

Wellsite Geological Report

PARAMOUNT et al CAMERON
I-74 60° 10' N 117° 15' W

9211-P33.7-1

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WELLSITE GEOLOGICAL REPORT

PARAMOUNT et al CAMERON
I-74 60° 10' 117° 15'

Completed (94-02-15) By:

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WELL HISTORY REPORT
TABLE OF CONTENTS

TAB 1. A. Well Data Summary

 B. Engineering Summary

- i) Casing Summary
- ii) Bit Record
- iii) Deviation Surveys
- iv) Drilling Fluids
- v) Hole Problems
- vi) Lost Circulation
- vii) Well Control Problems

TAB 2. Geological Summary

- i) Formation Tops Summary
- ii) Sample Requirements
- iii) Sample Descriptions

TAB 3. Wellsite Geological Stripchart

TAB 4. Coring Summary

- i) Coring Summary
- ii) Conventional Core Descriptions, ROP Plots, Field
 Core Company Reports

TAB 5. Wireline Logging Summary

- i) Summary Sheet

TAB 6. Drill Stem Testing Summary

- i) Wellsite Drill Stem Test Report
- ii) Testing Company Report & Charts

TAB 7. Chronological Daily Drilling Summary

1A. WELL DATA SUMMARY

WELL NAME: PARAMOUNT et al CAMERON I-74 60° 10' 117° 15'

LOCATION: Unit: I Section: 74 Grid Area: 60° 10' 117° 15'

UWI: 300I746010117150

PROVINCE: Northwest Territories

OPERATOR: Paramount Resources Ltd.

AFE NO.: 18093

PERMIT or LEASE: Federal - Crown SDL - 009

DRILLING AUTHORITY: File #9211-P33-7 CLASSIFICATION: Development

DRILLING CONTRACTOR: PHELPS DRILLING RIG NO: 4E NWT LICENSE #: 2687

K.B. ELEVATION: 782.62 Metres GROUND ELEVATION: 777.77 Metres

C.F. ELEVATION: 778.26 Metres

TOTAL DEPTH: 1644 Metres (Driller's) , 1643.0 Metres (Logger's)

SPUD DATE: 94-01-27 @ 2215 hrs.

DATE TOTAL DEPTH REACHED: 94-02-11 @ 0800 hrs.

DRILLING RIG RELEASE DATE: 94-02-14 @ 1200 hrs.

WELL STATUS: Cased Potential Sulphur Point Oil

WELLSITE DRILLING SUPERVISOR: Gery Fuchs / Russ Campbell

WELLSITE GEOLOGICAL REPRESENTATIVE: W.M.(Mike)WHITE

1B. ENGINEERING SUMMARY

i) Casing and Tubing Record Summary

Hole Size (mm)	Csg. Size (mm)	Wt (kg/m)	Grade	Make	Setting Depth K.B.	Cementing Details
----	-----	-----	-----	-----	-----	-----
311.2	244.5	53.6	J-55	LT&C	396 m.	30 tonnes 0-1-0 'G' + 2% CaCl ₂ Cemented 94-01-31
222.2	177.8	34.2	LS-65	LT&C	1644 m.	20.04 tonnes "Thix Mix" TD-1200m 18.47 tonnes "Microsil" 1200-390m Cemented 94-02-14

1B.

ENGINEERING SUMMARY

ii) Bit Record

Bit #	Make	Type	Size (mm)	Hours	Depth In	Depth Out	Meters Drilled	Condition T/B/G
---	-----	-----	----	-----	-----	-----	-----	-----
1A	STC	R.D.	311.2	15.75	0m	165m	165m	8/8/0
2A	REED	HP11J	311.2	13.50	165	396	241	4/3/1
3ARR	REED	HP11J	311.2	Clean out trip to get casing into hole				
4	REED	HP43A	222.2	60.75	396	1407	1011	4/3/I
5	CHRIS	C201	200.0	25.50	1407	1423	16	Core #1
6	CHRIS	RC476	200.0	8.25	1423	1441	18	Core #2
7	SMITH	F27XXP	222.2	51.00	1441	1602	161	7/8/3
8	SMITH	F3H	222.2	14.25	1602	1644	42	1/1/1

1B. ENGINEERING SUMMARY

iii) Deviation Surveys

Depth	Measurement	Depth	Measurement	Depth	Measurement
-----	-----	-----	-----	-----	-----
31m	0.75°	280m	0.25°	870m	0.75°
59	1.25	308	0.25	971	1.00
89	0.50	339	0.50	1066	0.75
118	0.50	368	0.75	1164	0.50
145	0.75	387	0.75	1270	0.25
178	0.50	487	0.75	1369	0.50
198	0.75	586	0.25	1468	1.00
224	0.75	687	1.00	1572	1.25
251	0.75	772	0.25		

1B. ENGINEERING SUMMARY

iv) Drilling Fluids

Type	Depth (m)	Den. kg/m ³	Vis s/L	W.L. cc/ 30min	pH	PV/YP	Pf/Mf	Cl- mg /L	K+ mg /L	Ca++ mg /L	% Slds	% Oil
Gel H ₂ O	143m	1140	35	12.0	8.5	8/2	.1/.4	200	-	80	8.8	-
	217	1090	35	12.0	9.0	7/3	.2/.5	200	-	80	5.6	-
	396	1150	72	9.0	9.5	24/10	.2/.5	200	-	40	9.4	-
FlocH ₂ O	550	1000			10.0					1000		
	702	1000			9.0					600		
	934	1000			7.0					600		
Gel	1193	1020			7.0					500	1.3	
Chem	1326	1100	42	10.0	8.5	10/6	.1/.2	250	-	80	6.3	-
	1401	1160	55	10.0	9.0	12/9	.1/.3	250	-	120	10.0	-
	1407	1160	47	8.0	10.5	13/6	.3/1.2	250	-	120	10.0	-
	1409	1160	42	9.0	10.5	11/7	.5/1.6	250	-	120	10.0	-
	1412	1150	48	8.0	10.5	17/6	.4/2.5	250	-	100	9.4	-
	1425	1160	47	10.0	9.0	14/6	.1/2.5	250	-	100	10.0	-
	1441	1160	55	8.0	9.0	16/7	.1/2.6	250	-	100	10.0	-
	1451	1170	86	9.0	8.0	16/13	0/2.3	300	-	240	10.6	-
	1483	1140	65	9.5	10.0	19/12	.1/1.0	600	-	360	8.7	-
	1531	1160	58	12.0	10.0	15/9	.1/1.0	600	-	600	9.9	-
	1555	1160	60	10.0	9.0	18/8.5	.1/0.9	600	-	600	9.9	-
	1602	1145	50	12.0	8.5	16/6.5	0/0.8	600	-	560	9.0	-
	1613	1150	58	13.0	8.0	16/7.5	0/0.9	600	-	600	9.3	-
	1644	1170	60	15.0	8.0	16/8	0/1.4	600	-	800	10.6	-

1B. ENGINEERING SUMMARY

- v) Hole Problems (severe deviation, sloughing, dog legs,
etc.)

High degree of sloughing & spalling of formations while drilling caused sample quality to be very poor from uphole contamination.

- vi) Lost Circulation

Normal seepage only, though 165m³ of water was lost after drilling out. Possible fracture.

- vii) Well Control Problems (well flow, blowouts - conditions
before and after blow out)

No well control problems were experienced while drilling this hole.

2.i) GEOLOGICAL FORMATION TOPS

K.B. 782.62m

Formation Age	Formation Name	<u>Sample</u>		<u>Wireline Logs</u>		
		Depth	TVDSS	Depth	TVD	TVDSS
CRETACEOUS						
(Kbs)	Bluesky	547m	+ 235.6m	534.7m	+ 247.9m	+ 247.9m
DEVONIAN						
(Dwa)	Wabamun	556	+ 226.6	554.6	+ 228.0	+ 228.0
(Djm)	Jean Marie	710	+ 72.6	712.0	+ 70.6	+ 70.6
(Dsi)	Fort Simpson	719	+ 63.6	722.6	+ 60.0	+ 60.0
(Dtf)	Twin Falls	829	- 46.4	828.8	- 46.2	- 48.2
(Dhr)	Hay River	991	- 208.4	990.0	- 207.4	- 207.4
(Dbl)	Beaverhil Lk	1283	- 500.4	1285.8	- 503.2	- 503.2
(Dmu)	Muskwa	1322	- 539.4	1321.0	- 538.4	- 538.4
(Dsp)	Slave Point	1358	- 575.4	1343.2	- 560.6	- 560.6
(Dfv)	FtVermillion	1395	- 612.4	1373.5	- 590.9	- 590.9
(Dew)	WattMountain	1408	- 625.2	1392.5	- 609.9	- 609.9
(Dst)	SulphurPoint					
	Limestone	1410	- 627.0	1401.7	- 619.1	- 619.1
	Dolomite	1418	- 635.4	1408.5	- 625.9	- 625.9
(Deg)	Muskeg	1425	- 642.1	1423.9	- 641.3	- 641.3
(Dek)	Keg River	1526	- 743.4	1524.0	- 741.4	- 741.4
(Dec)	Chinchaga	1598	- 815.4	1594.0	- 811.4	- 811.4
(Dgw)	Granite Wash	1611	- 828.4	1614.5	- 831.9	- 831.9
PRE DEVONIAN						
(PC)	Precambrian	1624	- 841.4	1624.2	- 841.6	- 841.6
TOTAL DEPTH		1644	- 861.4	1643.0	- 860.4	- 860.4

2.ii) Sample Requirements

Paramount Resources Ltd.: 1 - 7 ml vial sample every 5 m from surface casing to final total depth.
1 - sample file every 5 m from S.C. to T.D.

Government (N.E.B.) : 1 - unwashed plastic lined bag sample every 5 m from surface casing to final total depth.
1 - 7 ml vial sample every 5 m from S.C. to T.D.

I.S.P.G : 1 - unwashed plastic lined bag sample every 5 m from surface casing to final total depth
1 - processed Geochem jar sample every 10 m from S.C. to T.D.
1 - 7 ml vial sample every 5 m from S.C. to T.D.

Sample Quality : Poor sample quality throughout with numerous intervals with no samples due to blanking of shakers with polymer from mud causing fluids to run over shaker and bypassing of shaker to clean or replace screens. Masking of samples from uphole contamination due to continual sloughing & spalling of the drilled hole.

2.iii) Sample Descriptions

<u>Interval</u>	<u>Description</u>
400-450	SHALE:medium to dark grey, occasionally black, soft to brittle, fissile, slightly micro micaceous in part, sub blocky to platy, possibly bentonitic in part as samples are very poor due to swelling of shales from water drilling fluid
450-500	SHALE:medium to dark grey, blue grey in part, brittle to firm, fissile in part, appears slightly micro micaceous in part, sub blocky to platy, bentonitic in part
500-520	SHALE:medium to dark grey, occasionally black, blue grey in part, brittle to soft, occasionally brittle to firm, fissile in part, sub blocky to sub platy, occasionally bentonitic, very occasional fossil (?fish remains) in 505m sample
520-525	SHALE:as above very minor trace common PYRITE very minor trace white concretion material: possibly Kaolinite
525-547	SHALE:as above, becoming increasingly rough textured to rugosic & increasingly bentonitic in part abundant chalky white concretion material trace KAOLINITE; trace BENTONITE
<u>BLUESKY 547m (+235.6m TVDSS)</u>	
547-550	SANDSTONE:light to medium grey with green glauconite grains, very fine grained, sub angular, fair sorting, siliceous, very argillaceous in part, friable to moderately well consolidated, poor to fair intergranular porosity, no fluorescence, no show, quartzose in part abundant SHALE:as above, probably cavings
550-556	SANDSTONE:as above COAL:black, bituminous, vitreous abundant SHALE:cavings as above??

IntervalDescriptionWABAMUN 556m (+226.6m TVDSS)

556-560	LIMESTONE:chalky cream white to light buff tan, micro to occasionally crypto crystalline, dense, clean, brecciated, fossiliferous in part, appears silty in part abundant SHALE:probably cavings as above
560-565	LIMESTONE:as above abundant SHALE:cavings as above
565-570	LIMESTONE:as above increasingly abundant SHALE:probably cavings, dark to medium grey, occasionally black, fine to medium texture, micaceous in part, splintery to sub blocky
570-590	LIMESTONE:as above
590-595	LIMESTONE:as above abundant SHALE:as above with light green, fine to sub waxy texture, splintery
595-620	LIMESTONE:chalky cream white, as above; abundant light brown to buff, becoming very fine to fine crystalline in part, fragmental/bioclastic, brecciated, fossiliferous abundant SHALE:predominantly light green to grey green as above with decrease dark grey as above
620-635	LIMESTONE:predominantly as above, becoming increasingly medium to dark brown throughout interval increase SHALE:medium to dark grey, occasional black, probably cavings
635-675	LIMESTONE:chalky cream white, as above; increase mottled medium to dark brown, grey brown, fine to medium crystalline, dense, clean to very slightly argillaceous, brecciated, fragmental/bioclastic, fossiliferous abundant SHALE:medium to dark grey, occasional black, probably cavings; occasional minor light grey green SHALE:as above
675-680	LIMESTONE:as above, becoming lighter coloured slight decrease SHALE:as above
680-685	LIMESTONE:as above, appears darker abundant SHALE:as above abundant Lost Circulation Material - no losses

<u>Interval</u>	<u>Description</u>
685-695	No samples - shakers blanked off by polymer in Floc Water mud system
695-710	LIMESTONE:cream to chalky white & buff brown, crypto to fine crystalline, silty to sandy appearing in part, dense, slightly argillaceous abundant SHALE:medium to dark grey, abundant light grey green, brittle to firm, splintery, probably cavings
<u>JEAN MARIE 710m (+ 72.6m TVDSS)</u>	
710-715	LIMESTONE:as above, silty to sandy, slightly dolomitic, occasionally fossiliferous
715-719	No Sample - shakers blanked off
<u>FORT SIMPSON 719m (+ 63.6m TVDSS)</u>	
719-745	No Samples - shakers blanked off from polymer in mud
745-750	SHALE:dark grey to black, occasional light grey green, fine to sub waxy texture, occasionally calcareous, micro micaceous in part, silty to sandy in part, brittle to firm, sub blocky abundant LIMESTONE:as above
750-760	Unable to wash cutting due to high concentration of polymer and dispersed clay material; No chips cuttings in sample
760-775	No Samples - shaker blanked off as above
775-795	SHALE:light green grey, dark grey to black, fine texture, mudstone appearing, variably calcareous, firm to hard, sub blocky, sub fissile abundant LIMESTONE:cream to chalky white, crypto to very fine crystalline, dense, clean, appears silty to sandy in part, dolomitic in part
795-829	SHALE:as above with abundant olive brown, fine textured, slightly micro micaceous, brittle, sub blocky abundant LIMESTONE:as above
<u>TWIN FALLS 829m (- 46.4m TVDSS)</u>	
829-855	LIMESTONE:light grey to cream white, buff light grey white, micro to very fine crystalline, silty to sandy appearing, fragmental/bioclastic, dense, clean; abundant SHALE:cavings

<u>Interval</u>	<u>Description</u>
850-875	LIMESTONE:as above increasingly abundant SHALE:cavings as above abundant Lost Circulation Material:celloflake, no losses
875-900	LIMESTONE:as above abundant SHALE:light green, sub waxy, firm to brittle, slightly calcareous, occasionally very slightly micro micaceous, probably cavings
900-950	LIMESTONE:as above with occasional abundant light to medium grey, light to medium buff brown, increasingly argillaceous appearing, micro to very fine crystalline, dense interbedded SHALE:light green, olive brown abundant SHALE:cavings as above
950-991	interbedded LIMESTONE & SHALE LIMESTONE:as above SHALE:increase olive brown with predominantly light green as above

HAY RIVER SHALE 991m (-208.4m TVDSS)

991-1015	SHALE:medium to dark grey, occasional grey to black, abundant light green, olive brown, fine to medium & in part sub waxy texture, micro micaceous, sub blocky, splintery in part abundant LIMESTONE:cream white, yellow buff tan, crypto to very fine crystalline, silty to sandy appearing in part, dense, occasionally slightly argillaceous, fossiliferous in part
1015-1050	SHALE:predominantly light to medium green, sub waxy, brittle to firm, fissile, sub blocky to splintery, slightly calcareous in part, slightly micro micaceous in part; occasional dark grey & olive brown, medium to occasionally sub waxy texture, brittle to firm, sub blocky, slightly micro micaceous in part occasional abundant LIMESTONE:as above
1050-1060	SHALE:predominantly medium to dark grey & olive brown, as above with abundant light to medium green, as above minor LIMESTONE:as above
1060-1065	No Sample
1065-1070	SHALE:medium to dark grey & olive brown as above

IntervalDescription

1070-1085	SHALE:light to medium green, grey green, sub waxy, brittle to firm, fissile, sub blocky, splintery in part, slightly calcareous in part, micro micaceous in part; occasional abundant medium to dark grey as above minor interbedded LIMESTONE:cream white to buff tan, crypto to very fine crystalline, dense
1085-1110	SHALE:light to medium green, grey green, as above increasingly abundant interbedded LIMESTONE:cream white, light grey, slightly mottled in part, very fine to fine crystalline, occasionally slightly argillaceous, dense
1110-1150	SHALE:medium to dark grey, light grey green, occasional to abundant brown, fine to sub waxy texture, calcareous in part, micro micaceous in part, brittle to firm, splintery to sub blocky abundant interbedded LIMESTONE:light grey, cream buff tan, very fine to fine crystalline, occasionally silty to sandy, dense
1150-1190	SHALE:predominantly light green to light grey green, abundant medium to dark grey, very minor brown, as above decrease interbedded LIMESTONE:as above
1188*	Commence Mud up with Gel Chem
1190-1200	SHALE:predominantly as above with increase abundant medium brown, fine to sub waxy, firm to hard, sub blocky, slightly micro micaceous minor interbedded LIMESTONE:as above
1200-1250	SHALE:predominantly medium to dark grey, fine to medium texture, slightly calcareous in part, sub blocky; abundant light grey green, fine to sub waxy texture, calcareous, splintery to sub blocky minor interbedded LIMESTONE:cream to buff light grey white, micro to very fine crystalline, dense, chalky in part
1250-1283	SHALE:medium grey, green grey, fine to sub waxy texture, occasionally slightly calcareous, sub blocky to blocky, slightly micro micaceous in part, abundant traces white calcium carbonate mud additive precipitate specks in 1280m sample

IntervalDescriptionBEAVERHILL LAKE 1283m (-500.4m TVDSS)

- 1283-1290 **SHALE:**dark grey to black, fine to slightly medium texture, slightly micro micaceous, calcareous in part, occasional white calcium carbonate mud precipitate specks, firm to hard, sub blocky to blocky, fissile in part
- 1290-1305 **SHALE:**medium to dark grey, occasional black, occasional white calcium carbonate specks as above, fine to occasional medium texture, slightly micro micaceous in part, calcareous in part, firm to hard, fissile in part, sub blocky to blocky
- 1305-1322 **SHALE:**as above with increase black, white speckled in part
minor interbedded LIMESTONE:chalky cream white, crypto crystalline, dense

MUSKWA 1322m (-539.4m TVDSS)

- 1322-1340 **SHALE:**becoming predominantly black, slightly carbonaceous, medium to dark grey, green grey, occasionally with light grey to buff brown calcite crystal association, fine texture, brittle to hard, fissile in part, sub platy to blocky, predominantly calcareous
interbedded LIMESTONE:cream white to light grey, brown, micro to occasionally fine crystalline, chalky in part, dense, fossiliferous, occasionally very argillaceous
- 1340-1350 **SHALE:**as above with slight increase calcareous crystal association, abundant white calcium carbonate mud additive precipitate
abundant LIMESTONE:cream chalky white, buff to medium brown, crypto to fine crystalline, slightly sandy appearing in part, fossiliferous in part
- 1350-1358 **SHALE:**as above
slight decrease LIMESTONE:as above

SLAVE POINT 1358m (-575.4m TVDSS)

- 1358-1375 **LIMESTONE:**brown mottled with chalky white, fine crystalline, appears slightly sandy, fossiliferous, predominantly dense with possible minor trace intercrystalline & very minor trace vuggy porosity, occasionally with pyrobitumen (1365-1375m), no show
abundant SHALE:probably cavings as above with possible minor lamination throughout

<u>Interval</u>	<u>Description</u>
1375-1385	LIMESTONE:as above, dense minor trace ANHYDRITE:cream white, chalky
1385-1395	LIMESTONE:as above, occasional light grey, micro crystalline, silty in part, dense, dolomitic in part increase abundant SHALE:green grey, dark grey, fine texture, slightly calcareous in part, slightly micro micaceous in part, splintery to sub blocky very minor trace ANHYDRITE:as above, interpreted as possible interbedded anhydrite with anhydrite going into solution affecting the mud rheology
<u>FORT VERMILLION 1395m (-612.4m TVDSS)</u>	
1395-1400	LIMESTONE:chalky white, light grey, buff brown, crypto to fine crystalline, fossiliferous, dense, argillaceous in part, anhydritic, slightly dolomitic in part abundant SHALE:as above with minor trace waxy green, possible cavings, splintery minor trace ANHYDRITE:as above
1400-1407	LIMESTONE:as above abundant SHALE:as above with increase waxy green, abundant brown, appears splintery, possibly cavings trace ANHYDRITE:interpreted lithology as mud is clobbered
1407-1422.8	CORE #1: Cut 15.8 metres, Recovered 15.8 metres, 25.50 hours
1422.8-1441	CORE #2: Cut 18.2 metres, Recovered 18.2 metres, 8.25 hours
<u>MUSKEG 1425m (-642.1m TVDSS)</u>	
1441-1445	ANHYDRITE:cream white, flesh to light orange brown calcareous coated, sucrosic to chalky, occasionally slightly dolomitic, massive trace DOLOMITE:light grey, light brown, very fine crystalline, dense, anhydritic abundant SHALE:light to medium grey, grey green, light green, fine texture, waxy in part, firm to hard, splintery to sub blocky, probably cavings

<u>Interval</u>	<u>Description</u>
1445-1470	ANHYDRITE:cream white, flesh to light orange brown calcareous coated, sucrosic to chalky, occasionally slightly dolomitic, massive interbedded DOLOMITE:light to medium brown mottled in part with white anhydrite, very fine to fine crystalline, appears sucrosic/silty, predominantly dense with traces poor intercrystalline porosity, no fluorescence, no show, anhydritic
1470-1495	ANHYDRITE:as above slight increase interbedded DOLOMITE:as above abundant SHALE:cavings as above
1495-1505	ANHYDRITE:cream chalky white, medium brown, orange brown calcareous coated, sucrosic in part, interbedded DOLOMITE:light to medium brown, occasional light grey to grey brown, very fine to fine crystalline, sucrosic/silty appearing, poor to fair intercrystalline porosity, no fluorescence, no show abundant SHALE:cavings as above
1505-1510	ANHYDRITE:as above decrease DOLOMITE:as above abundant SHALE:waxy light green grey, blocky, slightly pyritized in part
1510-1520	interbedded ANHYDRITE, SHALE & DOLOMITE: as above
1520-1526	ANHYDRITE:cream chalky white, light to medium brown, massive abundant DOLOMITE:light to medium brown, mottled with white in part, very fine crystalline, dense with minor trace poor intercrystalline porosity, no fluorescence, no show, anhydritic in part trace LIMESTONE:mottled white brown, fine to medium crystalline, fragmental/bioclastic, dolomitic in part, slightly anhydritic abundant SHALE:waxy light green grey

KEG RIVER 1526m (-743.4m TVDSS)

1526-1535	DOLOMITE:light to medium brown, occasional medium to dark brown, mottled in part with white, micro to very fine crystalline, silty to sandy appearing, poor to fair intercrystalline with very minor occasional vuggy porosity, no fluorescence, occasional weak slow streaming yellow cut
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<u>Interval</u>	<u>Description</u>
1535-1545	DOLOMITE:light to medium brown, mottled in part, very fine crystalline, sucrosic/silty appearing, predominantly dense with very minor occasional intercrystalline porosity, no fluorescence, no show
1545-1560	DOLOMITE:light to medium brown as above; abundant medium to dark brown, very fine to fine crystalline, sucrosic/silty to sandy appearing, poor to fair intercrystalline porosity , no fluorescence, very slight weak streaming yellow cut trace ANHYDRITE:light brown, cavings??
1560-1598	DOLOMITE:light to medium brown, abundant medium to dark brown, mottled appearing in part, micro to very fine crystalline, sucrosic/silty appearing in part, occasional poor intercrystalline porosity, no fluorescence, no show minor trace ANHYDRITE:cream chalky light grey white, light brown, caving??

CHINCHAGA 1598m (-815.4m TVDSS)

1598-1605	DOLOMITE:light to dark brown, mottled in part with white anhydrite, very fine to fine crystalline, dense, slight to moderately argillaceous, very anhydritic in part ANHYDRITE:white to light brown, occasional light grey, chalky to sucrosic, massive trace SHALE:medium to dark grey, fine texture, blocky minor trace LIMESTONE:dark brown, crypto crystalline, dense, moderately argillaceous
1605-1611	ANHYDRITE:light brown, grey brown, occasional cream white, massive interbedded DOLOMITE:as above increase SHALE:as above minor trace LIMESTONE:as above

GRANITE WASH 1611m (-828.4m TVDSS)

1611-1615	predominantly ANHYDRITE & DOLOMITE:as above abundant SHALE:waxy light to medium green, green grey, blocky
1615-1624	questionable interpretation SANDSTONE:clear to frosted, medium to very coarse grained, angular to sub rounded, unconsolidated, probably fair porosity, no fluorescence, no show abundant ANHYDRITE & DOLOMITE:cavings?? as above

Interval

Description

PRECAMBRIAN 1624m (-841.4m TVDSS)

1624-1644

Granite **QUARTZ & FELDSPARS** with associated black biotite mica; abundant unconsolidated, very coarse grained **QUARTZ** probably caving from Granite Wash sandstone

4.i) CORE SUMMARY

<u>Core No.</u>	<u>Interval</u>	<u>Formation</u>	<u>Recovery</u>	<u>Comments</u>
1	1407-1422.8	Sulphur Point	15.8m	-Preserved core
2	1422.8-1441	Sulphur Point Muskeg	18.2	-Preserved core

CORE REPORT

WELL NAME: PARAMOUNT et al CAMERON I-74		LOCATION: I-74 60 10' 117 15'		FIELD/AREA: Cameron	
DATE: 94-02-06		TIME: 0001h		EXAMINER: W.M.(Mike)WHITE	
CORE NO.: 1	INTERVAL: 1407.00 m TO 1422.80 m	RECOVERY: 15.8 m	CORE SIZE: 102 mm	FORMATION: Dew/Dst	
TYPE SDWLL SAMPLER:		SDWLL REC. - NO. OF SHOTS:	NO. RECOV:	NO. OF BOXES: 17	

DEPTH	Min/5th m	TOTAL GAS (%)	PORO		GRNSZ	GEOLOGICAL DESCRIPTION
			FLNEGT	LITHOLOGY		
1407.00						Core #1 was cut to be preserved for analysis. Method of preservation at the wellsite was by wrapping core in cellophane & placing in polyfoil, heat sealed, nitrogen purged bags. Because no water was used to wash the core off after recovery, the extreme cold (-45C) froze the drilling fluid to the core, allowing only minimal wiping with paper towels. With the mud adhered to the core exterior visual examination was restricted. The coldness of the core allowed minimal reaction with HCl even with heated acid. Hydrocarbon staining, fluorescence & cut were the only definitive descriptions made of core. Lithology is questionable at best. Time was a factor in order to attain preservation.
1408.00						
1409.00						1407.00-1408.78 : n flor, n cut
1410.00						1408.78-1412.29 : Sp o stn, sp lt yel flor, fst stmg yel wh cut flor
1411.00						
1412.00						1412.29-1413.63 : Even o stn thru, Bri straw wh yel flor, fst stmg bl yel cut flor
1413.00						
1414.00						1413.63-1414.11 : Sp o stn, sp lt yel flor, stmg wh yel cut flor
1415.00						1414.11-1414.94 : O stn thru, bri straw yel flor, stmg bl yel cut flor
1416.00						1414.94-1416.34 : Sp o stn thru, sp bl yel flor, straw yel cut fluor
1417.00						No Gas readings as trap drop out loop froze off
1418.00						1416.34-1417.69 : Sp o stn thru, lt bl yel flor, bl yel stmg cut flor
1419.00						1417.69-1421.62 : Sp o stn thru, sp lt-bri lt yel flor bl yel cut flor
1420.00						
1421.00						??Dol:brn w wh calc mtx,suc app,crypto-f xl,pr intxl por
1422.00						1421.62-1422.80 : Even o stn thru, lt yel flor, straw yel cut flor
1423.00						Jammed off @ 1422.8m

CORE REPORT

FIELD/AREA: Cameron

EXAMINER: W.M. (Mike) WHITE

FORMATION: Sulphur Pt

NO. OF BOXES: 20

DEPTH	Min/5th m	TOTAL GAS (%)	PORO		GRNSZ		GEOLOGICAL DESCRIPTION
			FLREGFT	LITHOLOGY	SURFAC		
1423.00							Intv: 1422.80-1424.75m Dol: m brn, bleeding o stn, f xl, f p-p & p mic vug por, sp o stn thru, sp gld yel flor, stwg bl yel cut flor
1424.00							
1425.00							MUSKEG @ 1424.75m (-642.13mSS) Anhy: wh, lt gy, lt-m brn w orng brn core exterior, chky -xl, mas, occ dol intbd, occ blk sh lam
1426.00							
1427.00							
1428.00							Intbd Dol: m brn, mi-vf xl, pred dns w occ p-p & mi vug por, no shw, intbd w anhy
1429.00							
1430.00							
1431.00							
1432.00							Intv: 1432.38-1432.91m Dol: m brn, mi-f xln, abd p-p & mi vug por, bleeding o stn thru, bri gld yel flor, stwg bl wh cut flor
1433.00							
1434.00							
1435.00							
1436.00							Intbd Dol: m brn, mi-vf xl, pred dns w occ p-p & mi vug por, no shw, intbd w anhy
1437.00							
1438.00							
1439.00							
1440.00							
1441.00							Dol: dk brn, mi-vf xl, dns, anhy assoc
1442.00							

START (m)	DEPTH (m)	TIME	MIN/METRE		Mud Report & Remarks	WEIGHT daN	r/min	PUMP SIZE	
			Actual	Lost				Pressure kPa	Stroke mm
0.2	02	1835	35						
0.4	04	1845	40			4-5	60	6700	100
0.75	0.6	1850	25						
1.00	0.8	1900	20			6-7	40	6700	100
1.25	1.0	1908	19						
1.50	1.2	2042	31		Vis 47				
1.75	1.4	2100	18		Density 1150				
2.00	1.6	2124	24		PH 10				
2.25	1.8	2150	26	5					
2.50	2.0	2223	23	5					
2.75	2.2	2240	17						
3.00	2.4	2300	20			6-7	80	6700	100
3.25	2.6	2312	12						
3.50	2.8	2330	18						
3.75	3.0	2350	16						
4.00	3.2	0019	21						
4.25	3.4	0035	16						
4.50	3.6	0049	14						
4.75	3.8	0100	11						
5.00	4.0	0112	12						
5.25	4.2	0130	18						
5.50	4.4	0148	18						
5.75	4.6	0201	13						
6.00	4.8	0214	13						
6.25	5.0	230	16						
6.50	5.2	247	17						
6.75	5.4	304	17						
7.00	5.6	317	13						
7.25	5.8	337	17						
7.50	6.0	351	19						
7.75	6.2	409	18						
8.00	6.4	429	20						
8.25	6.6	451	22						
8.50	6.8	510	19						
8.75	7.0	529	19			6-7	80	7000	100
9.00	7.2	546	19						
9.25	7.4	605	19						
9.50	7.6	621	16		Vis 48				
9.75	7.8	637	16						
10.00	8.0	653	18		Density 1150				
10.25	8.2	717	22		PH: 10				
10.50	8.4	727	23		AD FINE				
10.75	8.6	0810	35						
11.00	8.8	0845	30						
11.25	9.0	0917	25	8					
11.50	9.2	0947	25	5					
11.75	9.4	1004	17						
12.00	9.6	1024	20						
12.25	9.8	1042	23		(BREAK AT 4TH OVER)				
12.50	10.0	1134	22	30	Connection	6-7	80	7000	100
12.75	10.2	1102	28						
13.00	10.4	1127	25						
13.25	10.6	1300	33						
13.50	10.8	1357	37						
13.75	11.0	1400	23						
14.00	11.2	1430	30						
14.25	11.4	1444	14						
14.50	11.6	1457	13						
14.75	11.8	1512	15						
15.00	12.0	1523	11						
15.25	12.2	1537	12						
15.50	12.4	1553	15						
15.75	12.6	1605	13						
16.00	12.8	1616	11						
16.25	13.0	1625	9						
16.50	13.2	1635	10						
16.75	13.4	1646	11						
17.00	13.6	1700	14						
17.25	13.8	1715	15						
17.50	14.0	1730	15						
17.75	14.2	1740	10						
18.00	14.4	1753	13						
18.25	14.6	1803	10						
18.50	14.8	1816	13						
18.75	15.0	1830	14						
19.00	15.2	1848	13						
19.25	15.4	1853	15						
19.50	15.6	1904	12						
19.75	15.8	1927	17						
20.00	16.0		30						
20.25	16.2								
20.50	16.4								
20.75	16.6								
21.00	16.8								
21.25	17.0								
21.50	17.2								
21.75	17.4								
22.00	17.6								
22.25	17.8								
22.50	18.0								
22.75	18.2								

CORING LOG FROM

BAKER HUGHES INTEQ A DIVISION OF BAKER HUGHES CANADA INC.

700, 736 - 8 Avenue S.W.
Calgary, AB T2P 1H4
Phone: (403) 296-9700 / Fax (403) 296-9785

Date Feb 4/94 Service Representative M Dixon
Company PARAMOUNT Contractor Phelps 4E
Well Name/No. PARAMOUNT FALCAMON 1-74-60°-10'-117°15'
Field _____ Hole Size (mm) 222
Diamond Bit Size (mm) 222 x 102 Bit No. 06075
Diamond Bit Type C-201 Core Barrel Size (mm) 171 x 109
Length (m) 22.45 No. C-15 Jar No. 626
Core No. 1 Depth: From 1407 m To 1422.8
Total Metres Cored 15.8 Recovered 15.8
Hours 25 1/2 hrs Formation Cored upper Sulphur Point
Description Shale - Dolomite - Sandstone
Time Reaming To Bottom 3 hrs
Mud Wt. (kg/m³) 1160 r/min. _____
Mud Flowrate (m³/min.) 1.1
Bit Condition: Before Good % After Good

Delete the column which doesn't apply.

START (m)	DEPTH (m)	TIME	MIN METRE		Mud Report & Remarks	WEIGHT daN	r/min	PUMP SIZE	
			Actual	Lost				Pressure kPa	Stroke mm
0.2	1422.8	0738							
0.4	1423	0733	3			3-4	60	4000	100
0.6	04		3						
0.75	0.6		3						
1.00	0.8		3						
1.25	1.0		3						
1.50	1.2	0743	3						
1.75	1.4		4						
2.00	1.6		4						
2.25	1.8		4						
2.50	2.0		4						
2.75	2.2	0800	4						
3.00	2.4		4						
3.25	2.6		4			3-4	60	4000	100
3.50	2.8		4						
3.75	3.0		4						
4.00	3.2	0820	4						
4.25	3.4		4						
4.50	3.6		4						
4.75	3.8		4						
5.00	4.0		4		Density 1100				
5.25	4.2	0830	4		U.S. 49				
5.50	4.4		4						
5.75	4.6		4						
6.00	4.8		4						
6.25	5.0		4						
6.50	5.2	0900	4						
6.75	5.4		5						
7.00	5.6		5						
7.25	5.8		5						
7.50	6.0		5			3-4	60	4000	100
7.75	6.2	0924	5						
8.00	6.4		6						
8.25	6.6		6						
8.50	6.8		6						
8.75	7.0		6						
9.00	7.2	0957	6						
9.25	7.4		6						
9.50	7.6		5						
9.75	7.8		5						
10.00	8.0		5						
10.25	8.2	1020	5						
10.50	8.4	1025	5						
10.75	8.6	1030	5						
11.00	8.8	1035	5						
11.25	9.0	1043	5						
11.50	9.2	1055	5			3-4	60	4000	100
11.75	9.4	1100	5		AD 11000				
12.00	9.6	1108	8						
12.25	9.8	1115	7						
12.50	10.0	1120	5						
12.75	10.2	1126	6		Connection				
13.00	10.4	1154	3	20		3-4	60	4000	100
13.25	10.6	1208	8						
13.50	10.8	1208	6						
13.75	11.0	1212	4						
14.00	11.2	1218	6						
14.25	11.4		5						
14.50	11.6		5						
14.75	11.8		5						
15.00	12.0		7						
15.25	12.2	1244	7						
15.50	12.4		6						
15.75	12.6		6						
16.00	12.8		6						
16.25	13.0		6						
16.50	13.2	1315	6						
16.75	13.4		7						
17.00	13.6		7						
17.25	13.8		7						
17.50	14.0		7						
17.75	14.2	1349	7						
18.00	14.4		7						
18.25	14.6		7						
18.50	14.8		7						
18.75	15.0		7						
19.00	15.2	1422	7						
19.25	15.4		6						
19.50	15.6		6						
19.75	15.8		6						
20.00	16.0		6						
20.25	16.2	1450	6						
20.50	16.4		6						
20.75	16.6		6						
21.00	16.8		6						
21.25	17.0		6						
21.50	17.2	1440	6						
21.75	17.4		5						
22.00	17.6		5						
22.25	17.8		5						
22.50	18.0		5						
22.75	18.2	1540	5						

CORING LOG FROM

BAKER HUGHES INTEQ

A DIVISION OF BAKER HUGHES CANADA INC.

700, 736 - 8 Avenue S.W.

Calgary, AB T2P 1H4

Phone: (403) 296-9700 / Fax (403) 296-9785

Date Feb 6/94 Service Representative M. Dixon

Company Paramount Contractor Phelps & E

Well Name/No. Paramount ETAL CAMERON 1-79-60-10-117-K

Field Hole Size (mm) 222

Diamond Bit Size (mm) 222 #02 Bit No. 0601738

Diamond Bit Type RC476 Core Barrel Size (mm) 171x103

Length (m) 22.49 No. C-15 Jar No. A 626 Lee

Core No. 2 Depth: From 1422.8 m To 1441 m

Total Metres Cored 18.2 Recovered

Hours 3 1/4 Formation Cored Sulphur Point

Description

Time Reaming To Bottom 1/2 hr

Mud Wt. (kg/m³) 1100 r/min.

Mud Flowrate (m³/min.) 1.1

Bit Condition: Before New % After %

5.i) WIRELINE LOGGING SUMMARY

<u>Run No.</u>	<u>Date</u>	<u>Log Type</u>	<u>Interval</u>	<u>Remarks</u>
1A	94-02-11	PHASOR-SFL-SP BHCS-GR-Cal	1640-395m 1629-395m	-Run in combo w/ BHCS-GR-C
1B	94-02-11	CNL-LDT-Pe-EDAC	1642-395m	-Dol,Ls,SS playbacks;High Resolution Dol & Ls
		ML-GR-Cal	1636-1300m	-Run in combo w/ CNL/LDT
		CVL	1642-395m	-Calculated from EDAC
1C	94-02-12	FMS	1643-1300m	

6.i) WELLSITE DRILL STEM TEST REPORT

DST #: 1

DATE: 94-02-07

WELLNAME:PARAMOUNT et al CAMERON I-74

LOCATION: I-74 60 10' 117 15'

INTERVAL: 1409.0 - 1441.0 m KB

FIELD/AREA: Cameron Hills

FORMATION: Sulphur Point

TYPE OF TEST: Conventional Bottom Hole COMPANY: McAllister

KB: 777.77m GL: 782.62m TD: 1441 m

HOLE SIZE - DRILLED: 222.2 mm

CASING - SIZE: 244.5 mm WT: 53.6 kg/m SHOE DEPTH: 396.0 m

MUD - TYPE: Gel Chem DEN: 1160 kg/m VIS: 64 WL: 7.5

FC: 1.0 mm pH: 9.0

HOLE CONDITION TIME: 0.75 hrs.

TEST TIMES -

STARTED IN HOLE: 02:20	94/02/07	ON BOTTOM: 05:40
PACKER SET: 08:00		PRE-FLOW STARTED: 08:07
INIT. SHUT-IN STARTED: 08:17		FINAL FLOW STARTED: 09:17
FIN. SHUT-IN STARTED: 10:47		PACKER PULLED LOOSE: 13:47
OUT OF HOLE: 22:30		TEST POSITIVE: - Yes

BLOW DESCRIPTIONS

TIME	BLOW DESCRIPTION OR FLAIR DESCRIPTIONS (WEAK/FAIR/GOOD/STRONG)	COMMENTS
PRE FLOW	Weak air blow increasing to strong air blow in 4 minutes. Gas to surface in 10 minutes.	
FINAL FLOW	Strong air blow throughout. Gas to surface immediately. To small to measure. 2 metre lazy surging flare.	Remained constant throughout.
FINAL SHUT IN	Flame continued for 15-20 minutes before dying out.	

CUSHION USED: - 160 Litres, CORBAN
 CHOKE - SURFACE: n/a BOTTOM: 19.05mm
 MUD LEVEL IN ANNULUS: Full throughout test
 WT. OF D.P. - BEFORE: 44000 dN AFTER: 45000 dN
 WT. ON PACKER: 15000 dN WT. PACKER PULLED LOOSE: 5000 dN

PRESSURE DATA -		RECORDER No: 0915					DEPTH: 1410.00 m		
CHART POINTS	IHP	IPFP	FPPF	ISIP	IFP	FFP	FSIP	FHP	
PRESSURE	15900	1182	1271	9486	1109	1618	9519	15821	
TIME (MIN)		10	60	90	180				

BHT: 50.0 deg. C. DEPTH: 1410.0 m TIME ON BOTTOM: 487 min

RECORDER & MISC. DATA

RECORDER No.	0284	8849	13192	0195	
CAPACITY	Electric	21374	23787	Electric	
CLOCK	1 min	24 hr	24 hr	1 min	
IN/OUT	IN	IN	OUT	OUT	

RECOVERY FLUID

410 metres : 160 Litres, CORBAN H2S inhibitor cushion
 410 metres Gasified oil flecked mud

SAMPLES

- 1 Sample chamber #102.
- 2 Gas samples were taken during Final Flow. Sample #7025 taken @ start was sweet. Sample #6150 taken @ end of flow period was sour.
- 9 Fluid samples were taken while reverse circulating the recovered fluid out of the drill pipe. One (1) sample was taken from top of recovery. Eight (8) samples were taken at top of tool. These points were determined by counting the number of strokes taken to reach the capacity of fluid determined to have been taken on. Pumped 6.5 m3 of drill fluid into drill pipe to equalize before dropping bar to shear pins in pump out sub. Capacity of drill pipe used in test was 9.0 m3, therefore took on 2.5 m3 of formation fluid.

COMPANY NAME: PARAMOUNT RES LTD DATE: 94/ 06/ 02
WELL NAME : PARAMOUNT ET AL CAMERON KB ELV 782.62 m T# 1721 DST # One
LOCATION : I-74 60 10/ 117 15/ GR ELV 777.77 m FORM: SULPHUR POINT
INTERVAL : 1409.0 TO 1441.0 TOTAL DEPTH 1441.0 m
TIME: PF 10; ISI 60; 2FL 90 ; 2SI 180 TYPE: Conventional
Bottom Hole

RECORDER DATA ALL MEASUREMENTS ARE 'SI'

REC. #	0284	8849	13192	0195	(Length)
RANGE	ELEC	21374	23787	ELEC	P.O. Sub .31
CLOCK	11 Min.	24 Hr.	24 Hr.	11 Min.	X.O. Sub .31
DEPTH	1396	1400	1410	1410	Inside Rec. 1.73
O/I	(In)	(In)	(Out)	(Out)	

REC #	0195	HOLE and PIPE DESCRIPTION	
IH	15900	Hole Size; 222 mm	Hole Cond; GOOD
PF	1182	Btm Choke; 19.05 mm	Packer O.D. 190 mm
PF	1271	D.Coll ID; 71 mm	B.H. Temp; 50 C
ISI	9486	D.Pipe ID; 97 mm	Mud Drop; NIL m
IF	1109	D.C. Leng; 136.13 m	Amt.Fill; NIL m
FF	1618	D.P. Leng; 1178.14 m	Tool Wt. ; 5000 daN
FSI	9519	Wt. Set ; 15000 daN	Wt Pulled; 5000 daN
FH	15821	Init. Wt.; 44000 daN	Final Wt ; 45000 daN

TIMES and MUD DESCRIPTION	TOTAL TOOL
T Started; 2:20 Hr	ABOVE INTV. 14.68
T Opened ; 8:07 Hr	
T Out; 22:30 Hr	
T On Btm.; 5:40 Hr	
T Pulled ; 13:47 Hr	
Mud type; GEL	DEPTH: 1409.0m
Viscosity; 64	
Weight; 1160	
Water loss; 7.5	

RECOVERY FLUID: Cushion: 160 LITRES, CORBAN	
Total 410 m of 136.13 m in D.C. & 273.87 m in D.P.	Stub .37
410 m of GASIFIED OIL FLECKED DRILLING MUD.	Perforation .91
- m of -	
- m of -	
- m of -	
API Gravity: -	Out.Rec. 1.95
Salinity: - ppm	
	X.O. Sub .31
	D.C. 27.63
	X.O. Sub .31

GAS RATES Measured with:			
TIME (Min)	ORFICE (mm)	PRESSURE (kPa)	RATE (Cu m/day)
1. -	-	-	-
2. -	-	-	-
3. -	-	-	-
4. -	-	-	-
5. -	T	S	T M
6. -	-	-	-
7. -	-	-	-
8. -	-	-	-
9. -	-	-	-

REMARKS: Samples to: END HYCAL Samplers # 102	TOTAL BELOW 31.98
Gas samples # 6150 # 7025 Fluid samples # 9	
Preflow: WAB TO SAB IN 4 MIN, GTS IN 10 MIN.	TOTAL TOOL: 46.66m

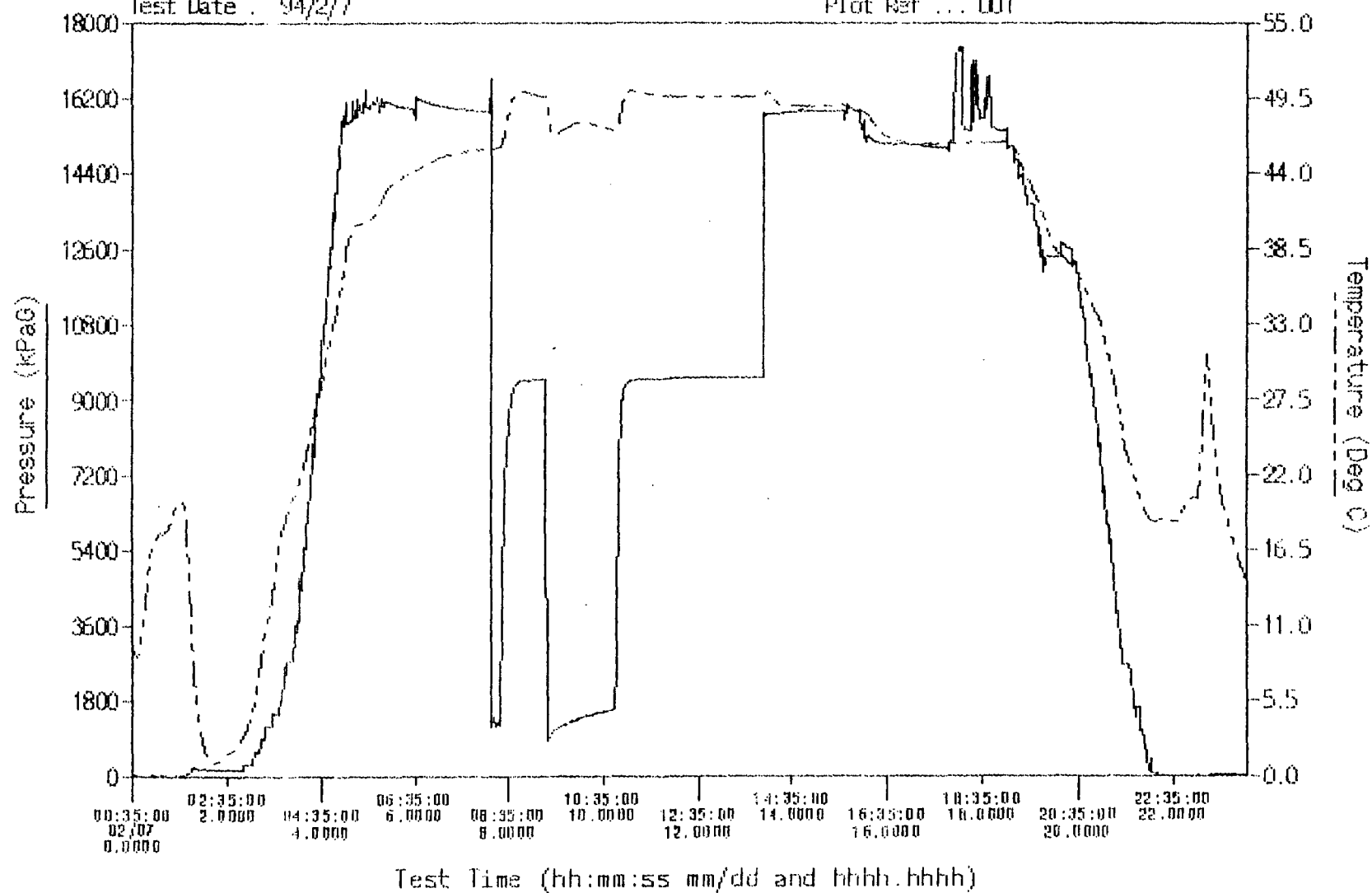
Second Flow: GTS IMMEDIATELY 2 METER LAZY FLAME. TSTM.	
	Cust R: GARY
	Tester: R. Cassidy
	(551-1870)
	Successful: Yes

00/01/01
00:46:16

Company PARAMOUNT RES LTD
Well PARAMOUNT ET AL CAMERON I- 74 60 10 117 15
Test Date . 94/2/7

EMP S/N 080-195
File Ref ... 17210
Plot Ref ... OUT

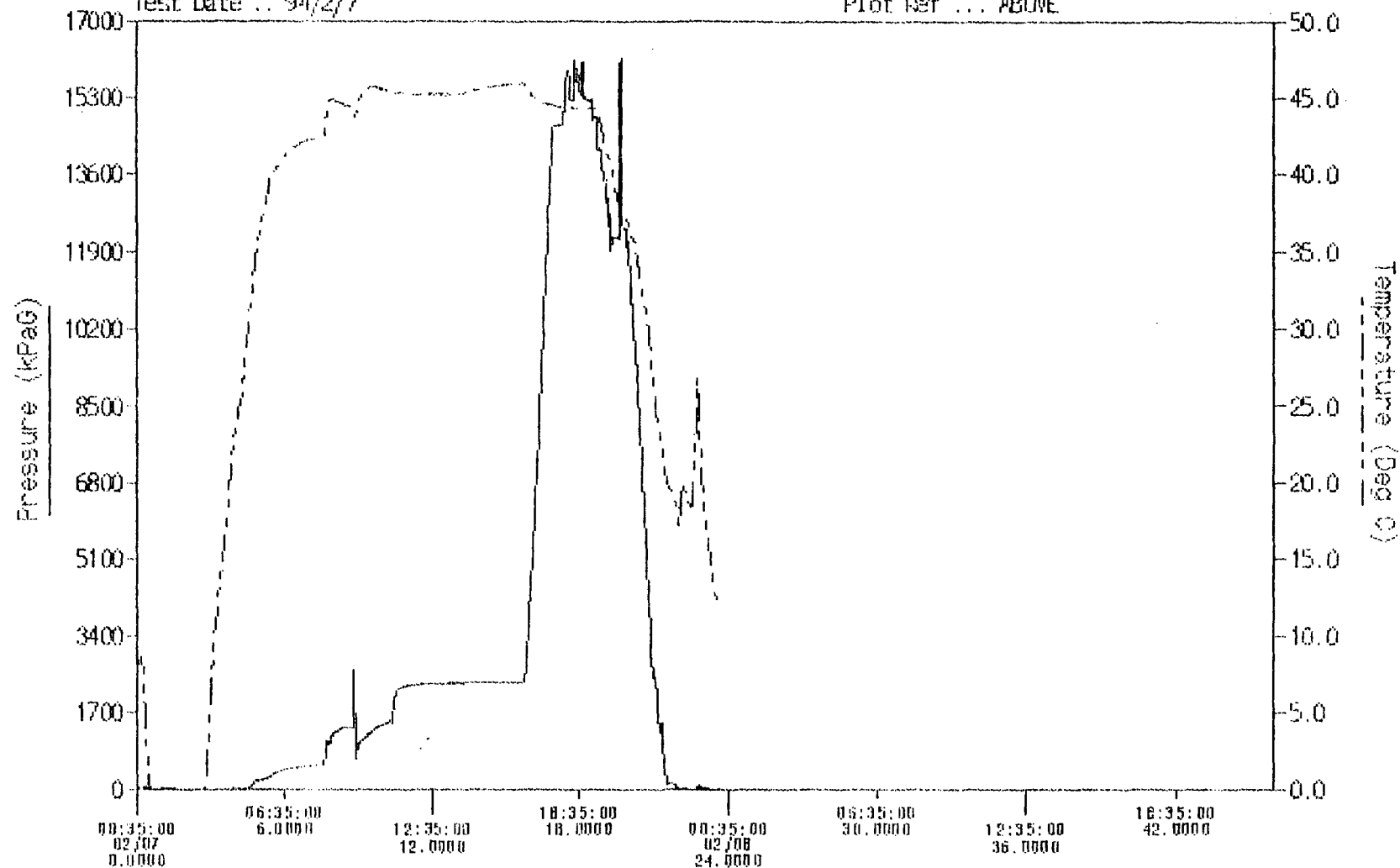
G2



00/01/01
00:30:26

Company PARAMOUNT RES LTD
Well PARAMOUNT ET AL CAMERON I 74 60 10 117 15
Test Date .. 94/2/7

EMP S/N 080-284
File Ref ... 1721A
Plot Ref ... ABOVE



7.

CHRONOLOGICAL DAILY DRILLING SUMMARY

DATE	DAY FROM SPUD	DEPTH @ 0001h	PROG	STATUS @ 0001h
94-01-27	0	0m	Om	Spud 311.2mm surface hole @ 2215hrs.
94-01-28	1	34	34	Drilling surface hole w/ Bit #1A
94-01-29	2	214	180	Drilling surface hole w/ Bit #2A
94-01-30	3	396	182	Attempting to circulate down bridged casing
94-01-31	4	396	0	Wait on cement & Clean mud tanks
94-02-01	5	396	0	Drill out float collar
94-02-02	6	790	394	Drilling 222.2mm main hole w/ Bit #4
94-02-03	7	1193	403	Drilling
94-02-04	8	1401	208	Strap check trip prior to core point
94-02-05	9	1410	9	Cutting Core #1
94-02-06	10	1423	13	Recover Core #1, 1407-1422.8m, Rec: 15.8m
94-02-07	11	1441	18	Making up DST #1 tool, 1409-1441m
94-02-08	12	1441	0	Rigging out DST #1 tool & RIH w/ NB #7
94-02-09	13	1483	42	Drilling 222.2mm main hole w/ Bit #7
94-02-10	14	1564	81	Drilling
94-02-11	15	1623	59	Drilling w/ NB #8
94-02-12	16	1644	21	Logging w/ Schlumberger
94-02-13	17	1644	0	Running 177.8mm production casing
94-02-14	18	1644	0	Cementing casing w/ Nowsco
94-02-14	18			Rig Release 94-02-14 @ 1200 hrs.