. FISSILE.
4020		COMMENTS- NO RECOVERY.
4090	SHALE	BROWNISH BLACK., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. BLOCKY.
4100	SANDSTONE SUBLITHIC	LIGHT YELLOWISH BROWN., 30PCT SILT, 10PCT ARGILLACEOUS MATERIAL.. GRAIN SIZE- MODE OF SAND FINE, RANGE MEDIUM TO EXTREMELY FINE., SUBANGULAR., FRIABLE., CARBONACEOUS MATERIAL 3PCT, CHERT 2PCT. COMMENTS- N.S.POOR POROSITY. INVADED BY DRLG MUD.
4110	SANDSTONE SUBFELDSPATHIC	LIGHT 20PCT ARGILLACEOUS MATERIAL.. SUBROUNDED., FRIABLE., CHERT 1PCT. COMMENTS- N.S.INVADED BY MUD.
4170	SHALE	DARK 10PCT SILICA CEMENT.. HARD., CARBONACEOUS MATERIAL 4PCT, SILT 2PCT. COMMENTS- N.S. BLOCKY.
4240	SHALE	BROWNISH BLACK., TRACE OF SILT.. SOFT., CARBONACEOUS MATERIAL 4PCT. COMMENTS- N.S..4MM CRB LAYERS. POOR FISS.
4300	SHALE	DARK TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT, PYRITE 1PCT. COMMENTS- N.S. SH SOF TO HRD IN LAYERS PYR.IN-SPECKS IN HRD LAYERS.
4360	SHALE	DARK 10PCT SILICA CEMENT., TRACE OF SILT.. HARD., CARBONACEOUS MATERIAL 3PCT. COMMENTS- N.S. BLOCKY.
4480	SILTSTONE	LIGHT 20PCT ARGILLACEOUS MATERIAL., TRACE OF SILICA CEMENT.. FRIABLE., CARBONACEOUS MATERIAL 3PCT. COMMENTS- N.S.TWO LAYERS,SLT&SH. LOCAL. INDURATED BY SIC. SOFTNESS OF ***INTERBEDDED WITH***
	SHALE	DARK TRACE OF SILT.. SOFT., CARBONACEOUS MATERIAL 5PCT, MICA 1PCT. COMMENTS- SAMPLE MAY BE RESULT OF SAMP- LING.
4560		COMMENTS- NO RECOVERY.

4645	SHALE	DARK 10PCT SILT.. HARD., CARBONACEOUS MATERIAL 3PCT. COMMENTS- N.S.V.G.FISSILITY.
4720	SHALE	DARK TRACE OF SILT, TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. BLOCKY. UNEVEN SIC.
4760	SHALE	DARK TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. FISSILE.
4780	SILTSTONE	MEDIUM 40PCT ARGILLACEOUS MATERIAL., TRACE OF SAND.. HARD., CARBONACEOUS MATERIAL 1PCT, CHERT 1PCT. COMMENTS- N.S. 2 SPLES TAKEN. ONE MOSTLY DRLG MUD. BLOCKY.
4860	SHALE	DARK 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 4PCT. COMMENTS- N.S.BLOCKY.
4920	SHALE	BROWNISH BLACK., 30PCT QUARTZ SAND, 10PCT SILT, 10PCT SILICA CEMENT.. GRAIN SIZE- MODE OF SAND VERY FINE, RANGE FINE TO EXTREMELY FINE., HARD., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.NON-UNIFORM SIC-SOME V.HRD PARTS IN SAMPLE. BLOCKY.
4970	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILT, TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 3PCT. COMMENTS- N.S. FRM TO HRD BLOCKY.
5010	SHALE	BROWNISH BLACK., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S..2MM LAYER COAL. SPLINTERY.
5090	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILT.. FIRM. COMMENTS- N.S.BLOCKY.
5150	SHALE	BROWNISH BLACK., 10PCT SILICA CEMENT., TRACE OF SILT.. VERY HARD., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.PLATY. SAMPLE MOSTLY MUD.
5220	SHALE	DUSKY YELLOWISH BROWN.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.SPLINTERY.SUGGESTION OF FRACTURING.
5280	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILT.. SOFT., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.SPLINTERY.
5340	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.PLATY.

5470	SHALE	DUSKY YELLOWISH BROWN.. FIRM., CARBONACEOUS MATERIAL 1PCT, SILT 2PCT. COMMENTS- N.S.PLATY.
5665		COMMENTS- NO RECOVERY.
5710		COMMENTS- NO RECOVERY.
5825		COMMENTS- NO RECOVERY.
5960		COMMENTS- NO RECOVERY.
6030		COMMENTS- NO RECOVERY.
6070	SANDSTONE LITHIC	MEDIUM 30PCT SILT, 10PCT ARGILLACEOUS MATERIAL, 10PCT SILICA CEMENT., 40PCT CHERT.. HARD., CARBONACEOUS MATERIAL 1PCT, FELDSPAR 5PCT. COMMENTS- N.S.VP SORTED,W/ SOME CLAY CASTS(5MM). POROSITY POOR.
6130		COMMENTS- NO RECOVERY.
6200	SILTSTONE	BROWNISH GREY., 20PCT QUARTZ SAND, 20PCT ARGILLACEOUS MATERIAL, 10PCT SILICA CEMENT.. SUBANGULAR., FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.CONSOL.VARIABLE-SOF-HRD
6270		COMMENTS- NO RECOVERY.
6315	SHALE	DUSKY YELLOWISH BROWN.. FIRM. COMMENTS- N.S.FISSILE. VERY SMALL SAMPLE- RUBBLE.
6385	SILTSTONE	LIGHT BROWNISH GREY., 50PCT ARGILLACEOUS MATERIAL., TRACE OF SAND, TRACE OF CHERT.. FRIABLE., CARBONACEOUS MATERIAL 5PCT. COMMENTS- N.S.
6450	SHALE	DARK YELLOWISH BROWN., 10PCT SILICA CEMENT., TRACE OF SILT.. FIRM. COMMENTS- N.S.VARIABLE SIC PRODUCES VSF TO VHD IN SAME SAMPLE. BLOCKY.
6510	SHALE	DUSKY YELLOWISH BROWN., 40PCT SILT., TRACE OF SAND, TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 2PCT, PYRITE 1PCT. COMMENTS- N.S.PYR IN THIN (.5MM) LENSE.
6580	SHALE	DUSKY YELLOWISH BROWN., 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.FISSILE. SEVERAL .2-.5MM SLT BANDS. COLOUR VARIABLE.

6650	SHALE	BROWNISH BLACK., TRACE OF CARBONACEOUS MATERIAL.. FIRM. COMMENTS- N.S.PLATY. SAMPLE IS COMPOSED OF RUBBLE & DRLG MUD.
6715	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 1PCT, PYRITE 2PCT. COMMENTS- N.S. PYR CONCENTRATED IN .3MM BAND.
6775	SILTSTONE	BROWNISH 10PCT QUARTZ SAND, 20PCT ARGILLACEOUS MATERIAL., TRACE OF SILICA CEMENT.. SUBROUNDED., FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S.
6830	SHALE	BROWNISH BLACK., TRACE OF SILICA CEMENT.. HARD., CARBONACEOUS MATERIAL 4PCT, SILT 1PCT. COMMENTS- N.S. SPLE MOSTLY DRLG MUD.
6890	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILT, TRACE OF SILICA CEMENT.. HARD., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. BLOCKY.
6950	SHALE	MEDIUM TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 5PCT. COMMENTS- N.S.POOR FISSILITY.
7020	SHALE	BROWNISH BLACK.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. FISSILE.
7080	SILTSTONE	BROWNISH BLACK., 30PCT ARGILLACEOUS MATERIAL., TRACE OF SAND, TRACE OF SILICA CEMENT.. HARD., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.CRB FLAKES(TO .2MM)
7400	SHALE	BROWNISH BLACK.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. PLATY. SL.CALCAREOUS.
7470	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 1PCT. COMMENTS- N.S. BLOCKY.
7550	SHALE	DUSKY YELLOWISH BROWN.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S.FISSILE.
7630	SHALE	DUSKY YELLOWISH BROWN.. FIRM. COMMENTS- N.S.SPLINTERY.
7700	SHALE	DUSKY YELLOWISH BROWN., 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. POOR FISSILITY.
7760	SHALE	BROWNISH BLACK., 10PCT SILICA CEMENT., TRACE OF SILT.. HARD. COMMENTS- N.S. FISSILE.

7830	SHALE	DUSKY YELLOWISH BROWN., 40PCT SILT.. FIRM., CARBONACEOUS MATERIAL 5PCT, SILICA CEMENT 1PCT. COMMENTS- N.S.
7930	SHALE	BROWNISH BLACK.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 1PCT, SILT 2PCT. COMMENTS- N.S.
8000	SHALE	DUSKY YELLOWISH BROWN., 20PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 1PCT. COMMENTS- N.S.BLOCKY.
8065	SHALE	DUSKY YELLOWISH BROWN., TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 2PCT. COMMENTS- N.S.POOR FISSILITY.
8150	SHALE	MEDI.. MICA 1PCT, SILT 1PCT. COMMENTS- N.S. SPLINTERY.
8200	SHALE	BROWNISH BLACK., TRACE OF SILICA CEMENT.. FIRM., SILT 1PCT. COMMENTS- N.S. BLOCKY.
8250	SHALE	DARK 10PCT SILT.. FIRM., CARBONACEOUS MATERIAL 2PCT. COMMENTS- N.S. FISSILE.
8300	SHALE	BROWNISH BLACK., 30PCT SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. SOFT TO FRM BLOCKY.
8350	SHALE	BROWNISH BLACK., 10PCT SILT., TRACE OF SILICA CEMENT.. FIRM., CARBONACEOUS MATERIAL 1PCT. COMMENTS- N.S. BLOCKY. UNEVEN SILICA CEMENT.
8400	SHALE	BROWNISH BLACK., TRACE OF SILT.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 3PCT. COMMENTS- N.S.BLOCKY. MAY BE FRACTURED.
8450	SHALE	MEDI.. FIRM., CARBONACEOUS MATERIAL 1PCT, MICA 1PCT, SILT 1PCT. COMMENTS- N.S.SPLINTERY.
8500	SHALE	BROWNISH BLACK., TRACE OF SILT.. FIRM. COMMENTS- N.S. BLOCKY.
8530	SHALE	BROWNISH BLACK., TRACE OF SPAR CALCITE.. FIRM., CARBONACEOUS MATERIAL 3PCT. COMMENTS- N.S. FRACTURES(.1-.6MM) INFIL- LED W/ CALCITE. 2 AGES FRACT.

Sidewall Core Description (Cont'd)

8560'	100% Shale, dark gray, bulky, firm.
8750'	100% Shale as above.
8810'	100% Shale as above.
8864'	100% Shale as above.
8925'	No Recovery.
9000'	No Recovery.
9080'	No Recovery.
9155'	No Recovery.
9210'	100% Limestone, light gray, very fine grained, chalky.
9276'	100% Limestone as above, silty.
9754'	100% Limestone as above, shaly.
10,005'	100% Limestone as above.
10,082	100% Limestone as above.
10,158'	100% Limestone, chalky, light brown.
10,360'	100% Limestone, white, chalky, soft.
10,400'	100% Limestone, dark gray to black, very fine grained.
10,440'	100% Limestone as above.
10,550'	100% Limestone, white, chalky, soft.
10,725'	100% Limestone, dark gray to black, trace calcite.
10,770'	100% Limestone, dark gray, shaly.
10,810'	100% Limestone, dark gray to black, very fine grained.
10,880'	100% Limestone as above.
11,004'	No Recovery.
11,050'	100% Limestone, dark gray to black, very fine grained.
11,422'	No Recovery.
11,640'	100% Limestone, light brown, trace chalky, very fine grained.

Sidewall Core Description (Cont'd)

11,750'	100% Dolomite, light brown.
11,865'	100% Limestone, white to buff, very fine grained.
12,030'	No Recovery.
12,130'	No Recovery.

K 12022/34

	CORE ANALYSIS	WELL NAME AND NUMBER SHELL TRAIL RIVER H-37

NIL

12022/35

	FLUID ANALYSIS	WELL NAME AND NUMBER SHELL TRAIL RIVER H-37

See Following Pages:

CORE LABORATORIES · CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

GAS ANALYSIS

Shell #204 (Stainless Steel) — CONTAINER IDENTITY

7012-4161 — LABORATORY NUMBER

Shell Canada Limited — OPERATOR

1 of 1 — PAGE

66° 36' 16.10 N.L.
LSD 134° 50' 58.68 W.L. — LOCATION

Shell Trail River YT H-37 — WELL OR SAMPLE LOCATION NAME

KB ELEV. — GRD. ELEV. 1264'

Trail River, Yukon Territories — FIELD OR AREA

POOL OR ZONE

Shell Canada Limited — SAMPLER

TEST TYPE & NO.

gas from mud - depth 8575 — TEST RECOVERY

De-gasser Exhaust — POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F — MUD RESISTIVITY

TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR — @ °F CONTAINER WHEN SAMPLED — 0 @76 °F CONTAINER WHEN RECEIVED — SEPARATOR 90

PRESSURES, PSIG — TEMPERATURES, °F

Feb. 17/74 — DATE SAMPLED (D/M/Y)
Feb. 20/74 — DATE RECEIVED (D/M/Y)
Feb. 21/74 — DATE ANALYSED (D/M/Y)
B.G. — ANALYST

REMARKS

COMPONENT	MOL % AIR FREE AS REC'D	MOL % AIR FREE ACID GAS FREE	CDN. G.P.M. AIR FREE AS REC'D
H_2	0.00		
He	0.00		
N_2	Trace		
CO_2	3.98		
H_2S	0.00		
C_1	91.29		
C_2	3.98		
C_3	0.75		0.171
iC_4	Trace		0.000
C_4	Trace		0.000
iC_5	0.00		0.000
C_5	0.00		0.000
C_6	0.00		0.000
C_7 +	0.00		0.000
TOTAL	100.00		0.171
		C_5 +	0.000

GROSS HEATING VALUE
BTU/FT^3 @ 60°F & 14.65 PSIA
(MOISTURE & ACID GAS FREE)

MEASURED — CALCULATED 1050.1

DEW POINT — VAPOUR PRESS. PENTANES PLUS 0.0

SPECIFIC GRAVITY

MOISTURE FREE AS SAMPLED: MEASURED — CALCULATED 0.619

MOISTURE AND ACID GAS FREE: MEASURED — CALCULATED

PSEUDOCRITICAL PROPERTIES (CALCULATED)

AS SAMPLED: 690.0 PSIA ppc — 362.9 °R pTc

ACID GAS FREE: PSIA ppc — °F pTc

REMARKS

Sample was approximately 95% air contaminated.

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

WATER ANALYSIS

Plastic — CONTAINER IDENTITY

7021-4464 — LABORATORY NUMBER

Shell Canada Limited — OPERATOR

1 of 7 — PAGE

66° 36' 16.10 N.L.
134° 50' 58.68 W.L. — LOCATION

Shell Trail River YT H-37 — WELL OR SAMPLE LOCATION NAME

1290' — KB ELEV.

1264' — GRD. ELEV.

Trail River, Yukon Territories — FIELD OR AREA

POOL OR ZONE

D. Sorkilmo — SAMPLER

TEST TYPE & NO.

TEST RECOVERY

#140 15-1100 Flowline Mud at 12,210 prior to Log #3 — POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F — MUD RESISTIVITY

TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR — @ °F CONTAINER WHEN SAMPLED — @ °F CONTAINER WHEN RECEIVED — SEPARATOR

PRESSURES, PSIG — TEMPERATURES, °F

March 17/74 — DATE SAMPLED (D/M/Y)
April 2/74 — DATE RECEIVED (D/M/Y)
April 5/74 — DATE ANALYSED (D/M/Y)
D.J. — ANALYST

REMARKS

ION	MG/L	MG%	MEQ/L
Na+K	22082	36.2	960.5
K			
Ca	1053	1.7	52.5
Mg	319	0.5	26.2
Ba			
Sr			
Fe		TRACE	

ION	MG/L	MG%	MEQ/L
Cl	34606	56.7	976.1
Br			
I			
HCO_3	1445	2.4	23.7
SO_4	902	1.5	18.8
CO_3	615	1.0	22.0
OH	0	0.0	0.0
H_2S	NOT DETECTED		

TOTAL SOLIDS MG/L

BY EVAPORATION @ 110°C

BY EVAPORATION @ 180°C

AT IGNITION

61021 — CALCULATED

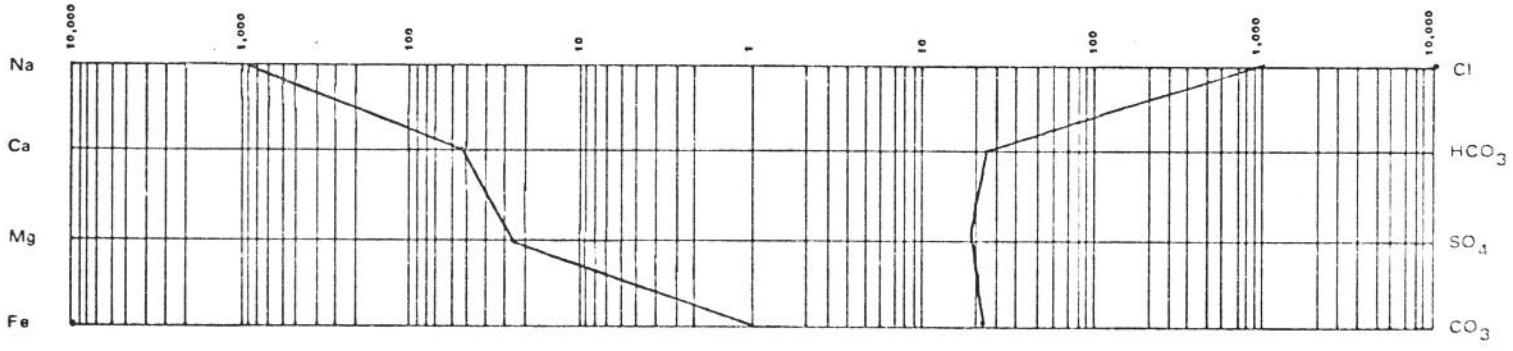
1.0421 @ 60°F — SPECIFIC GRAVITY

1.3440 @ 17°C — REFRACTIVE INDEX

9.0 — pH

0.114 @ 25°C — RESISTIVITY (OHM/METERS)

LOGARITHMIC PATTERN MEQ PER LITER



REMARKS NaCl equiv 59941

CORE LABORATORIES · CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

Plastic (CONTAINER IDENTITY)		7021-4464 (LABORATORY NUMBER)
66° 36' 16.10 N.L.	Shell Canada Limited (OPERATOR)	2 of 7 (PAGE)
134° 50' 58.68 W.L. (LOCATION)	Shell Trail River YT H-37 (WELL OR SAMPLE LOCATION NAME)	1290' (KB ELEV.) 1264' (GRD. ELEV.)
Trail River, Yukon Territories (FIELD OR AREA)	(POOL OR ZONE)	(SAMPLER)
DST #3 (TEST TYPE & NO.)	(TEST RECOVERY)	
No. 141 15-1200 3494' Above Tool (POINT OF SAMPLE)	(AMT. & TYPE CUSHION)	@ °F (MUD RESISTIVITY)
10,323' - 10,512' (TEST INTERVALS OR PERFS.)	PUMPING FLOWING GAS LIFT SWAB	
	WATER BBLS/D. OIL BBLS/D. GAS MFC/D.	
SEPARATOR RESERVOIR	@ °F (CONTAINER WHEN SAMPLED) @ °F (CONTAINER WHEN RECEIVED)	SEPARATOR
PRESSURES, PSIG		TEMPERATURES, °F
March 22/74 (DATE SAMPLED (D/M/Y))	April 1/74 (DATE RECEIVED (D/M/Y)) April 5/74 (DATE ANALYSED (D/M/Y))	D.J. (ANALYST) (REMARKS)

MUD FILTRATE ANALYSIS

Chloride = 49 mg/liter.

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

WATER ANALYSIS

Plastic — CONTAINER IDENTITY

7021-4464 — LABORATORY NUMBER

Shell Canada Limited — OPERATOR

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66° 36' 16.10 N.L.
134° 50' 58.68 W.L. — LOCATION

Shell Trail River YT H-37 — WELL OR SAMPLE LOCATION NAME

1290' — KB ELEV. 1264' — GRD. ELEV.

Trail River, Yukon Territories — FIELD OR AREA

POOL OR ZONE

SAMPLER

DST #3 — TEST TYPE & NO.

TEST RECOVERY

No. 142 15-1100 2530' Above Tool — POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F — MUD RESISTIVITY

10,323' - 10,512' — TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR — @ °F CONTAINER WHEN SAMPLED — @ °F CONTAINER WHEN RECEIVED — SEPARATOR

PRESSURES, PSIG — TEMPERATURES, °F

March 22/74 — DATE SAMPLED (D/M/Y)
April 2/74 — DATE RECEIVED (D/M/Y)
April 5/74 — DATE ANALYSED (D/M/Y)
D.J. — ANALYST
REMARKS

ION	MG/L	MG%	MEQ/L
Na+K	29671	32.6	1290.6
K			
Ca	3886	4.3	193.9
Mg	1105	1.2	90.8
Ba			
Sr			
Fe		TRACE	

ION	MG/L	MG%	MEQ/L
Cl	55128	60.6	1554.9
Br			
I			
HCO_3	1132	1.2	18.6
SO_4	77	0.1	1.6
CO_3	0	0.0	0.0
OH	0	0.0	0.0
H_2S	NOT DETECTED		

TOTAL SOLIDS MG/L

BY EVAPORATION @ 110°C

BY EVAPORATION @ 180°C

AT IGNITION

90999 — CALCULATED

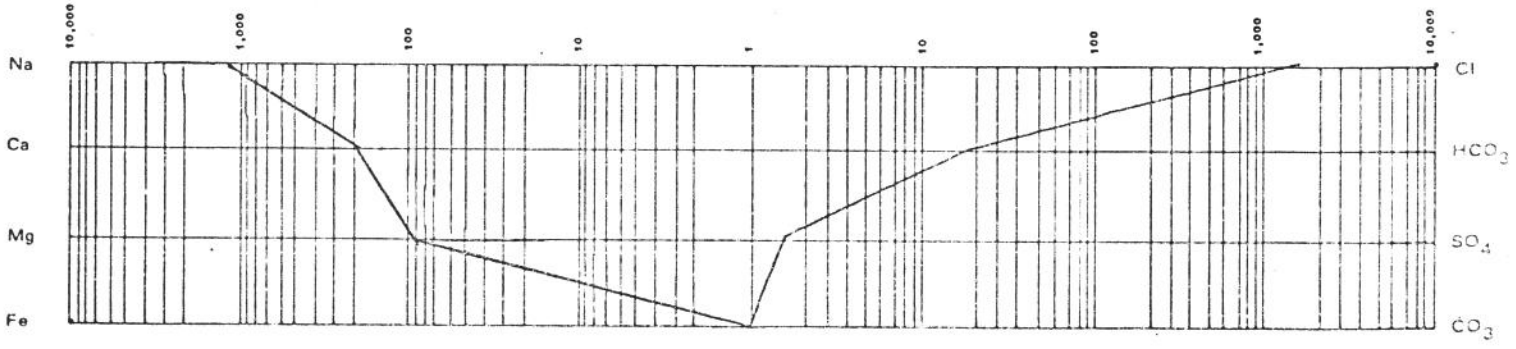
1.0615 @ 60°F — SPECIFIC GRAVITY

1.3495 @ 25°C — REFRACTIVE INDEX

7.0 — pH

0.079 @ 25°C — RESISTIVITY (OHM/METERS)

LOGARITHMIC PATTERN MEQ PER LITER



REMARKS NaCl equiv 91044

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

Plastic (CONTAINER IDENTITY)		7021-4464 (LABORATORY NUMBER)
66° 36' 16.10 N.L. / 134° 50' 58.68 W.L. (LOCATION)	Shell Canada Limited (OPERATOR) / Shell Trail River YT H-37 (WELL OR SAMPLE LOCATION NAME)	4 of 7 (PAGE)
Trail River, Yukon Territories (FIELD OR AREA)	(POOL OR ZONE)	1290' KB ELEV. / 1264' GRD. ELEV. (SAMPLER)
DST #3 (TEST TYPE & NO.)	(TEST RECOVERY)	
No. 143 15-1200 1590' Above Tool (POINT OF SAMPLE)	(AMT. & TYPE CUSHION)	@ °F (MUD RESISTIVITY)
10,323' - 10,512' (TEST INTERVALS OR PERFS.)	PUMPING FLOWING GAS LIFT SWAB	
	WATER BBLS/D. OIL BBLS/D. GAS MFC/D.	
SEPARATOR RESERVOIR	@ °F CONTAINER WHEN SAMPLED / @ °F CONTAINER WHEN RECEIVED	SEPARATOR
PRESSURES, PSIG		TEMPERATURES, °F
March 22/74 (DATE SAMPLED (D/M/Y))	April 2/74 (DATE RECEIVED (D/M/Y)) / April 5/74 (DATE ANALYSED (D/M/Y)) / D.J. (ANALYST)	(REMARKS)

ANALYSIS

Chloride = 49,088 mg/liter.

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

Plastic — CONTAINER IDENTITY

WATER ANALYSIS

7021-4464 — LABORATORY NUMBER

Shell Canada Limited — OPERATOR

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66° 36' 16.10 N.L.
134° 50' 58.68 W.L. — LOCATION

Shell Trail River YT H-37 — WELL OR SAMPLE LOCATION NAME

1290' — KB ELEV.

1264' — GRD. ELEV.

Trail River, Yukon Territories — FIELD OR AREA

POOL OR ZONE

SAMPLER

DST #3 — TEST TYPE & NO.

TEST RECOVERY

No. 144 15-1100 650' Above Tool — POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F — MUD RESISTIVITY

10,323' - 10,512' — TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR PRESSURES, PSIG

@ °F — CONTAINER WHEN SAMPLED

@ °F — CONTAINER WHEN RECEIVED

SEPARATOR TEMPERATURES, °F

March 22/74 — DATE SAMPLED (D/M/Y)

April 2/74 — DATE RECEIVED (D/M/Y)

April 5/74 — DATE ANALYSED (D/M/Y)

D.J. — ANALYST

REMARKS

ION	MG/L	MG%	MEQ/L
Na+K	29978	32.7	1304.0
K			
Ca	3846	4.2	191.9
Mg	1105	1.2	90.8
Ba			
Sr			
Fe		TRACE	

ION	MG/L	MG%	MEQ/L
Cl	55530	60.6	1566.3
Br			
I			
HCO_3	1118	1.2	18.3
SO_4	88	0.1	1.8
CO_3	0	0.0	0.0
OH	0	0.0	0.0
H_2S	NOT DETECTED		

TOTAL SOLIDS MG/L

BY EVAPORATION @ 110°C

BY EVAPORATION @ 180°C

AT IGNITION

91665 — CALCULATED

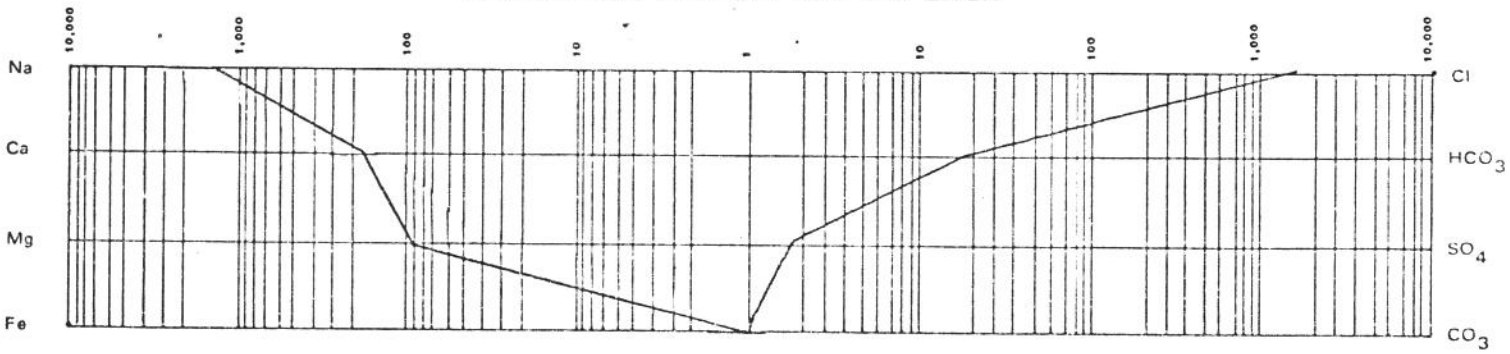
1.0617 @ 60°F — SPECIFIC GRAVITY

1.3495 @ 25°C — REFRACTIVE INDEX

7.0 — pH

0.079 @ 25°C — RESISTIVITY (OHM/METERS)

LOGARITHMIC PATTERN MEQ PER LITER



REMARKS NaCl equiv 91717

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

Plastic
CONTAINER IDENTITY

7021-4464
LABORATORY NUMBER

66° 36' 16.10 N.L.
134° 50' 58.68 W.L.
LOCATION

Shell Canada Limited
OPERATOR

6 of 7
PAGE

Shell Trail River YT H-37
WELL OR SAMPLE LOCATION NAME

1290' KB ELEV. 1264' GRD. ELEV.

Trail River, Yukon Territories
FIELD OR AREA

POOL OR ZONE

SAMPLER

DST #3
TEST TYPE & NO.

TEST RECOVERY

No. 145 15-1200 Top of Tool
POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F
MUD RESISTIVITY

10,323' - 10,512'
TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR

@ °F
CONTAINER WHEN SAMPLED

@ °F
CONTAINER WHEN RECEIVED

SEPARATOR

PRESSURES, PSIG

TEMPERATURES, °F

March 22/74
DATE SAMPLED (D/M/Y)

April 2/74
DATE RECEIVED (D/M/Y)

April 5/74
DATE ANALYSED (D/M/Y)

D.J.
ANALYST

REMARKS

MUD FILTRATE ANALYSIS

Chloride = 45,869 mg/liter.

CORE LABORATORIES - CANADA LTD.
Petroleum Reservoir Engineering
CALGARY ALBERTA

WATER ANALYSIS

Plastic — CONTAINER IDENTITY

7021-4464 — LABORATORY NUMBER

Shell Canada Limited — OPERATOR

7 of 7 — PAGE

66° 36' 16.10 N.L.
134° 50' 58.68 W.L. — LOCATION

Shell Trail River YT H-37 — WELL OR SAMPLE LOCATION NAME

1290' — KB ELEV.

1264' — GRD. ELEV.

Trail River, Yukon Territories — FIELD OR AREA

POOL OR ZONE

SAMPLER

DST #3 — TEST TYPE & NO.

TEST RECOVERY

No. 146 15-1100 MFE Chamber — POINT OF SAMPLE

AMT. & TYPE CUSHION

@ °F — MUD RESISTIVITY

10,323' - 10,512' — TEST INTERVALS OR PERFS.

PUMPING FLOWING GAS LIFT SWAB

WATER BBLS/D. OIL BBLS/D. GAS MFC/D.

SEPARATOR RESERVOIR — PRESSURES, PSIG

@ °F CONTAINER WHEN SAMPLED

@ °F CONTAINER WHEN RECEIVED

SEPARATOR — TEMPERATURES, °F

March 22/74 — DATE SAMPLED (D/M/Y)

April 2/74 — DATE RECEIVED (D/M/Y)

April 5/74 — DATE ANALYSED (D/M/Y)

D.J. — ANALYST

REMARKS

ION	MG/L	MG%	MEQ/L
Na+K	25501	36.3	1109.2
K			
Ca	1133	1.6	56.6
Mg	344	0.5	28.2
Ba			
Sr			
Fe		PRESENT	

ION	MG/L	MG%	MEQ/L
Cl	40239	57.2	1135.0
Br			
I			
HCO_3	1352	1.9	22.2
SO_4	1760	2.5	36.7
CO_3	0	0.0	0.0
OH	0	0.0	0.0
H_2S	NOT DETECTED		

TOTAL SOLIDS MG/L

BY EVAPORATION @ 110°C

BY EVAPORATION @ 180°C

AT IGNITION

70329 — CALCULATED

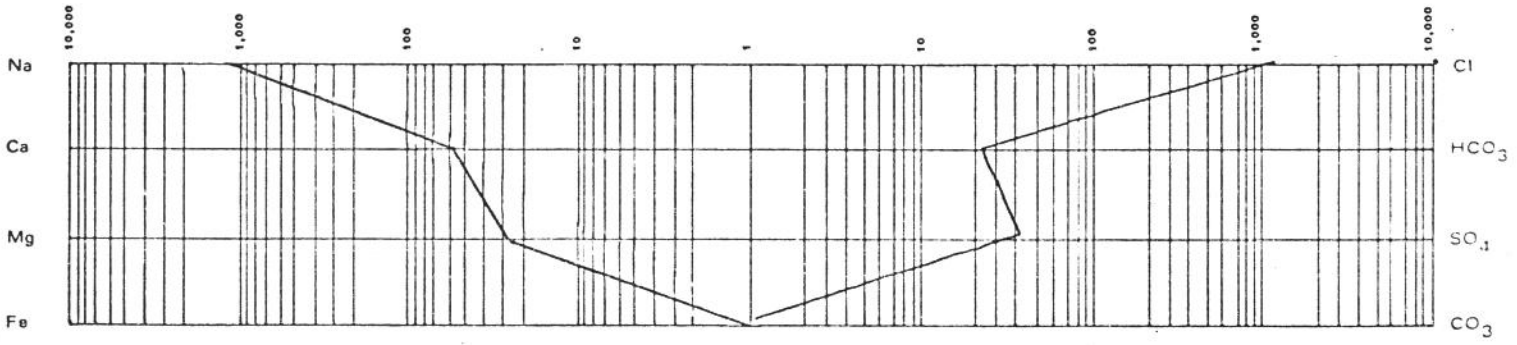
1.0481 @ 60°F — SPECIFIC GRAVITY

1.3495 @ 25°C — REFRACTIVE INDEX

7.9 — pH

0.097 @ 25°C — RESISTIVITY (OHM/METERS)

LOGARITHMIC PATTERN MEQ PER LITER



REMARKS NaCl equiv 68749

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON — FORT ST. JOHN — CALGARY

— WATER ANALYSIS —

CONTAINER IDENTITY: 81

LABORATORY NUMBER: C74-2316

OPERATOR NAME AND ADDRESS: SHELL CANADA LIMITED E & P LAB., 2223 Centre Street North, CALGARY

SAMPLE LOCATION

WELL OR SAMPLE LOCATION NAME: Shell Trail River H-37

ELEVATIONS: KB GRD.

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER: D.Sorkilmo

COMPANY

TEST TYPE & NO

TEST RECOVERY

TEST INTERVAL OR PERFS

POINT OF SAMPLE: FLOWLINE MUD PRIOR TO SONIC LOG

AMT & TYPE OF CUSHION

MUD RESISTIVITY @ °F

TYPE OF PRODUCTION: PUMPING FLOWING GAS LIFT SWAB

PRODUCTION RATES: WATER BBLS/D OIL BBLS/D GAS MCF/D

PRESSURES - PSIG: SEPARATOR TREATER RESERVOIR CONTAINER WHEN SAMPLED WHEN RECEIVED

TEMPERATURES (°F): SEPARATOR TREATER CONTAINER WHEN SAMPLED WHEN RECEIVED

DATE SAMPLED (D/M/Y): 14/2/74 DATE RECEIVED (D/M/Y): 7/3/74 DATE ANALYZED (D/M/Y): 18/3/74 ANALYST: B.Anderson

REMARKS: No. 81 15-1100

ION	MG/L	MG%	MEQ/L	ION	MG/L	MG%	MEQ/L
Na	20,858	38.77	907.32	Cl	30,600	56.88	862.92
K				Br			
Ca	20	0.04	1.00	I			
Mg	12	0.02	1.00	HCO_3	1,491	2.77	24.46
Ba				SO_4	407	0.76	8.47
Sr				CO_3	405	0.75	13.47
Fe	Present			OH	Nil		
				H_2S	Nil		

TOTAL SOLIDS Mg/l

BY EVAPORATION @ 110°C: 76,010

BY EVAPORATION @ 180°C:

AT IGNITION: 72,530

CALCULATED: 53.793

Organic Matter: Much

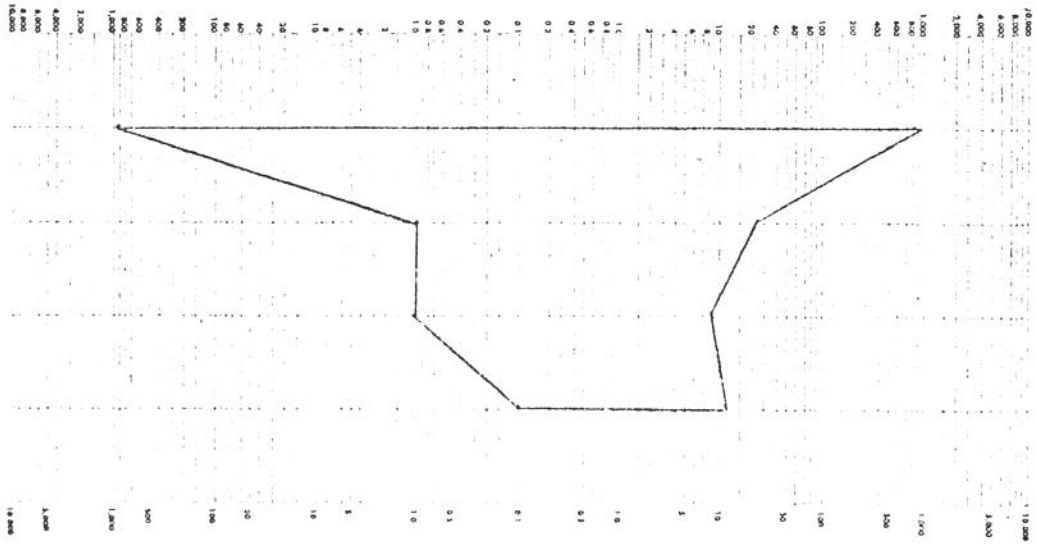
SPECIFIC GRAVITY: 1.039 @ 60°F

REFRACTIVE INDEX: 1.3435 @ 25°C

OBSERVED PH: 9.5 @ 78 °F

RESISTIVITY (Ohm/meters): 0.091 @ 25°C

LOGARITHMIC PATTERN MEQ PER LITER



Remarks and Conclusions

Analysis determined on a yellow colored filtrate recovered from the mud sample.

Calculated solid low due to sodium and potassium which are calculated by difference as sodium.

CHEMICAL & GEOLOGICAL LABORATORIES LTD.

EDMONTON — FORT ST. JOHN — CALGARY

— WATER ANALYSIS —

CONTAINER IDENTITY: No. 72

LABORATORY NUMBER: C74-2069

OPERATOR NAME AND ADDRESS: SHELL E. & P. LABORATORY, 2223 Centre St. N., Calgary.

SAMPLE LOCATION

WELL OR SAMPLE LOCATION NAME: Shell Trail River H-37

ELEVATIONS: KB 1294' GRD. 1261'

FIELD OR AREA

POOL OR ZONE

NAME OF SAMPLER

COMPANY

TEST TYPE & NO.

TEST RECOVERY

TEST INTERVAL OR PERFS

POINT OF SAMPLE: Flowline Mud at 8550'

AMT & TYPE OF CUSHION

MUD RESISTIVITY @ °F

TYPE OF PRODUCTION: PUMPING FLOWING GAS LIFT SWAB

PRODUCTION RATES: WATER BBLS/D OIL BBLS/D GAS MCF/D

PRESSURES - PSIG: SEPARATOR TREATER RESERVOIR CONTAINER WHEN SAMPLED WHEN RECEIVED

TEMPERATURES (°F): SEPARATOR TREATER CONTAINER WHEN SAMPLED WHEN RECEIVED

DATE SAMPLED (D/M/Y): 12/2/74 DATE RECEIVED (D/M/Y): 19/2/74 DATE ANALYZED (D/M/Y): 22/2/74 ANALYST: D. Owens

REMARKS

ION	MG/L	MG%	MEQ/L	ION	MG/L	MG%	MEQ/L
Na	23936	38.17	1041.21	Cl	32550	51.90	917.91
K				Br			
Ca	104	0.17	5.19	I			
Mg	Trace			HCO_3	1025	1.63	16.81
Ba				SO_4	4650	7.41	96.72
Sr				CO_3	449	0.72	14.96
Fe	Trace			OH	Nil		
				H_2S	Nil		

TOTAL SOLIDS Mg/L

BY EVAPORATION @ °C: 82250 — BY EVAPORATION @ 180°C:

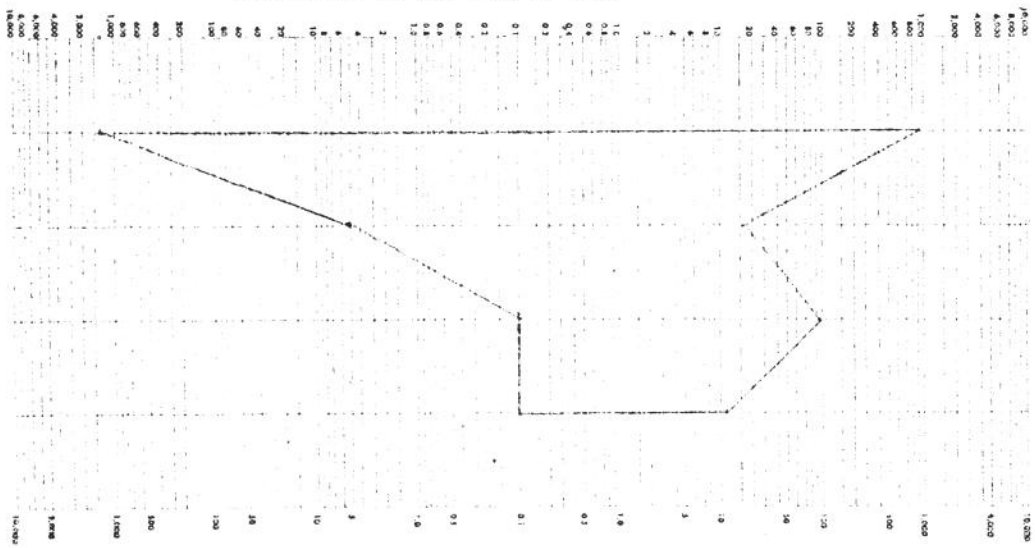
AT IGNITION: 77010 — CALCULATED: 62714

Organic Matter: Very Much

SPECIFIC GRAVITY @ 60°F: — REFRACTIVE INDEX: 1.3440 @ 25°C

OBSERVED PH: 9.7 @ 76 °F — RESISTIVITY (Ohm/meters): 0.092 @ 25°C

LOGARITHMIC PATTERN MEQ PER LITER



Remarks and Conclusions

Analysis determined on amber filtrate obtained from a mud.

Calculated solids are lower than expected since sodium and potassium are calculated by difference as sodium.

ENERGY RESOURCES CONSERVATION BOARD
603 - 6 AVENUE SW, CALGARY, ALBERTA T2P 0T4

— WATER ANALYSIS —

CONTAINER IDENTITY:

LABORATORY NUMBER: 1 15-1100

OPERATOR'S NAME AND ADDRESS: SHELL CANADA LIMITED P.O. BOX 880 CALGARY

SAMPLE LOCATION:

WELL OR PROSPECT OR STATION NAME: TRAIL RIVER H-37

ELEVATIONS KB: 1294 GR: 1264

FIELD OR AREA: PEEL, Y.T.

FORMATION:

NAME OF SAMPLER: T. BASISTY

COMPANY:

TEST TYPE & NO.:

TOTAL RECOVER:

TEST INTERVAL OR PERFS:

POINT OF SAMPLE: FLOWLINE -- MUD @ 2210

LAST CIRC. PRIOR TO LOGGING

AMT & TYPE OF CUSHION:

MUD RESISTIVITY:

TYPE OF PRODUCTION: PUMPING / FLOWING / GAS LIFT / SWAB

PRODUCTION RATES: WATER BPD/C | OIL BPD/C | GAS MCF/D

PRESSURES - PSIG: SEPARATOR | TREATER | RESERVOIR | CONTAINER WHEN SAMPLED | CONTAINER WHEN RECEIVED

TEMPERATURES (°F): SEPARATOR | TREATER | CONTAINER WHEN SAMPLED | CONTAINER WHEN RECEIVED

DATE SAMPLED (D/M/Y): 13/12/73

DATE RECEIVED (D/M/Y): 18/12/73

DATE ANALYZED (D/M/Y): 3/1/74

ANALYST: N.L. Johnson

REMARKS: 1200 HRS

ION	MG/L	MG%	MEQ/L
Na	19,743		858.41
K			
Ca	167		8.33
Mg	TR?		
Ba			
Sr			
Fe	NONE		

ION	MG/L	MG%	MEQ/L
Cl	26,529		748.12
Br			
I			
HCO_3	37		0.61
SO_4	5512		114.81
CO_3	96		3.20
OH			
H_2S	NONE		

TOTAL SOLIDS MG/L

BY EVAPORATION @ °C:

BY EVAPORATION @ °C:

AT IGNITION:

CALCULATED: 52 084

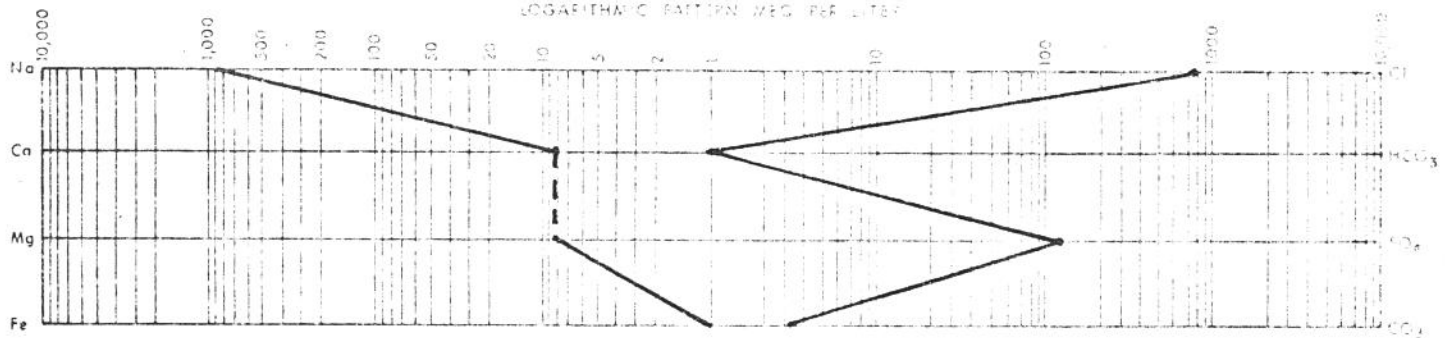
SPECIFIC GRAVITY @ °C: 1.042

REFRACTIVE INDEX: 1.3411

OBSERVED PH @ °C: 10.1 @ 69

RESISTIVITY @ °C (OHM-METERS): 0.11 @ 69

LOGARITHMIC RATTON MEQ PER LITRE



REMARKS

CALCULATIONS REPORTED TO THE BOARD MUST BE BASED ON "CHEMISTRY DATA SHEET" — HARRIS & DAVIS, U of A, 1949

K 12022/36

SIEVE ANALYSIS

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

Nil.

K 12022/37

GEOLOGICAL DATA (TOPS)

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

ROCK - STRATIGRAPHIC UNITS (Formation and members)

UNIT	DEPTH DRILLED	DEPTH SUBSEA	THICKNESS	LITHOLOGY	COMMENTS
Spuds in Cretaceous					
Mississippian	2267	-977	2590'	Mainly shales minor siltstones. Interbedded sandstones, siltstones, & shales.	
Imperial Fm.	4837	-3547	4021'	Shales and siltstones.	
Canol Fm.	8858	-7568	12'	Bituminous shale, minor chert.	
Bear Rock Fm.	8870	-7580	2570'	Limestone-shale, minor dolomite.	
Delorme Fm.	11,440	-10,150	2060'+	Dolomite.	

TIME-STRATIGRAPHIC UNITS (STAGE)

TECHNICAL APPENDICES

K 12022/39

MICROPALEONTOLOGY

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

INTERVAL	AGE	FAUNA & COMMENTS
		Micropaleontology not worked for this well.

Kay Leskiw
PALEONTOLOGIST

April 25/74
DATE

K-1022/40

PALYNOLOGY

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

INTERVAL	AGE	FLORA AND COMMENTS
		Not Analyzed.

R. A. Reed — PALYNOLOGIST

April/74 — DATE

K 12022/41

GEOCHEMICAL SUMMARY

WELL NAME AND NUMBER

SHELL TRAIL RIVER H-37

ORGANIC RICH INTERVAL	COMMENTS
950'- 1200'	Moderate to rich organic zone.
1200'- 1550'	Moderate organic content.
1550'- 3210'	Low organic content.
3220'- 3980'	Moderate organic content.
3980'- 4300'	Rich organic zone.
4300'- 4890'	Moderate organic content.
4890'- 4950'	Rich organic zone.
4950'- 5650'	Moderate organic content.
5650'-10,070'	Low organic content.

LEVEL OF ORGANIC MATURITY - COMMENTS

The depth at which sediments become mature for generation and expulsion of oil has not yet been determined. However, by 8595', the sediments are mature for expulsion of oil and gas and by 9000', major expulsion of oil should be complete.

K 12022/42

MECHANICAL LOGS

WELL NAME AND NUMBER
SHELL TRAIL RIVER H-37

RUN NUMBER	DATE	TYPE	INTERVAL

LOGS SUBMITTED PREVIOUS TO THE COMPLETION OF THIS REPORT.

K 12022/43

	OTHER ANALYSIS	WELL NAME AND NUMBER SHELL TRAIL RIVER H-37

See Following Pages:

JT-1&E-48

JOHNSTON Schlumberger

JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED

321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

TEST DATA

Type of Test	Casing.				
Time Started in Hole	0200	Hrs.	Tool Opened	1315	Hrs.
First Flow	5	Min.	Initial Shut-In	60	Min.
Second Flow	60	Min.	Second Shut In		Min.
Third Flow		Min.	Final Shut In	120	Min.
Pulled Loose @	1720	Hrs.	Out of Hole	2200	Hrs.
Wt. Set/on Packers	40,000	#	Pulled Loose Wt.	50,000	#
Description of Blow During Test	Good air blow on preflow.				

FLUID RECOVERY Was Test Reverse Circulated Yes ☐ No ☒

Total Fluid Recovered 210 Ft.

Description of Fluid Recovered

210' Drilling fluid.

GAS BLOW MEASUREMENT

Measured With I.D. Riser

Time	Sfce. Choke		M Cubic Feet/Day
		NIL	

REMARKS: Test satisfactory.
Temperature recorder #5689 = 174°F.

RESISTIVITY			SALT CONTENT
Recovery Water	@	°F.	ppm.
Mud Pit sample filtrate.	@	°F.	ppm.

TOOL SEQUENCE

Tool	Length	O.D.
P.O. Sub	1.10	
Sub	.95	
MFE Tool	12.10	
Bypass Tool	3.10	
Recorder	5.00	
Recorder	5.00	
Jars	5.90	
Travel Collar	5.20	
Total	38.35	
Stub	1.10	
Perfs	5.00	
Recorder	5.00	
Recorder	5.00	
Perfs	5.00	
D. Collars & Subs	250.31	
Temp. Recorder	5.00	
Perfs	5.00	
B.N. & Perf	1.50	
Total Interval	282.91	
TOTAL LENGTH		

Elevation G.L. N/A K.B. N/A

Bottom Hole Choke Size, 1/2"

Fluid Cushion Type Nil Amt.

MUD AND HOLE DATA

Mud Type	Plovner	W.L.	15.0
Filter Cake	2/32 Visc. 51	Wt.	10.3
Time Taken	2100 hrs.		
Contractor	Adeco Drlg.	Rig No.	10
Drill Pipe Size	4 1/2" IF		
Drill Collar Size	2 7/8" ID &		
Drill Collar Length	714' &		
Main Hole Size	8 1/2" Rat Hole		

District	Inuvik	Ticket No. 20288	Date	February 25, 1974	Test No. 1 J.T. No. 1
Company	Shell Canada Limited		Address	639 - 5 Avenue S.W.	
Well Name	Shell Trail River YT H-37			Calgary, Alberta T2P 2K3	
Number	66°36'16.00"N 134°50'58.68"W		Field	Province	N.W.T.
Formation		Thickness	Co. Rep.	D. Brown	
Interval	8548 - 8832	T.D. 8832'	Technician	P. Dakus	
Distribution of Reports	14 - Calgary		Attention:	F. Budda	

JOHNSTON
Schlumberger

JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

20288

PRESSURE DATA

INSTRUMENT No.		AK1-3855	AK1-2566	AK1-4523	AK1-4521
CAPACITY (psig)		10,500	4600	11,850	11,900
INSTRUMENT DEPTH FT.		8527	8532	8555	8561
INSTRUMENT OPENING		Inside	Inside	Outside	Outside
WELL TEMP. °F.					
INITIAL HYDROSTATIC	A	4668#		4735#	4710#
FIRST FLOW	B	133#		158#	154#
	B-1	133#		158#	154#
INITIAL SHUT-IN	C	462#	Ran	498#	493#
SECOND FLOW	D	96#	Over	140#	138#
	D-1	139#	Capacity	170#	171#
SECOND SHUT-IN	E				
THIRD FLOW	F				
	F-1				
FINAL SHUT-IN	G	635#		689#	677#
FINAL HYDROSTATIC	H	4628#		4699#	4686#

FLUID SAMPLE REPORT

Sample No.
Type
Depth
Volume

Sample Pressure:
psig. at Surface
Gravity API @ °F
Gas/Oil Ratio Cu.Ft./bbl.

Recovery:
Cu. Ft. Gas
cc. Oil
cc. Water
cc. Mud
Total Liquid cc.

REMARKS:

PRESSURE INCREMENTS ON RECORDER

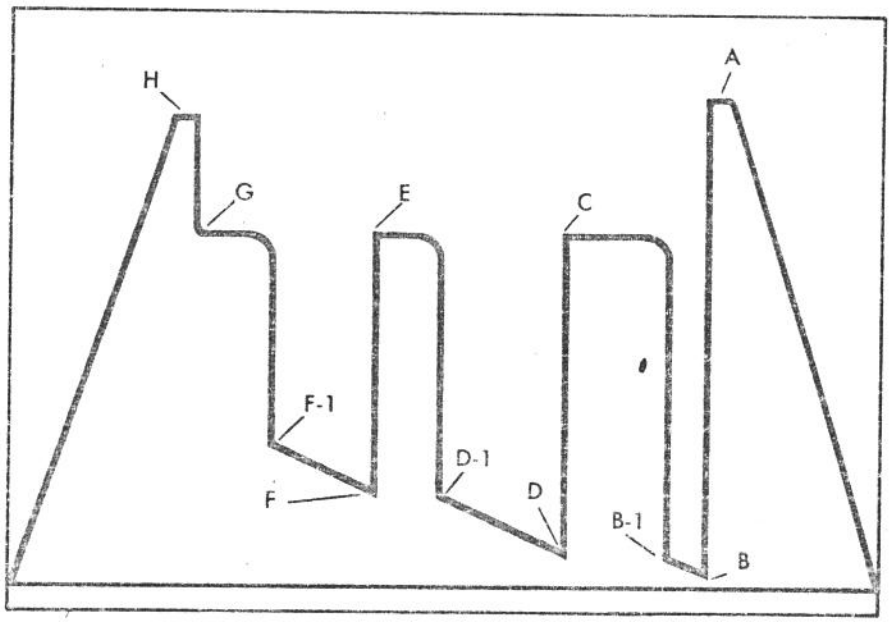
POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$

JOHNSTON
Schlumberger

JOHNSTON TESTERS
A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

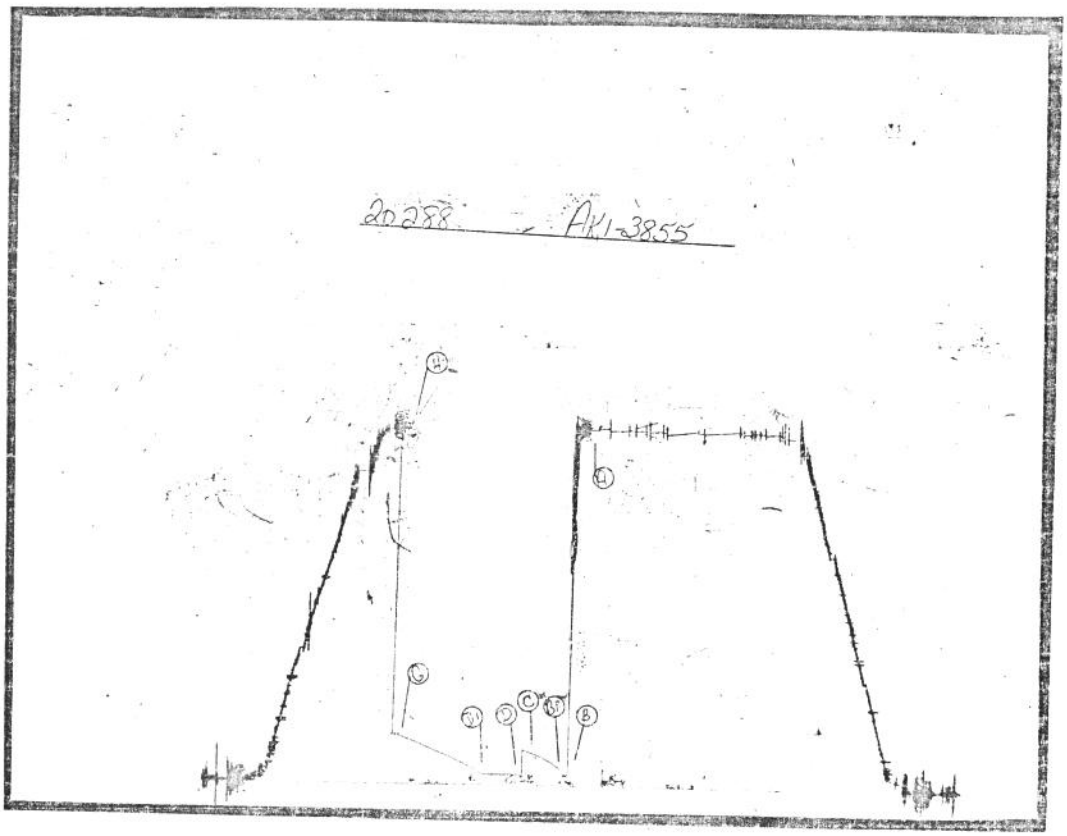
FIELD REPORT NO.	RECORDER NO.
20288	AK1-3855



A. Initial Hyd. Mud
B. First Flow
C. Initial Shut-In
D. Second Flow
E. Second Shut-In
F. Third Flow
G. Final Shut-In
H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.

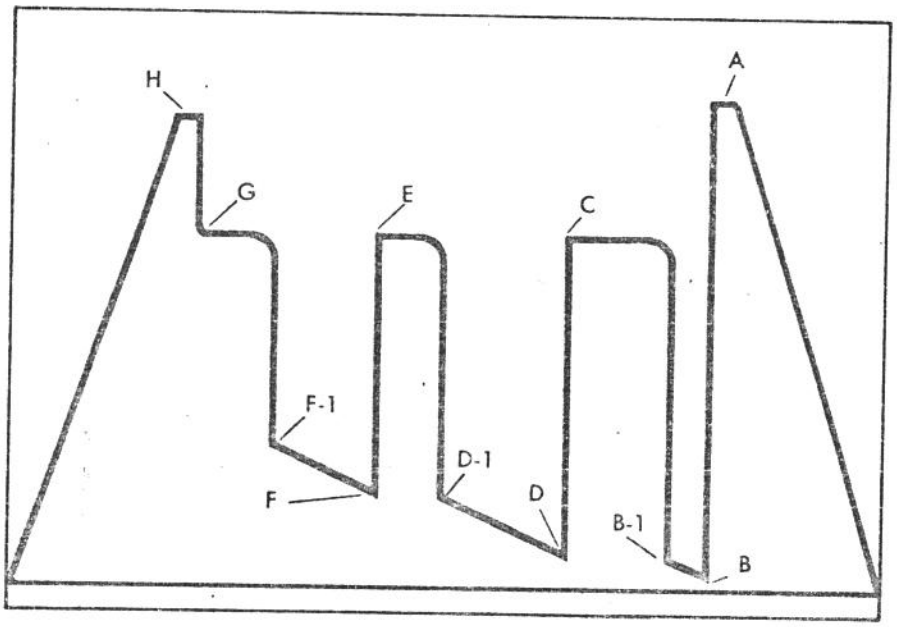


JOHNSTON
Schlumberger

JOHNSTON TESTERS
A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

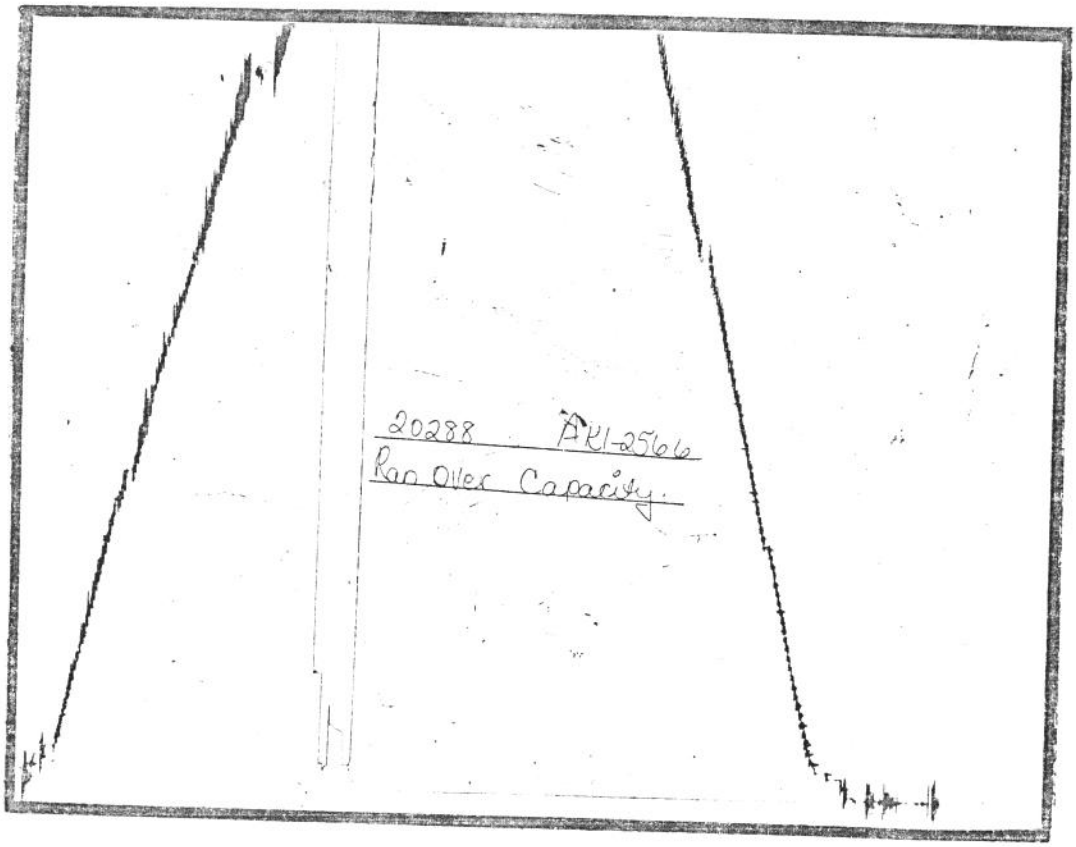
FIELD REPORT NO.	RECORDER NO.
20288	AK1-2566



A. Initial Hyd. Mud
B. First Flow
C. Initial Shut-In
D. Second Flow
E. Second Shut-In
F. Third Flow
G. Final Shut-In
H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.



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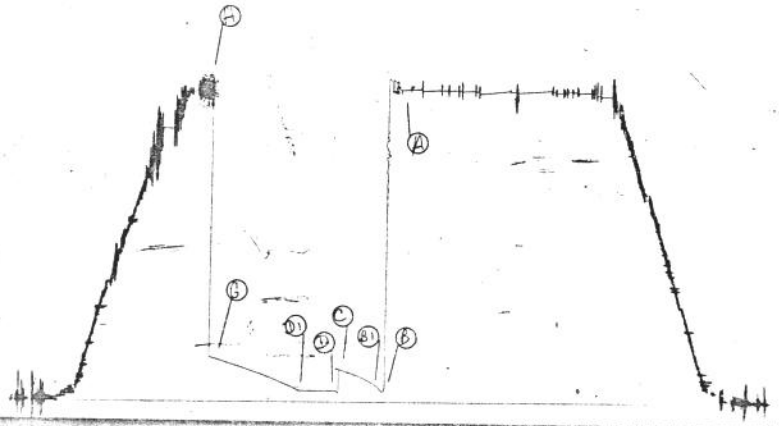
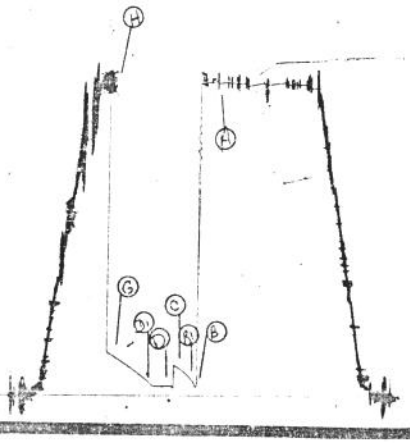


20288 AKI-4521



JT-1&E-4B

JOHNSTON Schlumberger

JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

TEST DATA

Type of Test	Open hole, Straddle, Bypass.				
Time Started in Hole	0130	Hrs.	Tool Opened		Hrs.
First Flow		Min.	Initial Shut-In		Min.
Second Flow		Min.	Second Shut In		Min.
Third Flow		Min.	Final Shut In		Min.
Pulled Loose @		Hrs.	Out of Hole		Hrs.
Wt. Set/on Packers	40,000	#	Pulled Loose Wt.	10,000	#

Description of Blow During Test

NIL

FLUID RECOVERY Was Test Reverse Circulated Yes ☐ No ☐

Total Fluid Recovered Ft.

Description of Fluid Recovered

NIL

GAS BLOW MEASUREMENT

Measured With I.D. Riser

Time	Sfce. Choke		M Cubic Feet/Day
		NIL	

REMARKS: Misrun, seat failure.
Set packer and opened tool, mud started to drop in annulus. Closed tool and reopened, with same results.

RESISTIVITY			SALT CONTENT
Recovery Water	@	°F.	ppm.
Mud Pit sample filtrate	@	°F.	ppm.

TOOL SEQUENCE

Tool	Length	O.D.
P.O. Sub	1.00	
D.P. Sub	.90	
MFE Tool	9.10	
Bypass Tool	3.00	
Jars	6.50	
Hanger Sub	1.00	
Safety Joint	1.75	
S.S. & Packer	9.20	7 3/4"
T.C. & Packer	5.40	7 3/4"
Total	37.85	
Stub	1.00	
Perfs	22.00	
Receiver Sub	1.00	
Recorder	4.40	
Recorder	4.40	
Sub	.86	
Drill Collars	62.00	
Sub	.77	
Travel Collar	3.60	
Total Interval	100.03	
Packer	2.55	7 3/4"
T.C. & Packer	6.40	7 3/4"
Recorder	4.40	
Perfs	16.00	
Sub	2.76	
Drill Pipe	1724.95	
Subs	1.70	
B.N. & Perf	1.70	
Total Below Intv.	1760.46	
TOTAL LENGTH		

Elevation G.L. 1264 K.B. 1294
Bottom Hole Choke Size 1/2"
Fluid Cushion Type Water Amt. 5 Bbls.

MUD AND HOLE DATA

Mud Type	Shell Pal	W.L.	
Filter Cake	2/32	Visc. 44	Wt. 10.0
Time Taken			
Contractor	Adeco Drlg.	Rig No.	10
Drill Pipe Size	4 1/2" XH		
Drill Collar Size	2 7/8" ID	&	
Drill Collar Length	310'	&	
Main Hole Size	8 1/2"	Rat Hole	

District	Inuvik	Ticket No.	D09224	Date	March 22, 1974
Company	Shell Canada Limited			Address	639 - 5 Avenue S.W.
Well Name	Shell Trail River YT H-37				Calgary, Alberta T2P 2K3
Number	66°36'16.00"N 134°50'58.68"W			Field	Wildcat
Formation		Thickness		Co. Rep.	D. Brown
Interval	10,350 - 10,450	T.D.	12,210'	Technician	N. Young
Distribution of Reports	14 - Calgary			Attention:	F. Budda

Test No. 2 J.T. No. 2

JOHNSTON Schlumberger

JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED

321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

D09224

PRESSURE DATA

INSTRUMENT No.		AK1-2089	AK1-2088	AK1-4366	
CAPACITY (psig)		7250	7150	7250	
INSTRUMENT DEPTH FT.		10,374	10,378	10,459	
INSTRUMENT OPENING		Outside	Outside	Outside	
WELL TEMP. °F.					
INITIAL HYDROSTATIC	A	5394#	5378#	5429#	
FIRST FLOW	B				
	B-1				
INITIAL SHUT-IN	C				
SECOND FLOW	D				
	D-1				
SECOND SHUT-IN	E				
THIRD FLOW	F				
	F-1				
FINAL SHUT-IN	G				
FINAL HYDROSTATIC	H	5385#	5369#	5416#	

FLUID SAMPLE REPORT

Sample No.

Type 5"

Depth 10,323'

Volume 2500 cc

Sample Pressure:

psig. at Surface

Gravity API @ °F

Gas/Oil Ratio Cu.Ft./bbl.

Recovery:

Cu. Ft. Gas

cc. Oil

cc. Water

cc. Mud

Total Liquid cc.

REMARKS: No prints made on recorders #AK1-2088 and #AK1-4366.

PRESSURE INCREMENTS ON RECORDER

POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T + \Delta t}{\Delta t}$

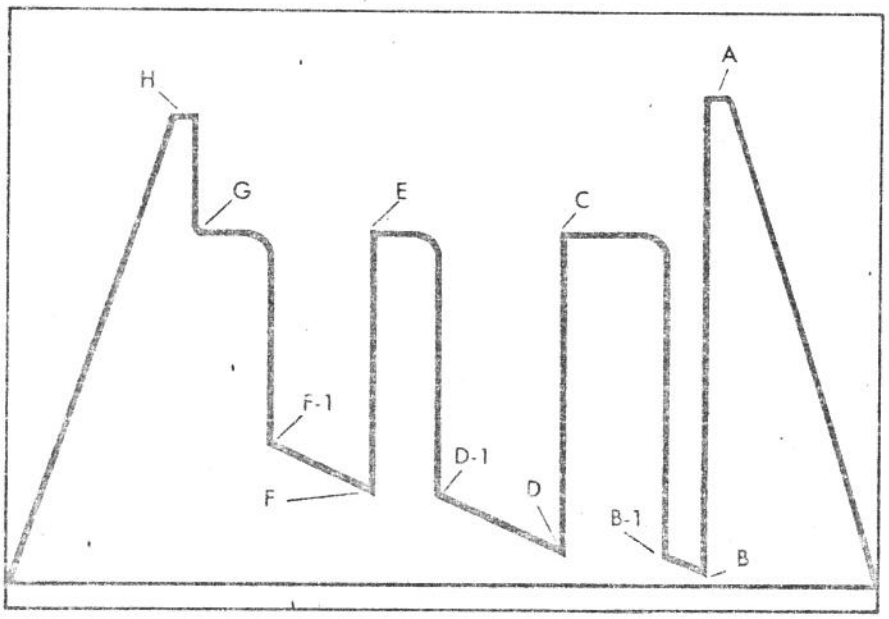
JT-1 & E-13A

JOHNSTON

JOHNSTON TESTERS
A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

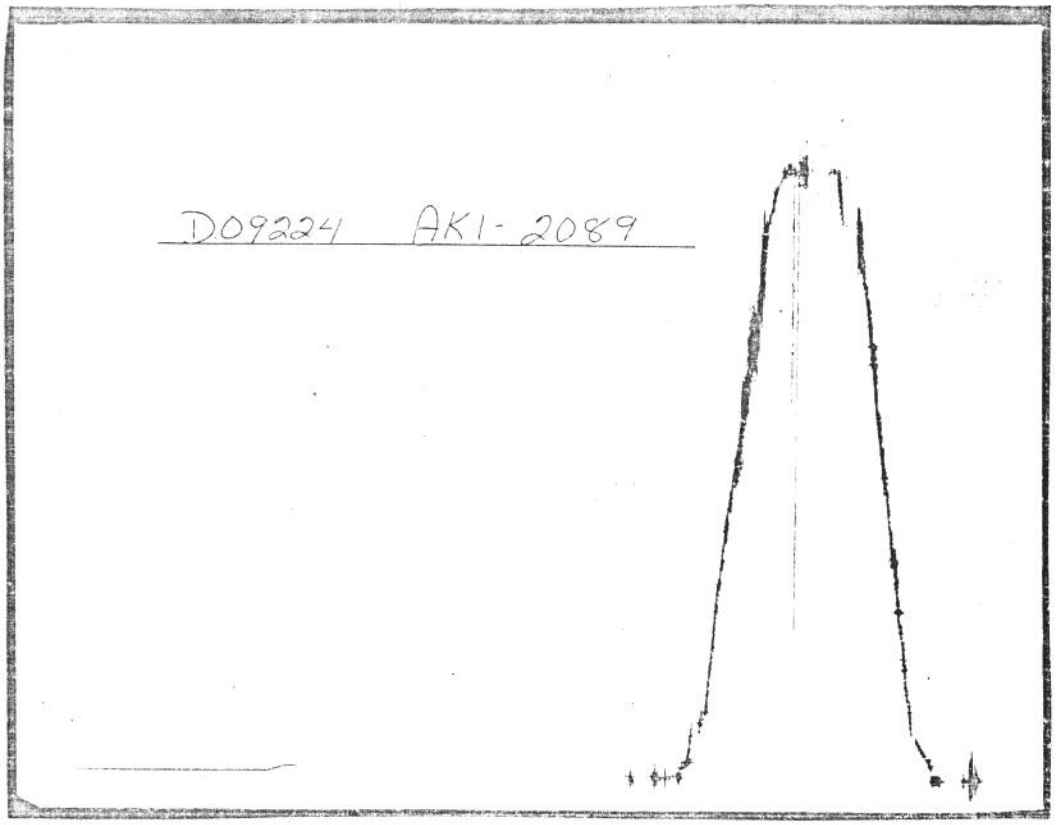
FIELD REPORT NO.	RECORDER NO.
D09224	AK1-2089



A. Initial Hyd. Mud
B. First Flow
C. Initial Shut-In
D. Second Flow
E. Second Shut-In
F. Third Flow
G. Final Shut-In
H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
Z — Special pressure points such as pumping pressures recorded for formation breakdown.



JT-1&E-4B

JOHNSTON Schlumberger

JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

TEST DATA

Type of Test	Open hole, Straddle, Bypass.			
Time Started in Hole	1730 Hrs.	Tool Opened	2238	Hrs.
First Flow	5 Min.	Initial Shut-in	37	Min.
Second Flow	10 Min.	Second Shut In		Min.
Third Flow	Min.	Final Shut In	30	Min.
Pulled Loose @	0001 Hrs.	Out of Hole	0800	Hrs.
Wt. Set/on Packers	50,000 #	Pulled Loose Wt.	20,000	#

Description of Blow During Test: Good initial blow increasing to strong, and remaining steady throughout flow.

FLUID RECOVERY — Was Test Reverse Circulated Yes ☐ No ☒

Total Fluid Recovered: 3,494 Ft.

Description of Fluid Recovered: 3,494' Mud cut salt water.

GAS BLOW MEASUREMENT

Measured With: I.D. Riser

Time	Sfce. Choke		M Cubic Feet/Day
		NIL	

REMARKS: Test satisfactory.
Temp. recorder #4123= 57°-259° = 204°F. at 10,294'. Opened MFE, mud dropped slowly, closed MFE & mud still dropped @ same rate(½ bbl/min.). Pipe bled off during shut-in. Suspected packer seat was good but was a fracture problem so reopened tool. Had good blow mud continued to drop, shut tools in---See 2nd page.

	RESISTIVITY		SALT CONTENT
Recovery Water	@	°F.	ppm.
Mud Pit sample filtrate	@	°F.	ppm.

TOOL SEQUENCE

Tool	Length	O.D.
P.O. Sub	1.00	
D.P. Sub	.90	
MFE Tool	12.50	
Bypass Tool	3.00	
Temp. Recorder	5.60	
Jars	6.50	
Hanger Sub	1.00	
Safety Joint	1.75	
S.S. & Packer	9.20	7 3/4"
T.C. & Packer	5.40	7 3/4"
Total	46.85	
Stub	1.00	
Perfs	17.00	
Receiver Sub	1.00	
Recorder	4.40	
Recorder	4.40	
Sub	.86	
Drill Collars	155.80	
Sub	.77	
Travel Collar	3.60	
Total Interval	188.83	
Packer	2.55	7 3/4"
T.C. & Packer	6.40	7 3/4"
Recorder	4.40	
Perfs	16.00	
Sub	2.76	
Drill Pipe	1662.45	
Sub	1.70	
B.N. & Perf	1.70	
Total Below Intv.	1697.96	
TOTAL LENGTH		

Elevation G.L. 1264 K.B. 1294
Bottom Hole Choke Size 1/2"
Fluid Cushion Type Nil Amt.

MUD AND HOLE DATA

Mud Type	Shell Pal	W.L.	9.1
Filter Cake	2/32	Visc. 44	Wt 10.0
Time Taken			
Contractor	Adeco Drlg.	Rig No.	10
Drill Pipe Size	4 1/2" XH		
Drill Collar Size	2 7/8" ID &		
Drill Collar Length	310' &		
Main Hole Size	8 1/2"	Rat Hole	

District	Inuvik	Ticket No.	D09225	Date	March 22, 1974
Company	Shell Canada Limited			Address	639 - 5 Avenue S.W.
Well Name	Shell Trail River YT H-37				Calgary, Alberta T2P 2K3
Number	66°36'16.00"N 134°50'58.68"W			Field	Wildcat
Formation		Thickness		Province	N.W.T.
Interval	10,323 - 10,512	T.D.	12,210'	Co. Rep.	D. Brown
Distribution of Reports	14 - Calgary			Technician	N. Young

Test No. 3 J.T. No. 3

Attention: F. Budda

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A DIVISION OF SCHLUMBERGER CANADA LIMITED
321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

D09225

PRESSURE DATA

INSTRUMENT No.		AK1-2089	AK1-2088	AK1-4366	
CAPACITY (psig)		7250	7150	7250	
INSTRUMENT DEPTH FT.		10,342	10,346	10,521	
INSTRUMENT OPENING		Outside	Outside	Outside	
WELL TEMP. °F. 206					
INITIAL HYDROSTATIC	A	5374#	5358#	5456#	
FIRST FLOW	B	1585#	1577#		
	B-1	1585#	1577#	A-1 5546#	
INITIAL SHUT-IN	C	3441#	3434#		
SECOND FLOW	D	1656#	1650#	Ran	
	D-1	1656#	1650#	Below	
SECOND SHUT-IN	E			Straddle	
THIRD FLOW	F				
	F-1			A-2 5160#	
FINAL SHUT-IN	G	3159#	3157#		
FINAL HYDROSTATIC	H	5384#	5376#	5469#	

FLUID SAMPLE REPORT

Sample No.	103734&105613
Type	5"
Depth	10288&10285'
Volume	2500 cc
Sample Pressure:	psig. at Surface
Gravity	API @ °F
Gas/Oil Ratio	Cu.Ft./bbl.
Recovery:	
Cu. Ft. Gas	
cc. Oil	
cc. Water	
cc. Mud	
Total Liquid cc.	

REMARKS: ---still mud dropped. At end of final shut-in lost 40 bbls. of mud. Unseated packer, immediately lost another 16 bbls. Pulled test and recovered all water.

PRESSURE INCREMENTS ON RECORDER

POINT MINUTES	PRESSURE	$\frac{T+\Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T+\Delta t}{\Delta t}$	POINT MINUTES	PRESSURE	$\frac{T+\Delta t}{\Delta t}$

JT-1 & E-13A

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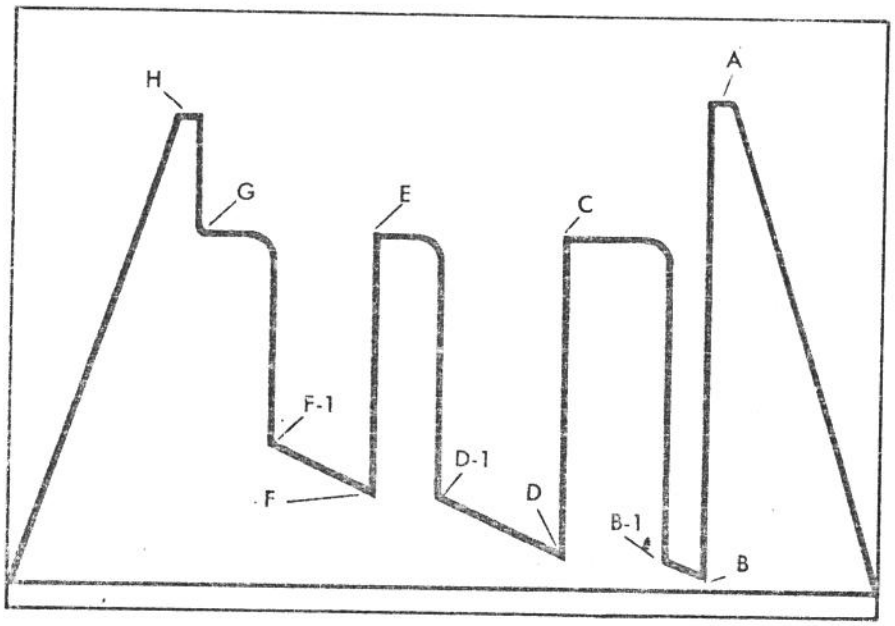
JOHNSTON TESTERS

A DIVISION OF SCHLUMBERGER CANADA LIMITED

321 - 50th AVENUE S.E. CALGARY, ALBERTA T2G 2B3

GUIDE TO IDENTIFICATION OF DRILL STEM TEST PRESSURE CHARTS

FIELD REPORT NO.	RECORDER NO.
D09225	AK1-2089



A. Initial Hyd. Mud
B. First Flow
C. Initial Shut-In
D. Second Flow
E. Second Shut-In
F. Third Flow
G. Final Shut-In
H. Final Hyd. Mud

The following points are either fluctuating pressures or points indicating other packer settings (testing different zones).

A-1, A-2, A-3, etc. Initial Hyd. Pressures
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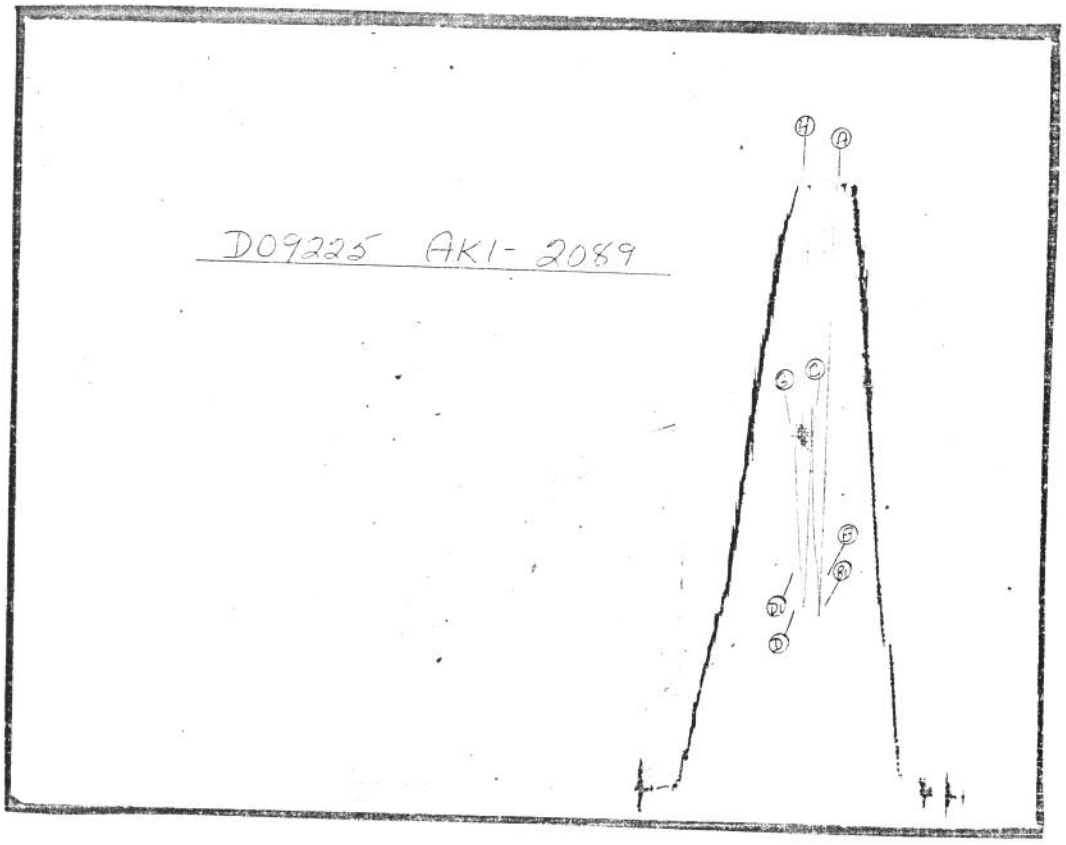
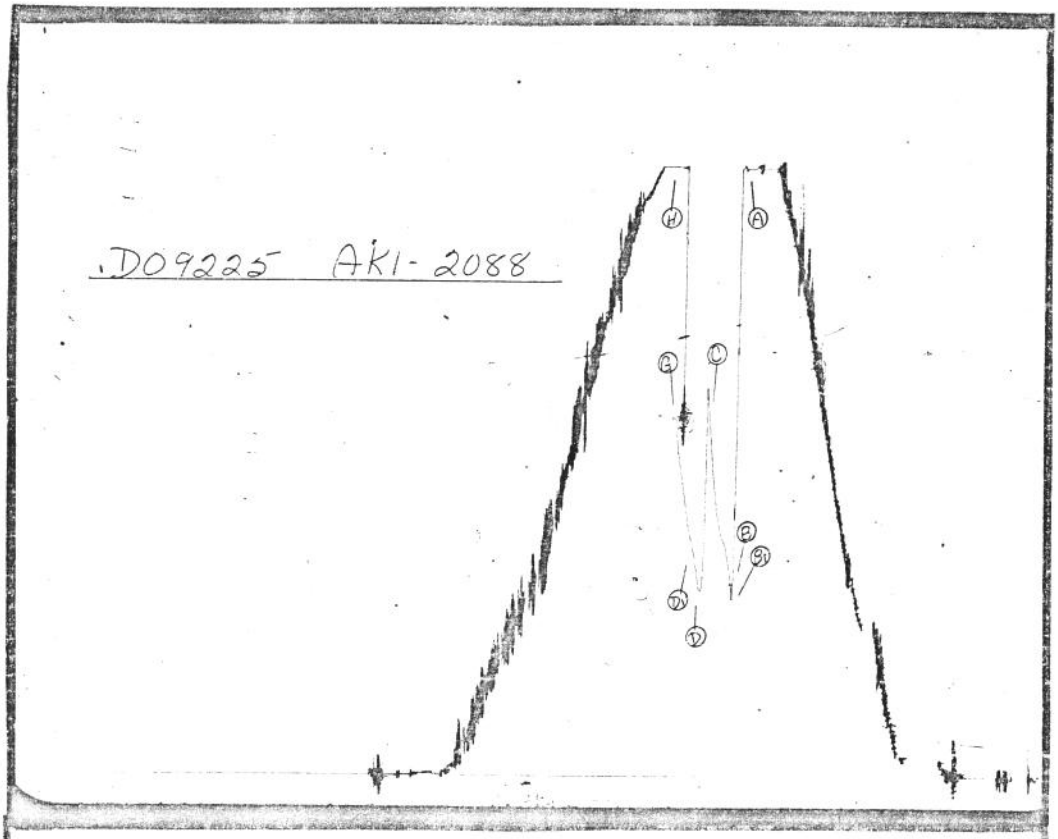


DO9225 AK1-2088



DO9225 - AK1-4366
Ran Below Straddle