

# **Geological Report**

**Of**

**Jason Galbraith  
Paramount Resources Ltd.  
(Company)**

**MOH & ASSOCIATES OILFIELD CONSULTANTS LTD.**

**CALGARY, ALBERTA**

N E B COPY

NATIONAL ENERGY BOARD  
Exploration and Production

APR 26 2010

# Geological Report

Of

**PARA ET AL CAMERON M-74**  
Unit M Section 74 Grid 60' 10" 117' 15"

For



**PARAMOUNT RSOURCES LTD.**

February 2010

**Report For:**

**LLEW WILLIAMS/JASON GALBRAITH**  
**Paramount Resources Ltd.**  
**Calgary, AB.**

Reported By:



**MASHHOOD CHAUDHRY**  
**Moh & Associates Oilfield**  
**Consultants Ltd.**  
**Calgary, AB.**

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## WELL ABSTRACT

The well Para et al Cameron M-74 is located in Unit M Section 74 Grid: 60° 10' N 117° 15' W and

has surface coordinates of Lat: 60° 03' 58.8'' N & Long: 117° 29' 56.8'' W in NWT Mainland. The Field it is in is Cameron Hills and Pool is Sulphur point. It is a development well.

Drilling contractor engaged to drill this well was Precision Drilling Rig # 436.

The well was spudded on January 17, 2010 @ 0730 hrs. Surface hole of 311mm size was drilled to 378m and 219.1mm surface casing run to 377m.

During drilling of 200mm main hole lost circulation was encountered to variable extents from 557-724 with 100% lost circulation around 670 & 680m depth. Continued drilling to 1089m while trying to control lost circulation problem. Used directional services of Departure Energy Services Inc. from 1026m to 1089m to correct high deviation of 8°.

At 1089m pills of Frack Attack product were spotted and reamed twice between 731 to 500m depth to prevent lost circulation. But it did not work. Then Cement plugs were run and drilled twice over the same lost circulation interval. It did not stop lost circulation either.

The well then was plugged back with cement from 731-535m and side tracked from KOP of 467m. It was drilled to a total depth of 1473m and logs run. A second run of logs was run after clean out trip due to 23meters fill on bottom. Production casing of 139.7mm was run.



## FORMATION EVALUATION

Primary target in this well was Sulphur Point Dolomite for the production of oil and secondarily evaluate Slave Point for possible gas production. Samples were also collected and examined from Twin Falls formation for any hydrocarbons present.

**Twin Falls** in this well is primarily Limestone with interbeds of Shales.

Limestone is buff, grey, micritic, trace-minor very fine-grained, dense, part argillaceous, with up to a maximum of 3-6% intergranular and pin point porosity. It does not have any visible hydrocarbon shows in samples.

### SLAVE POINT FORMATION

*Middle or Upper Devonian*

*397.5-385.3 Million Years*

Slave point in this well was picked in samples at 1348.5m. Electrical logs indicate its top at 1347m (-565m). Slave Point is a 41m thick limestone. It is brown to buff, mudstone-wackestone, micritic, lumpy, dense, cryptocrystalline-very fine crystalline. It is slightly argillaceous and bituminous and contains pyrite nodules at places. Slave point becomes slightly dolomitic and anhydritic towards lower part. Slave point is mostly tight with 0-3% porosity. It has 6-9% intercrystalline, pin point and earthy porosity from 1371-1375m. Slave point has hydrocarbon shows and gives milky white good-fair streaming cut with petroliferous odour. A formation gas show of 275 units against a background of 70 units was registered by gas detector in above mentioned 6-9% porosity zone. Induction log shows 35-60 ohms deep induction in this interval. The Slave Point formation in this well does not seem to have commercially produceable hydrocarbons.



*Slave Point Limestone in M-74*

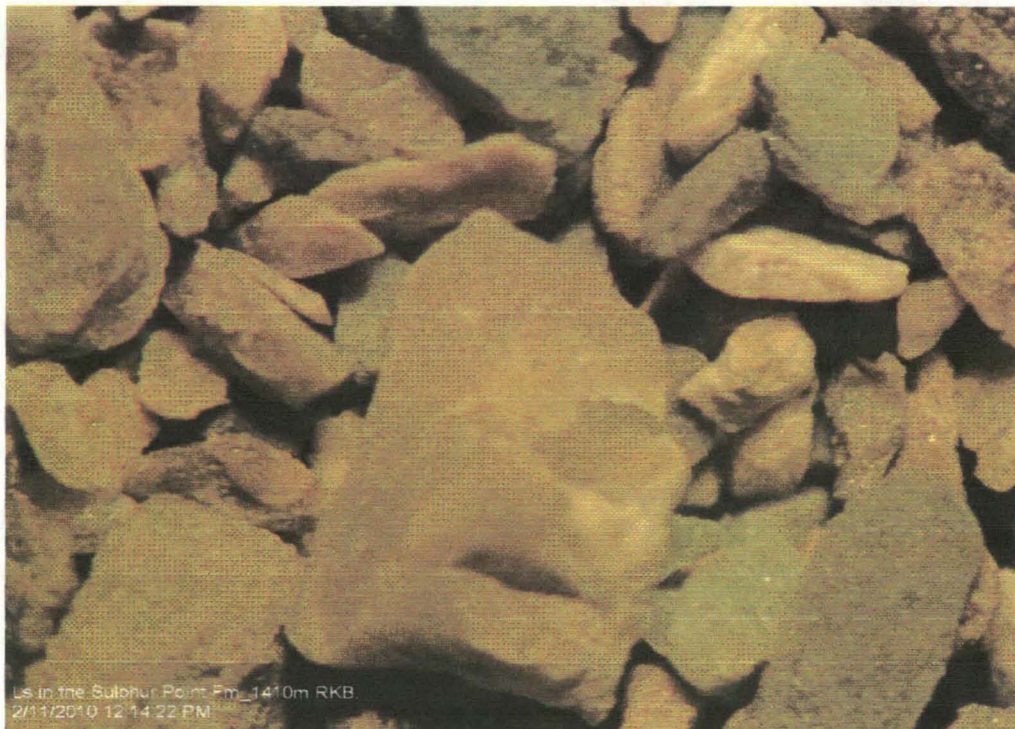
## SULPHUR POINT FORMATION

*Middle Devonian*

*397.5 Million Years*

**Sulphur Point Limestone** is 9.5m thick from 1401.4-1427.5m. It is brown-buff, mudstone-wackestone, micritic, cryptocrystalline-very fine crystalline, argillaceous and slightly dolomitic. It also has some hydrocarbon shows. It is tight but has 9% porosity from 1407-1408m. It shows 35-50 ohms deep & medium induction over this interval. It had 260 units of gas show against a background of 50 units.

Sulphur Point Limestone does not seem to be very promising in this well.



*Sulphur Point Limestone in M-74.*



**Sulphur Point Dolomite** is 15.5m thick from 1412.0 – 1427.5m. It is brown-dark brown, grainstone, very fine-fine crystalline, with common free dolomite crystals and minor bitumin partings. It has vuggy, pin point and intercrystalline porosity streaks in the range of 5-20% from 1414-1424m. Sulphur point dolomite has scattered bright yellow fluorescence and good yellow white fast streaming cut. On induction log it shows 15-40 ohms deep induction in porous intervals. Over 400 units of gas shows over a back ground of 50 units were recorded by gas detector. Sulphur Point Dolomite has a good potential of commercial oil production.



*Sulphur Pt. Dolomite vuggy porosity in M-74*

**SUMMARY OF WELL DATA**

OPERATOR	Paramount Resources Ltd.
WELL NAME	Para et al Cameron M-74
LOCATION	Unit M    Section 74 Grid: 60° 10' N 117° 15' W
COORDINATES ( SURFACE)	Lat: 60° 03' 58.8'' N Long: 117° 29' 56.8'' W
COORDINATES ( BOTTOM HOLE)	Same as surface.
UWI	300M746010117150
FIELD / POOL	Cameron Hills / Sulphur Pt. "D"
PROVINCE/REGION	NWT Mainland
WELL LICENCE NUMBER	1221
WELL TYPE	Development
A.F.E. NUMBER	09N010005
GROUND ELEVATION	777.93m
K.B. ELEVATION	782.13m
DRILLING CONTRACTOER	Precision Drilling Rig # 436
SPUD DATE	January 17, 2010 @ 0730 Hrs.
COMPLETED DRILLING	February 10, 2010@ 2200 Hrs.
TOTAL DEPTH DRILLER	1473m.
TOTAL DEPTH LOGGERS	1459m
SURFACE HOLE SIZE	311mm From 00.00 – 378m.

**MAIN HOLE SIZE**

200 mm From 378 - 1473m

**SAMPLES**

Paramount: 790m-1050m

NEB: 1300m – TD.

**PROBLEMS**

Lost Circulation in Wabamun Formation  
557m to 724m. Drilled blind 576-731m.  
Ran and drilled cement plugs to control lost  
circulation. Hole is side tracked from  
467m.

**CASING RECORD**

Size OD (mm)	Weight Kg/m	Make	Type	Grade	Shoe at (m)	Cement used	No Of Joints	Remarks
219.1	35.7	LKSIDE	ST&C	J-55	377	33m3	28	New
139.7	20.8	Alberta Tubulars	ST&C	J-55	1473	Lead 26T + Tail 0 9 T	117	New

**LOG RECORD**

Company	Log Type	Interval ( m )
Weatherford	1. Spectral Pe Density, Compensated Neutron, Gamma Ray	1458.4 - 0.0
	2. Simultaneous Triple Induction SFL Log	1448.4 – 376.8
	3. Monopole-Dipole Acoustic Log	1436.1 – 376.8
	4. Micro-Resistivity Log	1447.8 - 1300

**STATUS: POTENTIAL SULPHUR POINT DOLOMITE OIL WELL.**

## SUMMARY OF GEOLOGICAL MARKERS, TESTS &amp; CORES

## GEOLOGICAL MARKERS

K.B: 782.13m

FORMATION MARKER	SAMPLE TOP		LOGS TOP		
	TMD (m)	TVD (m)	TMD (m)	TVD(m)	Subsea (m)
WABAMUN				556	226.0
JEAN MARIE				716.5	65.5
FORT SIMPSON				722.5	59.5
TWIN FALLS	834.0	832.6		833.5	-51.5
HAY RIVER	998.0	995.6		993.0	-211.0
BEAVERHILL LAKE		1324.0		1324.5	-542.5
SLAVE POINT		1348.5		1347.0	-565.0
F 4		1389.5		1388	-606.0
WATT MOUNTAIN		1396.0		1395.5	-613.5
SULPHUR POINT LST		1405.5		1401.5	-619.5
SULPHUR POINT DOL.		1413.0		1412.0	-630.0
MUSKEG		1429.5		1427.5	-645.5
TOTAL DEPTH DRILLER		1473.0			-691.0
TOTAL DEPTH LOGGERS				1459.0	-677.0

## CORES

DATE:

Formation	Interval (m )	Recovered.	Recovery %	Coring Equip.

## SIDE WALL CORING SUMMARY

CORING DATE:

Plug #	Time	Depth(m)	Recovery	Plug #	Time	Depth(m)	Recovery

### DEVIATION SURVEYS

NOTE: Well was plugged and side tracked from 467m. See next page for Side track surveys.

DEPTH (m)	INCL. DEGREES	DEPTH (m)	INCL. DEGREES	DEPTH (m)	INCL. DEGREES	INSTRUMENT REMARKS
11	0.5	963	8.0			Teledrift
19	0.5	991	8.0			
30	0.5					
56	0.5					
91	0.5					
122	0.25					
147	1.0					
174	1.0					
203	0.5					
231	0.5					
260	2.0					
298	2.0					
327	1.5					
346	2.0					
388	1.5					
435	2.0					
482	3.0					
628	3.0					
703	3.5					
806	3.0					
900	3.0					
943	8.0					

NOTE: Also see side track directional surveys from 467-576m.

PARAMOUNT RESOURCES LTD.



**DIRECTIONAL SURVEYS**  
 (From 1026-1089m)  
**DEPARTURE ENERGY SERVICES INC.**  
**WINSERVE SURVEY CALCULATIONS**  
 Minimum Curvature Method  
 Vertical Section Plane .00  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth Meters	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S Meters	E-W Meters	Dogleg Severity Deg/30	CLOSURE Distance Meters	CLOSURE Direction Deg
11.00	.50	34.10	11.00	.04	.03	1.36	.05	34.10
91.00	.50	34.10	91.00	.62	.42	.00	.75	34.10
122.00	.25	34.10	122.00	.79	.53	.24	.95	34.10
147.00	1.00	34.10	146.99	1.01	.68	.90	1.22	34.10
175.00	1.00	34.10	174.99	1.42	.96	.00	1.71	34.10
203.00	.50	34.10	202.99	1.72	1.16	.54	2.08	34.10
231.00	.50	34.10	230.99	1.92	1.30	.00	2.32	34.10
260.00	2.00	34.10	259.98	2.45	1.66	1.55	2.95	34.10
298.00	2.00	34.10	297.96	3.54	2.40	.00	4.28	34.10
327.00	1.50	34.10	326.94	4.28	2.90	.52	5.17	34.10
346.00	2.00	34.10	345.93	4.76	3.22	.79	5.75	34.10
389.60	1.60	34.10	389.51	5.89	3.99	.28	7.12	34.10
503.77	2.80	40.40	503.60	9.34	6.69	.32	11.49	35.63
618.09	3.50	41.80	617.74	14.06	10.83	.18	17.75	37.59
732.17	6.30	39.40	731.39	21.50	17.12	.74	27.48	38.53
846.11	6.00	41.10	844.68	30.82	25.00	.09	39.68	39.06
987.37	7.60	40.80	984.94	43.45	35.96	.34	56.40	39.61
1009.00	6.50	41.10	1006.41	45.46	37.70	1.53	59.06	39.67
1026.41	5.50	41.80	1023.72	46.82	38.91	1.73	60.88	39.72
1035.93	4.20	43.30	1033.21	47.42	39.45	4.12	61.68	39.76
1045.41	2.60	48.90	1042.67	47.81	39.85	5.17	62.24	39.81
1054.90	1.90	65.80	1052.15	48.02	40.15	3.03	62.59	39.91
1064.39	1.80	79.50	1061.64	48.11	40.44	1.43	62.85	40.05

**SIDE TRACK DIRECTIONAL SURVEYS**  
**DEPARTURE ENERGY SERVICES INC.**  
**WINSERVE SURVEY CALCULATIONS**  
 Minimum Curvature Method  
 Vertical Section Plane .00  
 Vertical Section Referenced to Wellhead  
 Rectangular Coordinates Referenced to Wellhead

Measured Depth Meters	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S Meters	E-W Meters	Dogleg Severity Deg/30	CLOSURE Distance Meters	CLOSURE Direction Deg
11.00	.50	34.10	11.00	.04	.03	1.36	.05	34.10
91.00	.50	34.10	91.00	.62	.42	.00	.75	34.10
122.00	.25	34.10	122.00	.79	.53	.24	.95	34.10
147.00	1.00	34.10	146.99	1.01	.68	.90	1.22	34.10
175.00	1.00	34.10	174.99	1.42	.96	.00	1.71	34.10
203.00	.50	34.10	202.99	1.72	1.16	.54	2.08	34.10
231.00	.50	34.10	230.99	1.92	1.30	.00	2.32	34.10
260.00	2.00	34.10	259.98	2.45	1.66	1.55	2.95	34.10
298.00	2.00	34.10	297.96	3.54	2.40	.00	4.28	34.10
327.00	1.50	34.10	326.94	4.28	2.90	.52	5.17	34.10
346.00	2.00	34.10	345.93	4.76	3.22	.79	5.75	34.10
389.60	1.60	34.10	389.51	5.89	3.99	.28	7.12	34.10
446.72	2.30	33.80	446.60	7.50	5.07	.37	9.06	34.06
456.24	2.50	34.50	456.11	7.83	5.30	.64	9.46	34.07
465.75	1.80	40.40	465.61	8.12	5.51	2.31	9.81	34.17
475.10	1.10	270.00	474.96	8.23	5.52	8.50	9.91	33.83
484.63	2.30	245.40	484.49	8.15	5.25	4.34	9.70	32.79
494.16	3.00	216.60	494.01	7.87	4.93	4.66	9.29	32.06
503.68	3.30	215.50	503.51	7.45	4.62	.96	8.77	31.82
513.17	3.50	212.70	512.99	6.98	4.31	.82	8.20	31.67
522.65	3.70	213.40	522.45	6.48	3.98	.65	7.61	31.56
532.16	3.70	214.80	531.94	5.98	3.64	.28	7.00	31.33
541.64	4.60	222.90	541.39	5.45	3.20	3.39	6.32	30.48
551.13	4.80	223.30	550.85	4.88	2.67	.64	5.56	28.72
560.64	4.80	223.30	560.33	4.30	2.13	.00	4.80	26.33
576.00	3.80	220.00	575.64	3.44	1.36	2.01	3.70	21.56
Extrapolation								
576.00	3.80	220.00	575.64	3.44	1.36	2.01	3.70	21.56

**DAILY DRILLING SUMMARY**

<b>DATE</b>	<b>DEPTH (m)</b>	<b>OPERATIONS SUMMARY</b>
Jan. 17, 2010.	135	Left Calgary. Stayed in High Level. Well Spudded @ 0730 HRS. Drilled 311mm surface hole from 00.00 – 135m.
Jan. 18, 2010.	339	Left High Level. Arrived on location. Drilled 311mm surface hole from 135 – 339m.
Jan. 19, 2010.	378	Drilled 311mm surface hole from 367-378m. Circulate & Condition mud. Ran surface casing. Circulate and wait on cementers. Safety meeting with cementers.
Jan. 20, 2010.	378	Rig up Gas detector. Cement surface casing. WOC. Cut Casing and weld on Casing bowl. Nipple up BOP, S. Install new lines to manifold, manifold to flare tank and manifold to mud tanks. Levelled rig. Pick up Kelly and install upper Kelly cock. Started pressure testing.
Jan. 21, 2010.	532	Gas detection. Complete Pressure testing, RIH. Drill cement, float & shoe. Drilled 200mm main hole from 378-532m
Jan. 22, 2010.	926	Geological supervision and gas detection. Drilled 200mm main hole from 532-926m. Encountered fluid losses @ 557m Sporadic, 650m 25%, 660m 50%, 670m 100%, 680m 100%, 688m 25% started healing/ coming back, 700m 50-75% and @ 724m no to nominal loses.
Jan. 23, 2010.	1026	Geological supervision and gas detection. Drilled 200mm main hole from 926-1026m. Deviation 8 degrees at 943m. Reduced WOB to zero to control deviation. Kept drilling @ rop of 5m/hour while waiting for directional tools to correct the deviation. Started circulating and condition hole to POOH for directional tools.
Jan. 24, 2010.	1027	Circulate and condition hole while waiting for directional tools at 1026m depth. Started POOH. Lost circulation at 600m while coming out. Controlled lost circulation and POOH. Make up directional tools and ran in the hole while taking directional surveys. Directionally drilled 200mm hole 1026-1027m. Lost circulation at 1027. Conditioned mud and controlled lost

		circulation.
Jan. 25, 2010.	1089	Drilled directionally 200mm main hole from 1027-1089m. Lost circulation. Circulate & pumped lost circulation material to control lost circulation. POOH. Laid down directional tools. Run back in to 702m. Mix Frac Attack & Barite pill. Started pumping Frac attack pills from about 700m upward.
Jan. 26, 2010.	1089	Pumped Frac attack pills from 700m upward to about 500m. POOH. RIH with directional tools. Reamed Frack attack from 490m to 623. Lost circulation at this depth. Started POOH to pump another Frack Attack pill in this zone.
Jan. 27, 2010.	1089	Completed POOH. Laid down directional tools. RIH. Hit bridge @ 477m. Reamed and circulated bottoms up to 600. Pumped frac attack @ 538. Circulate. Applied 1300kpa pressure on frac attack. POOH to 189m. RIH. Started reaming and washing the hole from 550m. Lost circulation @ 630m. Started POOH to make new BHA. Worked tight hole 630-539m while coming out.
Jan. 28, 2010.	1089	POOH. Made up different BHA. RIH. Ream and clean the hole 530-720m. POOH partially. Break circulation. Condition mud and circulate. Rig safety inspection and service. Complete POOH. RIH. Cleaned hole for 3 singles to 712 and ran first cement plug. POOH inside the casing to circulate hole clean. Top of first cement plug @ 576m.
Jan. 29, 2010.	1089	POOH in surface casing. Circulated bottoms up after running first cement plug. First cement plug 738-576m. RIH. Circulate hole clean. Ran second cement plug. Circulate. W.O.C. RIH with directional tools. Drilled cement plugs from 526-681m.
Jan. 30, 2010.	1089	Finished drilling cement plugs to 738m depth. Circulate bottoms up. Start reaming open hole. Rig repair & safety meeting. Reamed and cleaned open hole to 938m. Lost circulation @ 938m. Circulate hole clean. POOH. Laid down directional tools. Start running in the hole open ended while doing flow checks to run cement plugs again.
Jan. 31, 2010.	1089	Finished running in to 732m while reaming bridges. Ran first cement plug from 732m. Pull up. WOC. Circulate and clean the hole. Ran second cement plug. WOC. Circulate. POOH. Slip and cut. RIH with directional tools. Broke circulation. Drilled cement to 403-481m.

Feb. 01, 2010	1089	Drilled cement plugs from 481 to 672m. Started losing fluid again from around 500m. Circulate. POOH. Start RIH to run cement plugs and sidetrack the well after plugging back to about 672m.
Feb. 02, 2010	Side Track from 467	RIH to 672m. Ran two cement plugs from 664-467m with WOC for each plug. Performed pressure tests. Rig repairs. Changed chains in draw works.
Feb. 03, 2010	576	Made up directional tools. RIH. Repair pump # 2. Ream & clean 402-467m. Top of cement 467m. Started side track from 467m. Drilled 200mm side track hole from 467m to 576m while taking directional surveys. Lost circulation. POOH. Laid down directional tools. RIH. Reamed from 456 to 576m.
Feb. 04, 2010	731	Drilled 200mm side tracked main hole from 576-681. Wiper trip to 375m. RIH while reaming from 411-590m. Drilled from 681-731m. Nominal returns from 585-609m. No returns & drilled blind from 609-731m.
Feb. 05, 2010	731	POOH to run cement plugs. Reamed and cleaned the hole from 430-453m while coming out. Pick up 73mm fibre glass tubing string. RIH. Washed from 463-602. Unable to get tubing string to bottom. POOH. Laid down fibre glass tubing string. Mud up with polymer mud system. RIH with bit assembly to 624m while reaming and circulating. Mud up with polymer to ream and clean the hole.
Feb. 06, 2010	731	Reamed & cleaned hole 624-731. Circulated bottoms up. Deviation Survey @ 720m. POOH. Rig Service. RIH to bottom with fibre glass tubing. Circulate hole clean. Ran cement plug # 1 from 731-604m. POOH to 500m. WOC. Circulate. RIH. Tagged plug # 1 @ 604m. Condition mud & circulate. Ran cement plug # 2. Pull out of cement. WOC. Circulate.
Feb. 07, 2010	742	WOC. POOH. Laid down fibre glass tubing. Rig service. Slip & cut. RIH with bit assembly. Drilled cement plugs from 535-731m. Drilled 200mm side track from 731-742m. Circulated bottoms up. Deviation survey.
Feb. 08, 2010	951	Drilled 200mm side track from 742-951m while taking deviation surveys. Worked on stuck pipe. Circulated hole clean and condition mud. Start gradual mud up at 900m.
Feb. 09, 2010	1254	Drilled 200mm side track/main hole from 951 -1254 m. Mud up

@ 1000m with polymer.

Feb. 10, 2010	1473	Drilled 200mm main hole from 1254-1473m. TD. Circulated and conditioned mud. Started POOH for wiper trip to surface casing.
Feb. 11, 2010	1473	Completed wiper trip to casing shoe. RIH. Washed hole from 1434-1473m. Conditioned mud and circulated. POOH while strapping pipe. Rigged in and ran in loggers. Loggers tagged bottom @ 1450m. Completed first run of logs. POOH with Logging tools.
Feb. 12, 2010	1473	Laid down logging tools. RIH. Reamed from 1431-1473m. Circulated and conditioned mud. POOH. Ran second run of Logs. Started RIH for clean out trip to run production casing.
Feb. 13, 2010	1473	Finished RIH. Reamed from 1431-1436 & 1451m to 1473m. Circulated and conditioned mud. Ran, circulated & cement production casing. Rig out gas detector.
Feb. 14, 2010	1473	Wait on cement. Rig down BOP. Installed Christmas tree. Rig released.

**PARA ET AL CAMERON M-74**  
UNIT M SECTION 74 GRID 60' 10" 117' 15"

**SAMPLE RECORD**

KB: K.B: 782.13m

**NOTE:** *The well was drilled to MD 1089m TVD 1086.6m and had to be plugged due to lost circulation problems and side tracked from 467m. The samples collected up to MD 1050m TVD 1047.6m are from plugged part of the well.*

**FORMATION TOPS MARKED ARE AS PER SAMPLE & ROP**

675-680 LIMESTONE 100% buff, off white, micritic to traces very fine grained, rare dolomitic, estimated 3% intergranular porosity, no visible shows.

680-685 LIMESTONE 100% buff, off white, micritic to traces very finegrained, rare dolomitic, estimated 3% intergranular porosity, no visible shows.

685-690 LIMESTONE 100% buff, off white, micritic to traces very fine grained, part argillaceous, rare dolomitic, estimated up to 3% intergranular porosity, no visible shows.

690-695 LIMESTONE 90% buff, microcrystalline to traces very fine crystalline, part argillaceous, estimated 3% intergranular porosity, no visible shows.  
SHALE 10% grey, greenish grey, subfissile, medium hard.

695-700 LIMESTONE 90% buff, grey, micritic, argillaceous, estimated 3% intergranular porosity, no visible shows.  
SHALE 10% grey, greenish grey, subfissile, medium hard.

700-705 NO SAMPLE: Lost Circulation but gained again.

705-710 LIMESTONE 100% buff, micritic to traces very finegrained, trace pyrite, rare dolomitic, estimated 3% intergranular porosity, no visible shows.

710-715 LIMESTONE 100% buff, grey, microcrystalline, traces carbonaceous, traces argillaceous, estimated 3% intergranular porosity, no visible shows.

TOP JEAN MARIE MD 718m TVD 717.2m (64.9m SS)

715-720 LIMESTONE 100% buff, grey, micritic, traces carbonaceous, estimated 3% intergranular porosity, no visible shows.

## TOP FORT SIMPSON MD 724m 723.2m (58.9m SS)

720-725 LIMESTONE 90% buff, grey, micritic, traces carbonaceous, trace pyrite, estimated 3% intergranular porosity, no visible shows.

SHALE 10% greenish grey, grey, subfissile, medium hard.

725-730 LIMESTONE 90% buff, grey, microcrystalline, traces carbonaceous, trace pyrite, estimated 3% intergranular porosity, no visible shows.

SHALE 10% greenish grey, grey, subfissile, medium hard.

730-735 LIMESTONE 90% buff, grey, micritic, traces carbonaceous, estimated 3% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, subfissile, medium hard.

790-800 SHALE 90% grey, greenish grey, brown fissile-subfissile, part carbonaceous, medium hard.

800-810 SHALE 80% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.  
LIMESTONE 20% grey, micritic, trace very fine grained, part argillaceous, estimated 3% intergranular porosity, no visible shows.

810-815 LIMESTONE 60% grey, micritic, trace very fine grained, part argillaceous, estimated up to 3% intergranular porosity, no visible shows.

SHALE 40% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

815-820 SHALE 70% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.  
LIMESTONE 30% grey, micritic, trace very fine grained, part argillaceous, estimated 3% intergranular porosity, no visible shows.

820-825 SHALE 100% grey, greenish grey, fissile-subfissile, part splintery, part carbonaceous, medium hard.

LIMESTONE MINOR grey, micritic, trace very fine crystalline, part argillaceous, estimated 3% intergranular porosity, no visible shows.

825-830 SHALE 60% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 40% grey, micritic, minor very fine crystalline, part slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

## TOP TWIN FALLS MD 834m TVD 832.6 (-50.5m SS)

830-835 SHALE 70% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 30% grey, micritic, minor very fine crystalline, part slightly argillaceous, occasional brown dolomite, estimated 3-6% intergranular porosity, no visible shows.

835-840 SHALE 60% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.



LIMESTONE 40% grey, microcrystalline-cryptocrystalline, trace very fine crystalline, part slightly argillaceous, estimated 3-6% intergranular porosity, no visible shows.

840-845 LIMESTONE 80% buff, grey, micritic, trace very fine-fine crystalline, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 20% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

845-850 LIMESTONE 90% buff, grey, micritic, dense, estimated 3% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

850-855 LIMESTONE 90% buff, grey, micritic, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

855-860 LIMESTONE 90% buff, grey, micritic, dense, trace recrystallization, estimated 3% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

860-865 LIMESTONE 90% buff, grey, micritic, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

865-870 LIMESTONE 95% buff, grey, micritic, trace very fine grained, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 5% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

870-875 LIMESTONE 100% buff, grey, micritic, trace very fine grained, dense, estimated 3% intergranular porosity, no visible shows.

SHALE MINOR grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

875-880 LIMESTONE 80% buff, grey, micritic, trace very fine grained, dense, estimated 3% intergranular porosity, no visible shows.

SHALE 20% grey, greenish grey, fissile-subfissile, medium hard.

880-885 LIMESTONE 90% buff, grey, micritic, traces very fine grained, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, medium hard.

885-890 LIMESTONE 95% buff, grey, micritic, traces very fine grained, dense, trace dolomite, estimated 3-6% intergranular porosity, no visible shows.

SHALE 05% grey, greenish grey, fissile-subfissile, medium hard.

890-895 LIMESTONE 70% buff, grey, micritic, trace very fine grained, dense, trace pyrite, estimated 3-6% intergranular porosity, no visible shows.

SHALE 30% grey, greenish grey, fissile-subfissile, medium hard.

895-900 LIMESTONE 80% buff, grey, micritic, traces very fine grained, dense, estimated 3-6% intergranular porosity, no visible shows.

SHALE 80% grey, greenish grey, fissile-subfissile, medium hard.

900-905 LIMESTONE 90% buff, grey, micritic, traces very fine grained, dense, part argillaceous, estimated 3-6% intergranular porosity, no visible shows.

SHALE 80% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

905-910 LIMESTONE 80% buff, grey, micritic, traces very fine grained, dense, part argillaceous, estimated 3% intergranular porosity, no visible shows.

SHALE 80% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

910-915 LIMESTONE 90% buff, grey, micritic, traces very fine grained, dense, part argillaceous, estimated 3% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

915-920 LIMESTONE 80% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

SHALE 20% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

920-925 SHALE 60% grey, greenish grey, fissile-subfissile, part carbonaceous, trace pyrite, medium hard.

LIMESTONE 40% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

925-930 SHALE 70% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 30% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

930-935 SHALE 80% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 20% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

935-945 SHALE 95% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 05% grey, buff, micritic, trace very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

945-950 SHALE 60% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

LIMESTONE 40% grey, buff, micritic, trace very fine grained, dense, slightly argillaceous, trace disseminated pyrite, estimated 3% intergranular porosity, no visible shows.

950-955 LIMESTONE 90% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous, estimated 3% intergranular porosity, no visible shows.

SHALE 10% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

955-960 SHALE 70% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.  
LIMESTONE 30% buff, grey, micritic, traces very fine grained, dense, slightly argillaceous,  
estimated 3% intergranular porosity, no visible shows.

960-965 SHALE 70% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.  
LIMESTONE 30% buff, grey, micritic, traces very fine grained, part dense, slightly argillaceous,  
estimated 3% intergranular porosity, no visible shows.

965-970 SHALE 60% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.  
LIMESTONE 40% buff, grey, micritic, traces very fine grained, part dense, slightly argillaceous,  
estimated 3% intergranular porosity, no visible shows.

970-975 LIMESTONE 80% buff, grey, micritic, traces very fine grained, part dense, slightly  
argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 20% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

975-980 LIMESTONE 80% buff, grey, micritic, traces very fine grained, part dense, slightly  
argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 20% grey, greenish grey, fissile-subfissile, part carbonaceous, medium hard.

980-985 LIMESTONE 90% grey, buff, micritic, traces very fine grained, part dense, slightly  
argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 10% grey, fissile-subfissile, part carbonaceous, part calcareous, medium hard.

985-990 LIMESTONE 20% grey, buff, micritic, traces very fine grained, part dense,  
argillaceous, part grading to marlstone, estimated 3% pin point & intergranular porosity, no visible  
shows.  
SHALE 80% grey, fissile-subfissile, micaceous, calcareous, medium hard.

990-995 LIMESTONE 90% grey, buff, micritic, traces very fine grained, part dense,  
argillaceous, part grading to marlstone, estimated 3% pin point & intergranular porosity, no visible  
shows.  
SHALE 10% grey, fissile-subfissile, micaceous, calcareous, medium hard.

TOP HAY RIVER MD 998m TVD 995.6m (-213.5m SS)

995-1000 LIMESTONE 60% grey, buff, micritic, traces very fine grained, part dense,  
argillaceous, part grading to marlstone, estimated 3% pin point & intergranular porosity, no visible  
shows.  
SHALE 40% grey, black, fissile-subfissile, micaceous, part carbonaceous, part calcareous,  
medium hard.

1000-1005 LIMESTONE 40% grey, buff, micritic, traces very fine grained, part dense, part  
argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 60% grey, black, fissile-subfissile, micaceous, part calcareous, medium hard.

1005-1010 LIMESTONE 80% grey, buff, micritic-minor very fine grained, part dense, part argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 20% grey, black, fissile-subfissile, part calcareous, medium hard.

1010-1015 LIMESTONE 80% grey, buff, micritic-minor very fine grained, part dense, part argillaceous, trace dolomite, trace pyrite, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 20% grey, black, fissile-subfissile, part calcareous, medium hard. Poor Samples.

1015-1020 LIMESTONE 85% grey, buff, micritic-minor very fine grained, part dense, part argillaceous, trace dolomite, estimated 3% pin point & intergranular porosity, no visible shows.  
SHALE 15% grey, black, fissile-subfissile, part calcareous, medium hard.

1020-1026 SHALE 70% grey, black, fissile-subfissile, part calcareous, medium hard.  
LIMESTONE 30% grey, buff, micritic-minor very fine grained, part argillaceous, trace dolomite, estimated 3% pin point & intergranular porosity, no visible shows.

1026-1030 SHALE 90% grey, black, fissile-subfissile, trace pyrite, part calcareous, medium hard.  
LIMESTONE 10% grey, buff, micritic-part very fine grained, part argillaceous, trace dolomite, estimated 3% pin point & intergranular porosity, no visible shows.

1030-1035 SHALE 80% grey, black, fissile-subfissile, part calcareous, medium hard.  
LIMESTONE 20% grey, buff, micritic-part very fine grained, part argillaceous, estimated 3% pin point & intergranular porosity, no visible shows.

1035-1040 SHALE 90% grey, black, fissile-subfissile, part calcareous, medium hard.  
LIMESTONE 10% grey, buff, micritic-part very fine grained, part argillaceous, minor slightly dolomitic, trace pyretic, estimated 3% pin point & intergranular porosity, no visible shows.

1040-1050 SHALE 95% grey, black, fissile-subfissile, part calcareous and siliceous, medium hard.  
LIMESTONE 05% grey, buff, micritic-part very fine grained, part argillaceous, minor slightly dolomitic, estimated 3% pin point & intergranular porosity, no visible shows.

#### NO SAMPLES WERE COLLECTED FROM 1050m to 1295m DEPTH

1295-1300 SHALE 100% dark brown black, minor grey, rough-waxy, medium hard-hard, micaceous, grey slightly silty, calcareous, trace pyrite, fissile-subfissile.

1300-1305 SHALE 100% dark brown, part grey, rough-waxy, medium hard-hard, micaceous, grey slightly silty, calcareous, trace argillaceous limestone, fissile-subfissile, dark brown gives cut.

1305-1310 SHALE 100% greenish grey, part dark brown, rough-waxy, medium hard-hard, micaceous, part slightly silty, calcareous, traces argillaceous limestone, fissile-subfissile, trace splintery, dark brown gives cut.

1310-1315 SHALE 100% greenish grey, part dark brown, rough-waxy, medium hard-hard, micaceous, part slightly silty, calcareous, fissile-subfissile, trace splintery, dark brown gives cut. MINOR LIMESTONE light grey, mudstone, micritic, lumpy, dense, microcrystalline, tight, 0-3% earthy porosity, no shows.

1315-1320 SHALE 100% greenish grey, part dark brown, rough-waxy, medium hard-hard, micaceous, part slightly silty, calcareous, fissile-subfissile, dark brown gives cut. TRACES LIMESTONE light grey, mudstone, micritic, lumpy, dense, microcrystalline-cryptocrystalline, tight, 0-3% earthy porosity, no shows.

1320-1325 SHALE 100% greenish grey, part black brown, rough-waxy, medium hard-hard, micaceous, part silty, calcareous, trace pyrite nodules, fissile-subfissile. TRACES LIMESTONE as above.

TOP BEAVERHILL LAKE MD 1324m SS - 542

1325-1330 SHALE 100% greenish grey, part black brown, rough-waxy, medium hard-hard, micaceous, part silty, calcareous, minor pyretic, trace pyrite nodules, fissile-subfissile. LIMESTONE MINOR-5% light grey, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, tight, 0-3% earthy porosity, no shows.

1330-1335 SHALE 95% grey, black, minor brown, rough-waxy, medium hard-hard, micaceous, silty, calcareous, traces pyretic, fissile-subfissile. LIMESTONE 5% light grey, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, minor slightly argillaceous, trace slightly dolomitic, trace pyretic, tight, 0-3% earthy porosity, no shows.

1335-1340 SHALE 95% grey, black, minor brown, rough-waxy, medium hard-hard, micaceous, part silty, calcareous, traces pyretic, fissile-subfissile. LIMESTONE MINOR-5% light grey, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, minor slightly argillaceous, trace slightly dolomitic, trace pyretic, tight, 0-3% earthy porosity, no shows.

1340-1345 SHALE 95% grey, black, minor brown, rough-waxy, medium hard-hard, micaceous, part silty, calcareous, minor slightly dolomitic, traces pyretic, fissile-subfissile. LIMESTONE 5% light grey, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, minor slightly argillaceous, trace slightly dolomitic, trace pyretic, tight, 0-3% earthy porosity, no shows.

TOP SLAVE POINT 1348.5M SS - 566.5m

1345-1350 SHALE 90% grey, black, minor brown, rough-waxy, medium hard-hard, micaceous, part silty, calcareous, pyretic, trace dolomite, fissile-subfissile.

LIMESTONE 10% light grey, buff, traces brown, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, minor slightly argillaceous, traces dolomitic, minor pyretic, tight, 0-3% earthy porosity, no shows.

1350-1355 LIMESTONE 100% brown, buff, mudstone, micritic, lumpy, dense-lithographic, cryptocrystalline-trace very fine crystalline, tight, 0-3% earthy porosity, milky white fair streaming cut, gives petriferous odour.

1355-1360 LIMESTONE 100% brown, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-trace very fine crystalline, trace dolomitic, tight, 0-3% earthy porosity, milky white good streaming cut, gives petriferous odour.

1360-1365 LIMESTONE 100% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, tight, 3% earthy porosity, milky white good streaming cut, gives petriferous odour.

1365-1370 LIMESTONE 100% brown, buff, mudstone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic, tight, estimated 3% earthy and pin point porosity, milky white good streaming cut, gives petriferous odour.

1370-1375 LIMESTONE 100% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, trace pyrite nodule, trace dolomitic, tight, estimated 3-6% earthy and pin point porosity, milky white fair streaming cut, gives petriferous odour.

1375-1380 LIMESTONE 100% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic, trace dolomitic, tight, estimated 3% earthy and pin point porosity, milky white good streaming cut, gives petriferous odour.

1380-1385 LIMESTONE 100% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic and dolomitic, rare anhydritic, estimated 3% earthy and pin point porosity, no visible-poor slow cut.

TOP F-4 1389.5m SS – 607.5m

1385-1390 LIMESTONE 100% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic, trace Anhydrite, tight, estimated 3% earthy and pin point porosity, milky white good streaming cut. DOLOMITE MINOR dark brown, wakestone, microcrystalline-very fine crystalline, estimated 3-6% earthy and pin point porosity, milky white good streaming cut.

1390-1395 LIMESTONE 80% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic, tight, estimated 3% earthy and pin point porosity, milky white good streaming cut.

DOLOMITE 20% dark brown, wakestone, microcrystalline-very fine crystalline, estimated 3% earthy and intercrystalline porosity, poor-fair slow cut. MINOR ANHYDRITE white, tan, hard, dense, dolomitic.

## TOP WATT MTN 1396m SS -614m

1395-1400 LIMESTONE 70% as above

DOLOMITE 25% as above

MINOR ANHYDRITE white, tan, hard, dense, dolomitic.

SHALE 5% green, waxy-silky, medium hard-hard, micaceous, calcareous, traces pyrite nodules, fissile-blocky.

1400-1405 SHALE 40% green, waxy-silky, medium hard-hard, micaceous, calcareous, pyretic, traces pyrite nodules, fissile-blocky. LIMESTONE 60% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-minor very fine crystalline, traces pyretic, tight, estimated 3% earthy and pin point porosity, milky white good streaming cut.

## TOP SULPHUR PT. LIMESTONE 1405.5m SS -623.5m

1405-1410 LIMESTONE 80% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-traces very fine crystalline, tight, estimated 0-3% earthy and pin point porosity, no visible shows. SHALE 20% as above.

## TOP SULPHUR PT DOLOMITE 1413m SS -631

1410-1415 LIMESTONE 95% brown, buff, mudstone-wakestone, micritic, lumpy, dense, cryptocrystalline-traces very fine crystalline, tight, estimated 0-3% earthy and pin point porosity, no visible shows. SHALE 05% as above. Traces Dolomite.

1415.0-1417.5 LIMESTONE 90% as above.

DOLOMITE 10% brown, grainstone-wakestone, very fine-minor fine crystalline, slightly calcareous, estimated 9% pin point and intercrystalline porosity, scattered bright yellow fluorescence, yellow white good streaming cut.

1417.5-1420.0 DOLOMITE 50% brown, grainstone-wakestone, very fine-fine crystalline, estimated 9% pin point and intercrystalline porosity, scattered yellow fluorescence, yellow white good fast streaming cut. LIMESTONE 50% as above.

1420.0-1422.5 DOLOMITE 100% brown, grainstone, very fine-fine crystalline, trace free crystals, traces bitumen partings, estimated 6-9% intercrystalline and vuggy porosity, bright yellow fluorescence, yellow white good fast streaming cut.

1422.5-1425.0 DOLOMITE 100% brown, grainstone, very fine-fine crystalline, traces free crystals, traces bitumen partings, estimated 6-9% intercrystalline and vuggy porosity, scattered bright yellow fluorescence, yellow white good fast streaming cut.

1425.0-1427.5 DOLOMITE 100% brown, grainstone, very fine-fine crystalline, traces free crystals, recrystallization at places, traces bitumen partings and limestone, estimated 3-6%

intercrystalline and vuggy porosity, scattered bright yellow fluorescence, yellow white good fast streaming cut.

TOP MUSKEG 1429.5m SS -647.5m

1427.5-1430.0 DOLOMITE 100% brown, minor dark brown, grainstone, very fine-fine crystalline, traces free crystals, recrystallization common, traces bitumen partings and pyrite, estimated 3-6% intercrystalline and vuggy porosity, yellow white fair streaming cut.

1430.0-1432.5 DOLOMITE 100% brown, trace dark brown, grainstone, very fine-fine crystalline, traces free crystals, abundant bituminous black shale, estimated 6% intercrystalline and vuggy porosity, no visible-very poor slow cut. Trace Anhydrite.

1432.5-1435.0 DOLOMITE 100% brown, dark brown, grainstone, very fine-fine crystalline, estimated 6% intercrystalline and vuggy porosity, yellow white fair streaming cut. MINOR ANHYDRITE cream, white, off white, dense, cryptocrystalline, hard.

1435.0-1437.5 DOLOMITE 90% brown, dark brown, grainstone, very fine-fine crystalline, estimated 6% intercrystalline and vuggy porosity, yellow white fair streaming cut. ANHYDRITE 10% cream, white, off white, dense, cryptocrystalline, hard.

1437.5-1440.0 DOLOMITE 90% brown, dark brown, grainstone, very fine-fine crystalline, abundant bitumen and shale, estimated 3-6% intercrystalline and vuggy porosity, no visible cut. ANHYDRITE 10% cream, white, off white, dense, cryptocrystalline, hard.

1440-1445 DOLOMITE 80% brown, dark brown, grainstone, very fine-fine crystalline, abundant bitumen and shale, estimated 3-6% intercrystalline and vuggy porosity, no visible-poor cut. ANHYDRITE 20% cream, white, off white, dense, cryptocrystalline, hard.

1445-1450 ANHYDRITE 40% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 40% as above, gives yellow white fair streaming cut.  
SHALE 20% green grey, black, rough, medium hard-hard, calcareous, blocky-splintery.

1450-1455 ANHYDRITE 80% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 20% as above, gives yellow white fair slow cut.  
SHALE MINOR as above.

1455-1460 ANHYDRITE 90% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 10% brown, dark brown, grainstone-minor wakestone, very fine-fine crystalline, estimated 3-6% intercrystalline and pinpoint porosity, yellow white fair slow streaming cut.

1460-1465 ANHYDRITE 95% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 10% as above.

1465-1470 ANHYDRITE 90% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 10% brown, dark brown, grainstone-minor wakestone, very fine-fine crystalline, estimated 6% intercrystalline and pinpoint porosity, yellow white no visible-slow cut.



1470-1473 ANHYDRITE 40% cream, white, off white, dense, cryptocrystalline, hard.  
DOLOMITE 60% as above.

TD 1473m (SS - 691m) REACHED ON FEBRUARY 10, 2010 @ 2200 HRS.

**BIT RECORD**

Bit No.	Size mm	Make	Type	Jets	Depth IN/Out (m)	Bit Mtrs	Bit Hrs	Wt DaN 1000	RPM	Cumul. Hrs	T-B-G	Remarks
1	311	Varel	HE04SMR SV	14.3X4	000/378	378	30.50	3-4	65-110			Surf. Hole
2A	200	Varel	VTD513H X	10.3X7	378/1089	711	55.25	3	90			Main Hole
2B	200	Varel	VTD513H X	10.3X7	467/576 Side track	109	07.00					
2C	200	Varel	HE18MS V	3X14.3	576/731	155	15.25					
2D	200	Varel	VTD513H X	10.3X7	535/1473 cement 535-731	938	74.25					Drilled cement 535-731m TD 1473.

BIT HOURS TO DRILL 378m OF SURFACE HOLE:	030.50
BIT HOURS TO DRILL MAIN HOLE:	151.75
TOTAL BIT HOURS TO DRILL 2095m OF BOTH TRACKS FOR 1473m OF HOLE:	182.25

**MUD RECORD**

WELL NAME: Para et al Cameron M-75

MUD COMPANY: Marquis Alliance

HOLE SIZE: 311 &amp; 222 mm

MUD TYPE: Polymer.

TOTAL DEPTH: m

MUD UP @: 1000m

DEPTH (M)	DEN. Kg/m <sup>3</sup>	VIS. (S/L)	W.L. (ml/30 min)	pH	REMARKS
95	1015	34			
167	1010	38			
290	1020	45			
334	1020	50			
367	1020	65			
374	1020	78			
378	1020	45			Surface hole T.D. 378m
620	1000	30		10.0	Drilled with floc water 378-900m.
966	1020	37		8.5	Start Mud Up @ 900m
1026	1050	58	7.0	11.5	
1086	1050	40	-	10.0	
467	1005	30	-	10.5	Drilled Side Track with Floc Water from 467-900m.
610	1020	30	-	10.0	
755	1010	30	-	11.0	
912	1027	27	-	11.0	
1010	1010	34	-	8.5	
1130	1020	35	9.5	8.5	
1200	1025	36	15.0	8.5	
1295	1025	40	8.0	8.5	
1327	1030	42	8.0	9.0	
1473	1040	50	7.0	10.0	

### **ENCLOSURES**

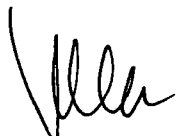
Following are enclosed as part of this report.

1. Geological Strip Log & ROP GAS Plot: 467m to TD (Side/main Track).
2. Geological Strip Log & ROP GAS Plot: 378m to 1089m (Plugged Track).
3. CD.

**DISTRIBUTION**

**The original and FIVE copies of the geological report on Para et al Cameron M-74 has been completed. The ORIGINAL and FOUR copies of the report are being forwarded to PARAMOUNT RESOURCES LTD. and the remaining copy is being retained by Moh & Associates Oilfield Consultants Ltd.**

**Respectfully,**



**Moh Sahota, B.Sc. (Hons.), M.Sc. (Geology)  
President  
Moh and Associates Oilfield Consultants Ltd.**







