3. WELL HISTORY

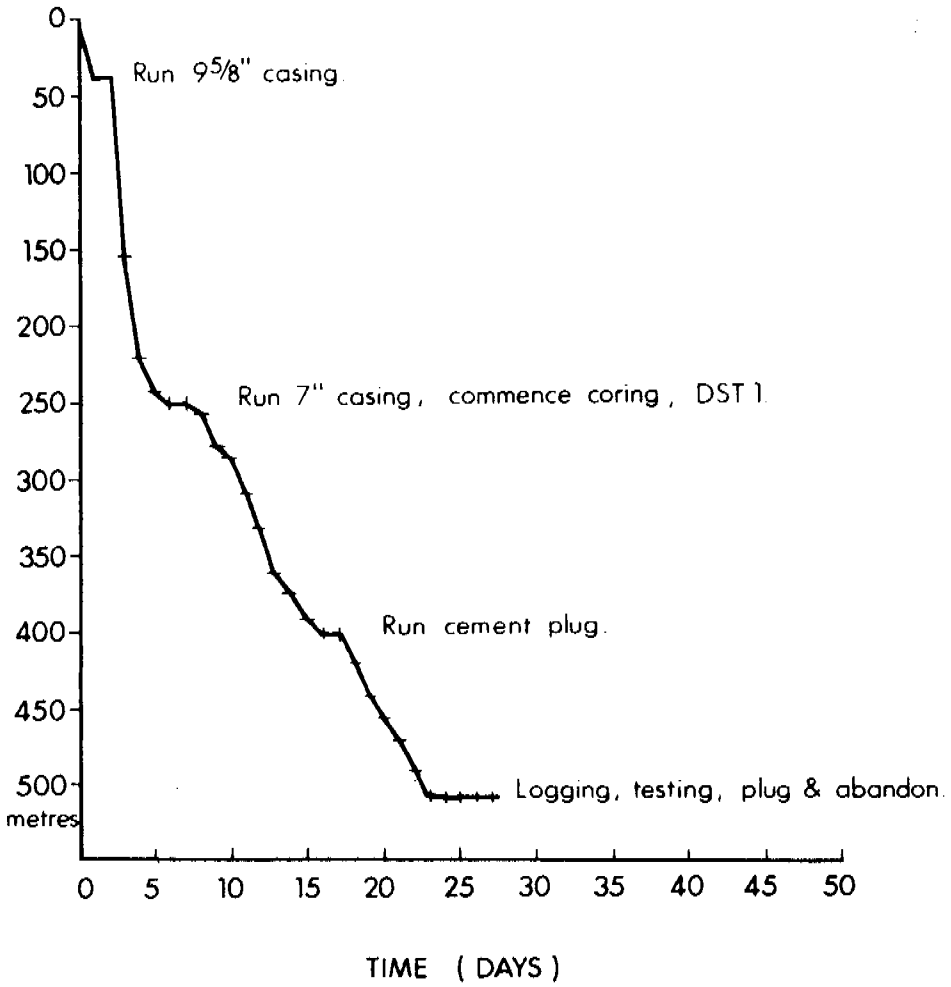
3.1 General Data

Well Name:	Finke No. 1
Operator:	Pancontinental Petroleum Limited, 11th Floor, 20 Bond Street, Sydney, N.S.W., 2000.
Tenement Holder:	Magellan Petroleum (N.T.) Pty. Limited, 8th Floor, 420 George Street, Brisbane, Qld., 4000.
Petroleum Tenement:	Oil Permit 175, Northern Territory.
District:	Henbury
Location:	132° 56' 57"S, 24° 10' 04"E
Water Supply:	Water bore 4.3 kilometres to east of well site.
Elevations:	Ground Level 530 metres a.s.l. Kelly Bushing 531.5 metres a.s.l.
Total Depth:	509.3 metres KB (Driller)
Well Spudded:	06.00 hours, April 26, 1983
T.D. Reached:	20.30 hours, May 19, 1983
Rig Released:	11.00 hours, May 22, 1983
Total Drilling Time:	24 days
Spud to Rig Release:	27 days (Figure 2)
Well Status:	Plugged and Abandoned

3.2 Drilling Plant

Drilling Contractor:	Rockdril Contractors Pty. Ltd., 1 Jijaws Street, Sumner Park, Qld., 4074.
Drilling Rig:	Rockdril Rig 19
Make:	Longyear HD-600
Rated Depth:	1800 metres
Power:	Caterpillar 3306T Diesel engine (210 HP at 2000 RPM)

FINKE Nº1
TIME DEPTH CURVE



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Drawn : D. J. P.	Figure : 2

Mast:	Longyear 53 feet
Mast Capacity:	150,000 lbs
Pumps:	1 5" x 6" Gardner Denver 2 Longyear 435 Bean Pumps
Rotary Power:	Retractable 14" Power Head Hydraulic 3 jaw chuck
Drill Pipe:	800 metre PQ rods (4-1/2" OD) 1800 metre CHD101 rods (3.70" OD) 1800 metre CHD76 rods (2.98" OD)
Well Control Equipment:	Annular preventor - Hydril Type 9K 6" rated at 3000 psi (Bore 7-1/16") BOP - Shaffer Double 6" (Bore 7-1/16") rated at 3000 psi, complete with the following ram assemblies: Blind, 2-7/8", 3-1/2", 4-1/2", 4-5/8", 3.7".

3.3 Drilling Data

3.3.1 Well Configuration (Figure 3)

Hole Size	Depth	Casing & Cementing Details
12-1/4"	39.4 m	Ran 3 joints 9-5/8" casing. Landed shoe at 36.66 metres and cemented with 64 sacks Class "A" cement mixed with 2% $CaCl_2$ at 15.6 ppg.
7-7/8"	252 m	Ran 22 joints 7" casing. Cemented with 94 sacks Class "A" cement with 3% DFR-2 at 15.6 ppg. Displaced with 30 barrels of water. Displacement

		pressure rose to 1300 psi and bumped plug to 1600 psi. No returns during cementing. Float held OK.
5-5/8"	509.3 m	N/A

3.3.2 Drilling Description

An 8" hole was hammered to 40.4 metres after which the 12-1/4" hole opener was run to 39.4 metres. Three joints of 9-5/8" casing were run and the shoe landed at 36.66 metres. Cement was tagged at 36 metres and the 8" hole hammered with air to 93 metres. The hole became wet below 73 metres and tight at 93 metres. The tight hole was reamed and air hammering and surveying continued 224 metres when progress with the hammer halted. The hammer was tripped and replaced with a 7-7/8" roller bit. The 7-7/8" hole was completed to 252 metres with no drilling problems and the 22 joints of 7" casing run and cemented with no returns during cementing. A top cement job was carried out with 30 sacks cement after which the 6" BOPs were installed and the well head equipment pressure tested to 1500 psi.

Cement was tagged at 249.3 metres. The cement and shoe were drilled out and the hole cleaned to 252.3 metres using 101 rod and a 5-5/8" bit. The 5-3/4" core bit and drilling assembly were made up and reamed through the shoe to bottom at 253 metres where a show of live oil was encountered. Coring continued to 258.2 metres whereupon a decision was made to test the encouraging oil shows intersected in the core hole.

DST No. 1 was run over the interval 251.6 to 258.2 metres but no hydrocarbons were recovered, the section

proving tight.

Coring with a salt polymer drilling medium continued to 279.3 metres with minor problems in being unable to retrieve the inner core tube at 277.8 metres. A leak off test was run at the shoe to 300 psi. Slow progress was made to 284.6 metres when the bit was changed. At 288.9 metres it was again impossible to retrieve the tube. The string was pulled and parted at 207 metres while coming out of the hole. The Bowen spear was run and engaged the fish on the first attempt. The fished rod and a cracked pipe 61 metres from the bit were laid out. The bit was changed to a fine stone bit and coring continued to 291.9 metres when it became necessary to change out a cracked kelly saver sub. Coring continued to 315.9 metres where a further cracked saver sub was replaced. No further problems were met until 363.65 metres when the pipe twisted off 21 metres below the rotary table. The fish was retrieved successfully on the first attempt but pipe became stuck on bottom after running back in hole. The pipe was worked free and pulled out to the 7" casing shoe with no obstruction after pulling 24 metres.

Coring recommenced and continued down to 369.65 metres when the wireline parted while attempting to recover core and the drill rods twisted off at 234 metres. The fish was recovered successfully with the Bowen spear and the BOPs lifted to remove bunched up wireline from the well head. The BOPs were reconnected and coring continued to 390.65 metres with a core bit change at 384.65 metres. A blockage occurred at 200 metres while attempting to recover core at 390.65 metres. Pipe was cleaned by circulating but a loose pin in the overshot caused it to hang up in the top stabilizers. Coring continued to 402.65 metres when, in anticipation of

prognosed porous formation, a leak-off test was carried out. This proved unsuccessful and an LCM pill was squeezed. A cement squeeze was made at 333 metres to cover known fractured formation where fluid loss had occurred previously. The BOPs were pressure tested and the check valve cleaned out. The cup tester was pulled, broken down and laid out before running to tag cement at 304.3 metres. Cement was cored from 304.3 to 313 metres then the pipe pulled out of hole to pressure test BOPs and well head equipment to 1500 psi. The hydril was tested to 500 psi successfully. The check valve was again cleaned and the cup tester broken down. Cement was cored from 304.3 to 346 metres after which LCM bridges were washed to bottom at 402.65 metres. Twist off occurred at 231 metres while coring at 402.68 metres and the Bowen fishing spear was again successfully employed.

Coring continued to 446.65 metres with intermittent delays caused by power failures and rig repairs. The bit was changed at 446.65 metres and 14 cracked 3 metre drill rods laid down. Coring continued to 468.4 metres when the pipe parted at 219 metres. The fish was recovered on the first attempt. Coring recommenced and at 477 metres the bit was changed. Ten 3 metre drill pipes were found cracked and were laid down. Coring continued to total depth of 509.3 metres when the string was pulled prior to running down hole logs.

British Plasterboard logs were run after which DST No. 2 was attempted. Leaking drill pipe aborted the first attempt. On the second attempt (DST No. 3) the tool failed to open for the final flow period and the testing equipment was pulled out of the hole. Geoscience then ran three down hole logs before DST No. 4 was run successfully. Geoscience reran their

down hole logging tools after which the well was plugged and abandoned.

3.3.3 Abandonment Programme

The well was plugged and abandoned with three plugs set.

Plug No. 1: 361.9-400 metres. Set with 4 bbl cement (slurry weight 15.0 ppg) displaced with 12.3 bbl mud.

Plug No. 2: 235.7-281.4 metres. Set with 4.8 bbl cement (slurry weight 15.0 ppg) displaced with 8.2 bbl mud.

Plug No. 3: 3.6 metres. Surface plug.

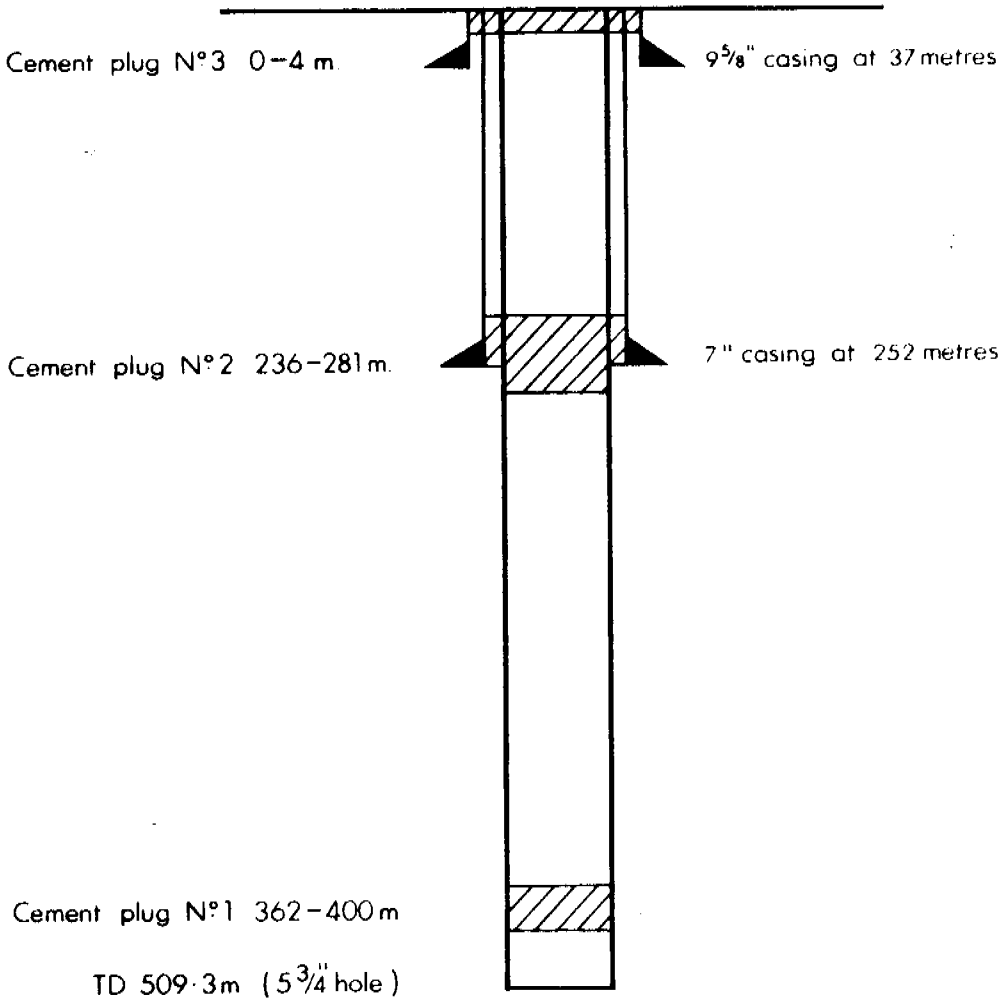
3.3.4 Drilling Fluid

The first stage of the well was percussion drilled with air. A brine-polymer drilling fluid was utilized for the 5-3/4" hole interval from 251.6 metres to total depth of 509.3 metres. This consisted basically of LIQUIVIS and small concentrations of CMC-H.V. for viscosity; 5-8 kilograms per cubic metre of DEXTRID to control filtration; and approximately 50 kilograms per cubic metre of SALT to maintain mud weight at 1.04-1.08 S.G.

No major hole problems were encountered throughout the duration of the well. However, mud losses to the formation at the rate of 1 to 1-1/2 cubic metres per hour occurred at 333 metres. These losses decreased at 353 metres and became negligible as coring continued.

WELL SCHEMATIC
FINKE Nº1

ABANDONMENT PLUGS



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Drawn : D.J.P	Figure : 3

A formation change from siltstone to dolomite was evident at 403 metres. A leak-off test was performed and was unsuccessful. Subsequently two lost circulation material pills were spotted to the formation. Another leak-off test was again unsuccessful. A cement plug was squeezed and coring commenced after the blowout-preventor was tested. No further problems were encountered. The complete Baroid drilling fluid recap is enclosed as Appendix G.

3.3.5 Deviation Surveys

Depth (mKB)	Angle (deg)	Depth (mKB)	Angle (deg)
18	0	173	2-1/2
38	1/2	197	2-1/2
85	1-1/2	224	3
97	1	252	2-1/2
137	2-1/2	272	2-1/2
156	2-1/2	369	4-1/2
		502	5-1/4

3.3.6 Formation Sampling

Cuttings were collected at 5 metre intervals from 10 metres to 253 metres. Sample distribution is as follows:-

1 Northern Territory Department of Mines
1 Bureau of Mineral Resources
1 Magellan Petroleum (N.T.) Pty. Limited
3 Pancontinental Petroleum Limited

Cuttings are described in Appendix A.

3.3.7 Conventional Coring

Continuous cores were cut from a depth of 253 metres to total depth.

Size	Depth
5-5/8"	253 - 509.3 metres

Cores are described in Appendices B, C and D.

3.3.8 Gas Detector and Penetration Rate

A continuous reading hot wire detector and gas chromatograph were used from 36 metres to total depth. Samples were checked for fluorescence and the drilling rate was recorded. Sample descriptions, gas readings and drilling rates are shown in Enclosures 1 and 2.

3.3.9 Sidewall Coring

No sidewall cores were attempted in this well.

3.3.10 Wireline Logging

	Logged Interval		
Log	Top	Bottom	Scales
(British Plasterboard Instruments Ltd.)			
Linearized Density	3	508	1:200
Coal Combination	250	508	1:500
Multichannel Sonic	250	508	1:200/1:500
Dual Neutron	3	507	1:200
Focussed Electric	250	508	1:200

Spontaneous Potential	250	508	1:200
Dipmeter System	250	508	1:50

(Geoscience Associates (Australia) Ltd.)

Dual Density	251	508	1:200
Neutron	0	509.05	1:200
16" Normal/64"Normal	240	505/504	1:200
64" Normal	254	502.5	1:200
6' Lateral	240	501	1:200

All logs were run in 5-5/8" hole. BPB gamma ray run to surface through casing. Geoscience neutron tool also run through casing to surface.

3.3.11 Drill Stem Testing

The conventional drill stem tests (Halliburton) were run in Finke No. 1. All were open hole tests, although the top packer of DST No. 1 was set inside the 7" casing.

DST No. 1 was run to test oil shows encountered in core immediately below the 7" casing. No hydrocarbons were recovered.

DST No. 2 was conducted to obtain a water sample from the lower part of the well. However, the tool failed to reach bottom due to leaking drilling pipe after six stands of collars and fifteen stands of pipe had been run in the hole. The test was rerun as DST No. 3 but aborted after the first shut-in period when the tool failed to open for the final flow period. DST No. 4 was then run over the same interval to obtain final flow and shut-in pressures. This test succeeded in its objective.

The service company reports for all DSTs and the laboratory analyses of the water samples taken are given in Appendices J and E.