

# RUNNING HORSE RESOURCES INC.



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## Geological Report

on

### Para et al Cameron C-16 Unit C Section 16

Well Reached Total Depth of 1454 metres

on

March 14, 2004 @ 15:20 hours

for



Prepared for:

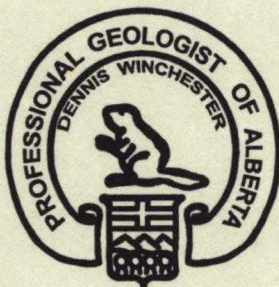
Mr. Llew Williams, Manager  
Paramount Resources Ltd.

Wellsite Geologist:

Brad Powell, B.Sc.  
Running Horse Resources Inc.

Approved by:

Dennis Winchester, P.Geol.  
Running Horse Resources Inc.







Precision 247





Rig way off on the ridge jutting out into the horizon



Driving off the ridge

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CD /Digital report, files, photos, logs	Back cover slip



# Executive Summary

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**Para et al Cameron C-16** is a vertical development well spudded by Precision Drilling Rig #247 on March 7, 2004 @ 06:30. Surface hole is 311mm drilled to 430.0m with 219.1mm casing landed at 430.0m. The 200mm main hole terminated in the **Muskeg** formation at 1454.0m March 14, 2004 @ 15:20. 139.7mm production casing was run and landed at 1454.0m.

This well was drilled primarily to produce oil from the **Sulphur Point Dolomite** and secondarily to evaluate the **Slave Point** for possible gas. Cutting samples were taken from 1310m to TD at 1454.0m. Triple Induction, SP, Neutron, Density, Compensated Sonic, Pe, Gamma Ray and XY Caliper logs were run from TD to surface casing. Microlog was run from TD to 1300m. A total gas detector was run from surface casing to TD.

The **Sulphur Point Dolomite** is a microcrystalline to medium crystalline packstone to grainstone. The dolomite was picked in samples at 1413.5m and 1411.2m on logs. It was 12.3m thick, conformably and sharply underlain by anhydrite of the Muskeg formation. Observation of samples saw common subhedral and euhedral crystal growth. Grain size was microcrystalline to medium crystalline with streaks of fair to good vug porosity and fair intercrystalline in part sucrosic porosity. The samples appeared quite granular in texture. The most porous intervals from 1417-1420m show 18-24% porosity on density logs. Excellent ROP rates also indicate good porosity. The samples were tan to light brown to brown and spotty oil staining. They showed scattered yellow fluorescence and a slow streaming watery to milky yellowish white cut, and a strong petroliferous odor. Induction log analysis showed 9-12ohms on the deep induction in the porous intervals. Caliper logs show slight filter cake, and the SP curve shows 40mV deflection, both indicating permeability. Gas detector readings in the dolomite interval peaked at 370 units over a baseline of 90 units. **The Sulphur Point Dolomite appears to have potential for oil production.**

The **Slave Point** occurred in samples at 1345.6m which was confirmed by logs. It is a massive, clean limestone mudstone to wackestone, 41.0m thick, resting conformably on the dolomitic F4 marker. The Slave Point is cream to brown, in part mottled, cryptocrystalline to microcrystalline, with trace very fine crystalline. It appears in part chalky, argillaceous in part, and flaky to blocky, with scattered pyrite nodules and locally disseminated pyrite crystals. The lower section has minor anhydrite stringers. It was dense with traces of poor intercrystalline porosity, and inferred minor earthy porosity. This was confirmed by density logs and over the slightly porous middle interval of 1355-1371m; it showed 4-7% porosity. There is a slight gas-effect crossover on the density / neutron logs. The samples had a slight petroliferous odor, and common yellow fluorescence, with a questionable watery greenish cut. Deep induction logs show over



## Executive Summary

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70-80 ohms. Gas detector readings from 1356.5-1358.5m are approximately 320 units over a baseline of 195 units. **The Slave Point does not appear to have strong production potential at this location.**

Para et al Cameron C-16 was cased for production as an oil well from the Sulphur Point Dolomite.



1420m, Sulphur Point Dolomite, medium subhedral and euhedral crystal growth and vug porosity, 60X zoom.



## Well Data Summary

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<b>OPERATOR</b>	Paramount Resources Ltd.
<b>WELL NAME</b>	Para et al Cameron C-16
<b>LOCATION</b>	Unit C    Section 16
	Grid Area: Lat 60° 10' N Long 117° 30' W
<b>UWI</b>	300C166010117300
<b>POOL</b>	Undefined
<b>FIELD</b>	Cameron Hills
<b>PROVINCE</b>	Northwest Territories
<b>LICENCE NUMBER</b>	2001
<b>CLASSIFICATION</b>	Production
<b>A.F.E. NUMBER</b>	03N410020

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<b>SURFACE COORDINATES</b>	Latitude: 60° 05' 03.142" North
	Longitude: 117° 32' 58.370" West

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<b>ELEVATIONS</b>	KB: 758.82m
	GL: 754.22m

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<b>TOTAL DEPTH</b>	Driller: 1454.0m (-695.18m SubSea)
	Logger: 1454.0m (-695.18m SubSea)

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<b>DRILLING CONTRACTOR</b>	Precision Drilling Rig #247
<b>ENGINEER</b>	Meril Schrader      780-446-3768
<b>GEOLOGIST</b>	Brad Powell, B.Sc.    403-861-0838

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<b>SPUD DATE</b>	March 7, 2004 @ 06:30
<b>COMPLETED DRILLING</b>	March 15, 2004 @ 15:20
<b>RIG RELEASE</b>	March 16, 2004 @ 12:00

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# Well Data Summary

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**HOLE SIZE** Surface hole: 311mm  
Main hole: 200mm

**CASING** Surface: 219.1mm, 35.70 kg/m set @ 430.0m  
Production: 139.7mm, 20.83 kg/m set @ 1454.0m

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**LOGGING** STI / MRT/ SpeD / CNS / GR / XY CAL / BCS from TD to surface casing.  
Microlog from TD to top of Slave Point.

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**DSTs** none

**CORES** none

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**SAMPLES** Operator: 1 set vials (@ 5m) over interval: 1310m - TD  
NEB: 2 sets vials (@ 5m) over interval: 1310m - TD  
1 set bags (@ 5m) over interval: 1310m - TD

**MUD RECORD** 0-430m Gelchem  
430-1250m Floc Water  
1250m-TD Gelchem

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**DIRECTIONS** From High Level, Alberta, go north on Highway 35. 1.3km south of Indian Cabins, turn west onto main road and go 33km, staying right at all Y forks. Turn right up big hill, drive 16km, following rig signs.

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## PROBLEMS

**On Surface Hole:** Considerable sloughing in gravel zones required much reaming and cleaning on surface hole.

**On Main Hole:** Severe lost circulation and losses required 3 cement plugs to be run, over the entire Wabamun formation.

Had to stop and treat mud for anhydrite contamination in mud upon drilling into Muskeg formation.



# Logging Summary

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**Date:** March 15, 2004

**Logging Company:** Precision Wireline      **Engineer:** K. Toews

**Mud Properties:** WT: 1100 kg/m<sup>3</sup>    Visc: 81 s/L    WL: 8.0    pH: 10.5

**Hole Size:** 200mm

**Surface Casing:** 219.1mm, 35.7kg/m, set @ 430.0m

**Depths:** Driller: 1454.0m    Strap: 1454.36m    Logger: 1454.0m

**Logging Times:** First Alerted: 13:00 March 13, 2004

Time Required: 00:01 March 15, 2004 (9.0hr final notice)

Arrived: 22:45 March 14, 2004

Rig Up: 23:45 March 14, 2004

Rig Out: 07:30 March 15, 2004 (7.75hr rig time)

**Hole Condition:** Good

**Circulations:** 1.5hr after TD and 1.5hr after wiper

**Wiper Trips:** TD to 850m

## LOGGING SEQUENCE

**Run #1:** STI / SpeD / CNS / Pe / GR / MRT / CAL

**Interval:** TD to surface casing (MRT 1300m to TD)

**Run #2:** BCS / UGR / CAL

**Interval:** TD to surface casing

## REMARKS:

No problems getting logging tools to bottom for Run #1. On bottom with logging Run #1 @ 01:30 March 15, 2004



## Bit Record & Casing Summary

### Bit Record

Bit #	Make	Type	Size	In (m)	Out (m)	Meters (m)	Hours	ROP (m/hr)	CONDITION
1A	Smith	GFX1C	311mm	0	98	98	7.00	14.00	9 - 9 - WT - 1mm - BHA
2A	Hughes	CH-14	311mm	98	306	208	9.50	21.89	4 - 4 - WT
3A		S33SF	311mm	306	430	124	3.75	33.07	2 - 2 - WT - 1mm - TD
1	Varel	MKS55	200mm	430	639	209	8.00	26.13	1 - 1 - WT - 0mm - LC
1RR	Varel	MKS55	200mm	639	684	45	1.25	36.00	1 - 1 - WT - 0mm - LC
1RR	Varel	MKS55	200mm	684	852	168	7.00	24.00	1 - 1 - WT - 0mm - LC
1RR	Varel	MKS55	200mm	852	1454	602	33.00	18.24	1 - 2 - WT - 1mm - TD

### Casing / Cement Summary

Type	Casing Size	Hole Size	Landed	Total Joints	Remarks
Surface	219.1mm	311mm	430.0m	32	32 joints of 219.1mm 35.72kg/m, J-55, ST&C new Camanch casing ran. Cemented with Sanjel 32t of 0:1:0 Class G + 2% CaCl <sub>2</sub> with density 1901 kg/m <sup>3</sup> . Approximately 0.5m <sup>3</sup> of good returns, float OK, plug down @ 10:10 March 9, 2004.
Production	139.7mm	200mm	1454m	109	109 joints of 139.7mm 20.83kg/m, J-55, 8RD ST&C new Ipsco casing ran. Cemented with Sanjel with 28.5t Thixlite with 1% SMS for lead. Tail cement 3.5t Expandomix LWL with 0.1% CFL-3 and 0.2% LTR and 0.2% SPC-11. Float held. 5.0m <sup>3</sup> good returns. Plug down 05:00 on March 16, 2004.



## Deviation Surveys

Depth Meters	Inclination Degrees	Azimuth Degrees	TVD Meters	North Meters	East Meters	Section Meters	Dogleg /30m	Build Rate /30m	Turn Rate /30m
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THIS WELL IS A VERTICAL WELL

32	0.50
59	0.50
115	0.50
170	0.25
229	1.00
287	2.00
326	1.00
384	1.00
417	1.25
483	1.00
592	0.25
698	2.00
746	1.00
842	0.25
958	0.25
1064	0.25
1170	0.75
1276	0.50
1379	0.50
1446	0.75



# Daily Drilling Summary

\* note that operations are as reported from 00:00 to 23:59 on the date shown

DATE	DEPTH @ 23:59	PROGRESS	OPERATIONS LAST 24 HOURS
Mar 6	0	0	Move to location. Spot and level rig and buildings, raise derrick, rig to spud.
Mar 7	111	111	Rig up. Pre-spud and safety meeting. Spud well @ 06:30 March 7, 2004. Drill ahead with Bit #1A 311mm surface hole with required rig services and surveys to 98m. Bit trip for poor ROP. RIH with new BHA with Bit #2A. Drill from 98m to 111m.
Mar 8	430	319	Drill 311mm surface hole with Bit #2A from 111m to 306mm with required deviation surveys and rig service. Bit trip for poor ROP. RIH with Bit #3A, work mud rings, ream. Drill from 306m to 421m. Wiper trip. Drill to 430m surface TD. Circulate and condition mud for running casing. Condition hole and circulate. Hoist to run casing.
Mar 9	430	0	Run 32 joints 219.1mm Camanch surface casing. Circulate casing. Cement with Sanjel. Plug down 10:10 March 9, 2004. WOC. Cut casing, weld on bowl. Nipple up BOPs. Test BOPs, pressure test manifold, valves, HCR, rams, etc., and repair rig.
Mar 10	639	209	RIH with Bit #1, circulate, drill cement, float and shoe. Drill out at 04:00. Drill ahead 200mm main hole with required rig service and surveys from 430m to 439m. Leak off test. Drill ahead from 439m to 621m. Partial losses at 583m. Lost circulation 15m3 in 10min @ 621m. Rebuild volume and prepare for cement plugs. Run cement plug #1. WOC.
Mar 11	684	45	WOC. RIH tag cement @ 541m. POOH and make up new BHA with Bit #1RR. Drill out plug. Drill ahead 200mm main hole with losses to 684m. POOH with flow checks. Lay down BHA, RIH open ended to run cement plug #2. Drop plug #2. POOH and WOC. Run in, tag cement @ 487m. POOH, make up BHA. RIH with Bit #1RR. Drill out plug.



## Daily Drilling Summary

Mar 12	865	181	Drill ahead 200mm main hole to with required rig service and directional surveys from 684m to 852m. POOH with flow checks to run plug #3. Run cement plug #3. RIH, tag cement @ 545m. POOH, make up BHA with Bit #1RR, RIH, drill out plug. Drill ahead from 852m to 865m.
Mar 13	1374	509	Drill ahead 200mm main hole with required rig service and directional surveys from 865m to 1374m.
Mar 14	1454	80	Drill 200mm main hole from 1374m to 1454m TD @ 15:20. Circulate and condition hole for logging. Wiper trip to 850m. Circulate, POOH for wireline logging.
Mar 15	1454	0	Rig in Precision Wireline. Log Run #1. Rig out loggers. RIH to condition hole for casing. POOH. Rig for casing. Ran 114 joints 114.3mm production casing. Circulate casing, rig for cementing.
Mar 16	1454	0	Rig for cement. Cement with Sanjel. Plug down 05:00. Tear out BOPs, set casing slips. Tear out rig. Rig release 12:00 March 16, 2004.

## Formation Tops

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Kelly Bushing Elevation:        758.82m

Formation	Sample (m)	Logger (m)	Elevation (m)
Wabamun	533.0	533.0	+225.82
Fort Simpson	723.0	722.0	+ 36.82
Twin Falls	835.0	835.0	- 76.18
<b>Slave Point *</b>	1345.6	1345.6	- 586.78
F4 Marker	1386.5	1386.5	- 627.68
<b>Watt Mountain</b>	1393.0	1393.0	- 634.18
Sulphur Point LS	1399.5	1397.3	- 638.48
<b>Sulphur Point DOL **</b>	1413.5	1411.2	- 652.38
Muskeg	1423.5	1423.5	- 664.68
Total Depth	1454.0	1454.0	- 695.18

*\*\*Primary Zones of Interest*

*\* Secondary Zones of Interest*



## Sample Descriptions

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- 1305-1325 SHALE 85%, 1) medium gray, gray to gray green, very calcareous, grading to shaly limestone, dull to micromicaceous in part, splintery to blocky, sub fissile to firm, smooth to waxy texture in part, trace pyrite, 2) dark brown to black, micromicaceous in part, blocky, in part rugose, bituminous in part?, scattered pyrite crystal clusters, LIMESTONE 15%, off white to light gray, tan, cryptocrystalline to predominantly microcrystalline, argillaceous mudstone, lumpy, local disseminated pyrite, tight, no show
- 1325-1340 SHALE 85%, 1) medium gray, gray to gray green, very calcareous, grading to shaly limestone, dull to micromicaceous in part, splintery to blocky, sub fissile to firm, smooth to waxy texture in part, trace pyrite, 2) dark brown to black, micromicaceous in part, blocky, in part rugose, bituminous in part?, scattered pyrite crystal clusters, LIMESTONE 15%, off white to light gray, tan, cryptocrystalline to predominantly microcrystalline, argillaceous mudstone, lumpy, local disseminated pyrite, tight, no show
- 1340-1345 SHALE 75%, as above, LIMESTONE 25%, as above, scattered fossil debris including Ostracods, Crinoids, and cubic pyrite crystals

### **SLAVE POINT @ 1345.6m**

- 1345-1350 LIMESTONE 40%, cream to light brown, brown, mottled, cryptocrystalline to predominantly microcrystalline, mudstone to wackestone, in part chalky, argillaceous in part, flaky to blocky, scattered pyrite nodules and locally disseminated pyrite crystals, dense with trace poor intercrystalline porosity, inferred minor earthy porosity, tight, pale yellow fluorescence, questionable watery greenish cut, SHALE 60%, as above, (cavings)
- 1350-1360 LIMESTONE 100%, cream to tan to brown, mottled in part, becoming lighter, argillaceous mudstone to wackestone, massive, cryptocrystalline to microcrystalline, occasional very fine crystalline, in part chalky, argillaceous in part, flaky to blocky, soft to firm, scattered pyrite, trace sparry calcite infill, trace poor porosity, slightly petroliferous odor, spot pale yellow to yellow fluorescence, weak slow greenish white watery cut

## Sample Descriptions

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- 1360-1370 LIMESTONE 100%, cream to tan to brown, mottled in part, argillaceous mudstone to wackestone, massive, cryptocrystalline to microcrystalline, occasional floating brown fine to medium crystals in light mud matrix, in part chalky, argillaceous in part, flaky to blocky, soft to firm, rare pyrite, trace poor earthy porosity, slightly petroliferous and oily odor, common pale yellow to yellow fluorescence, slow greenish white watery to milky cut
- 1370-1375 LIMESTONE 100%, cream to tan, slightly gray, occasional mottled brown, argillaceous mudstone to wackestone, cryptocrystalline to microcrystalline, chalky, flaky to blocky, soft, bituminous partings, tight with streaks of assumed earthy porosity, pale yellow green fluorescence, weak green cut
- 1375-1385 LIMESTONE 95%, cream to light gray brown to brown, becoming darker and more gray downsection, mottled, argillaceous mudstone to wackestone, cryptocrystalline to very fine crystalline, flaky to lumpy to blocky, in part chalky, in part anhydritic, tight, rare poor porosity, spotty pale yellow to yellow fluorescence, weak greenish slow cut, minor ANHYDRITE 5%, light gray to tan, translucent to pearly lustre, microcrystalline

### F4 MARKER @ 1386.5m

- 1385-1390 DOLOMITE 75%, cream to light buff gray, microcrystalline, gritty sandy texture, slightly anhydritic, scattered poor pinpoint porosity, assumed earthy porosity, no shows, LIMESTONE 15%, as above, yellow fluorescence, no cut, ANHYDRITE 10%, off white to light brown, pearly, amorphous
- 1390-1395 LIMESTONE 95%, cream to brown to slightly gray brown, mottled, mudstone to wackestone, microcrystalline to very fine crystalline, soft, anhydritic, flaky to lumpy, tight, pale yellow fluorescence, no cut, ANHYDRITE 5%, white to tan, pearly to watery appearance, amorphous, soft, cryptocrystalline to microcrystalline

### WATT MOUNTAIN @ 1393.0m

### SULPHUR POINT LIMESTONE @ 1397.0m



## Sample Descriptions

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- 1395-1400 LIMESTONE 95%, off white to buff, mudstone, microcrystalline, dolomitic in part, lumpy, chalky, soft, tight, no show, SHALE 5%, light gray green to mint green, argillaceous, waxy, lumpy, soft, scattered disseminated pyrite, in part calcareous
- 1400-1405 LIMESTONE 100%, white to buff, mudstone, occasionally light brown, microcrystalline to very fine crystalline, lumpy, chalky, soft, assumed earthy porosity, gassy odor, questionable show
- 1405-1410 LIMESTONE 100%, white to buff, mudstone, occasionally light brown, microcrystalline to very fine crystalline, lumpy, chalky, soft, assumed earthy porosity, petroliferous odor, spotty pale green yellow fluorescence, weak green watery cut

### **SULPHUR POINT DOLOMITE @ 1413.5m**

- 1410-1415 LIMESTONE 80%, as above, DOLOMITE 20%, tan to light brown, microcrystalline to very fine crystalline packstone to grainstone, streaks of fair pinpoint / vug porosity, poor to fair intercrystalline porosity, scattered sparry calcite, predominantly sandy granular appearance, slightly petroliferous odor, dull yellow fluorescence, weak green gut
- 1415-1420 DOLOMITE 100%, tan to light brown, becoming coarser to medium crystalline, becoming darker brown, spotty dark brown oil stain, clear euhedral and subhedral dolomite crystals, local micro sucrosic texture, local good vug and intercrystalline porosity, strong petroliferous odor, slight oily sheen on sample, spotty yellow to bright yellow fluorescence, slow streaming greenish to yellow cut
- 1420-1425 DOLOMITE 100%, essentially as above, microcrystalline to medium crystalline, granular, streaks of good vug and intercrystalline porosity, common subhedral and euhedral crystalline growth, vugs and crystals have bitumen coating, petroliferous odor, yellow to bright yellow fluorescence, milky white yellow cut, minor ANHYDRITE

## Sample Descriptions

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### MUSKEG @ 1423.5m

- 1425-1430 ANHYDRITE 20%, white amorphous nodules, off white to tan, occasional light gray brown, pearly to watery lustre, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 80%, buff to light brown, trace spotty dark brown oil stain, microcrystalline to fine crystalline in part argillaceous grainstone, occasionally sucrosic, anhydritic in part, streaky poor intercrystalline porosity, pale yellow to yellow fluorescence, no show
- 1430-1435 DOLOMITE 50%, off white to tan to light brown, microcrystalline to occasional fine crystalline grainstone, sandy appearance, occasionally micro sucrosic, streaks of poor intercrystalline porosity, pale yellow fluorescence, weak green cut, ANHYDRITE 50%, white amorphous pearly nodules to off white to tan watery, dense, slightly dolomitic in part
- 1435-1445 ANHYDRITE 80%, as above, DOLOMITE 20%, off white to tan, microcrystalline to very fine crystalline grainstone, as above
- 1445-1450 DOLOMITE 50%, off white to tan to light brown, microcrystalline to occasional fine crystalline grainstone, sandy appearance, occasional sucrosic, streaks of poor intercrystalline porosity, scattered pale yellow fluorescence, very weak green cut, ANHYDRITE 50%, white amorphous pearly nodules to off white to tan watery, dense, slightly dolomitic in part, cryptocrystalline to microcrystalline
- 1450-1454 ANHYDRITE 70%, as above, DOLOMITE, 30%, as above, occasional poor intercrystalline porosity, trace pale yellow fluorescence, questionable cut

**TOTAL DEPTH @ 1454.0m**

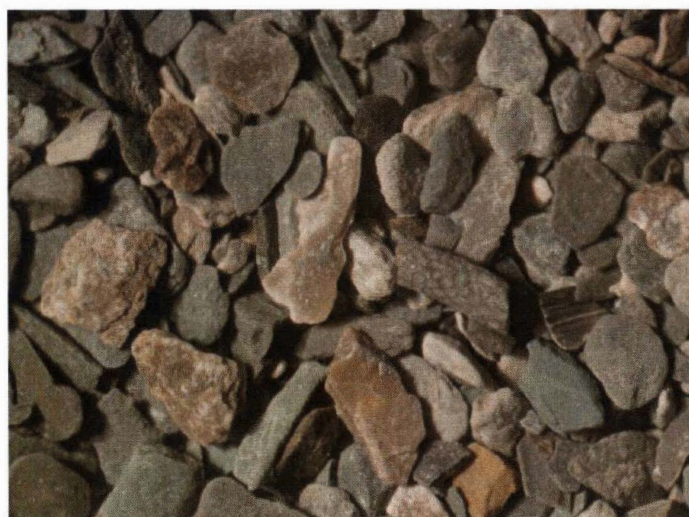




1310m, Twin Falls, 20X



1345m, Lwr Twin Falls, Ostracod & cubic pyrite



1350m, top of Slave Point, 20X



1360m, Slave Point, 20X



1360m, Slave Point, 60X



1365m, Slave Point, dark floating xls in light argillaceous matrix, 60X





1390m, F4 Dolomite Marker, 20X



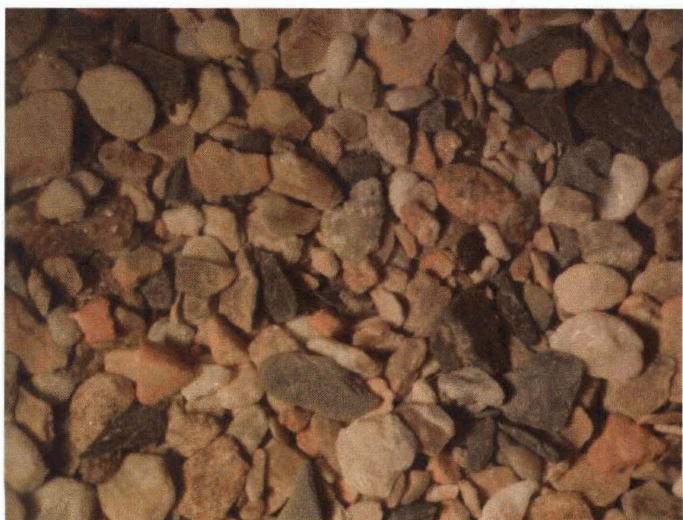
1405m, Slave Point Limestone, 20X



1420m, Sulphur Pt dol, med xl and vugs, 60X



1425m, Sulphur Point Dolomite, 60X



1445m Muskeg, 20X



1454m, Muskeg, Anhed, amorphous anhy, 60X





Scale 1:240 (5"=100') Metric

Well Name: Para et al Cameron C-16  
Location: Unit C Section 16 Grid Area: Lat 60° 10' N Long 117° 30' W  
Licence Number: 2001  
Spud Date: Mar 7, 2004 @ 06:30  
Surface Coordinates: Latitude: 60° 05' 03.142" North  
Longitude: 117° 32' 58.370" West

Region: Cameron Hills, NWT  
Drilling Completed: Mar 14, 2004 @ 15:20

Bottom Hole Coordinates:  
Ground Elevation (m): 754.22m  
Logged Interval (m): 1440m To: 1454m  
Formation: Primary = Sulphur Pt DOL  
Type of Drilling Fluid: Gel Chemical  
K.B. Elevation (m): 758.82m  
Total Depth (m): 1454m  
Secondary = Slave Point

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Paramount Resources Ltd.  
Address: 4700 Bankers Hall West  
888 3rd Street S.W.  
Calgary, Alberta T2P 5C5

GEOLOGIST

Name: Brad Powell, B.Sc.  
Company: Running Horse Resources  
Address: www.WellsiteGeologists.com  
WellsiteGeologist@telus.net  
(403) 234-7625

Comments

This well was drilled by Precision Drilling Rig #247.  
Paramount AFE #03N410020.

A Wellsite Gas Detection gas detector was run.

Logging program by Precision Wireline.  
Run #1: STI-SP-MRT-SPED-CNT-UGR-CAL  
Run#2: UGR-BCS-CAL  
Neutron Porosity and Density Porosity curves presented on a dolomite scale.

ROCK TYPES

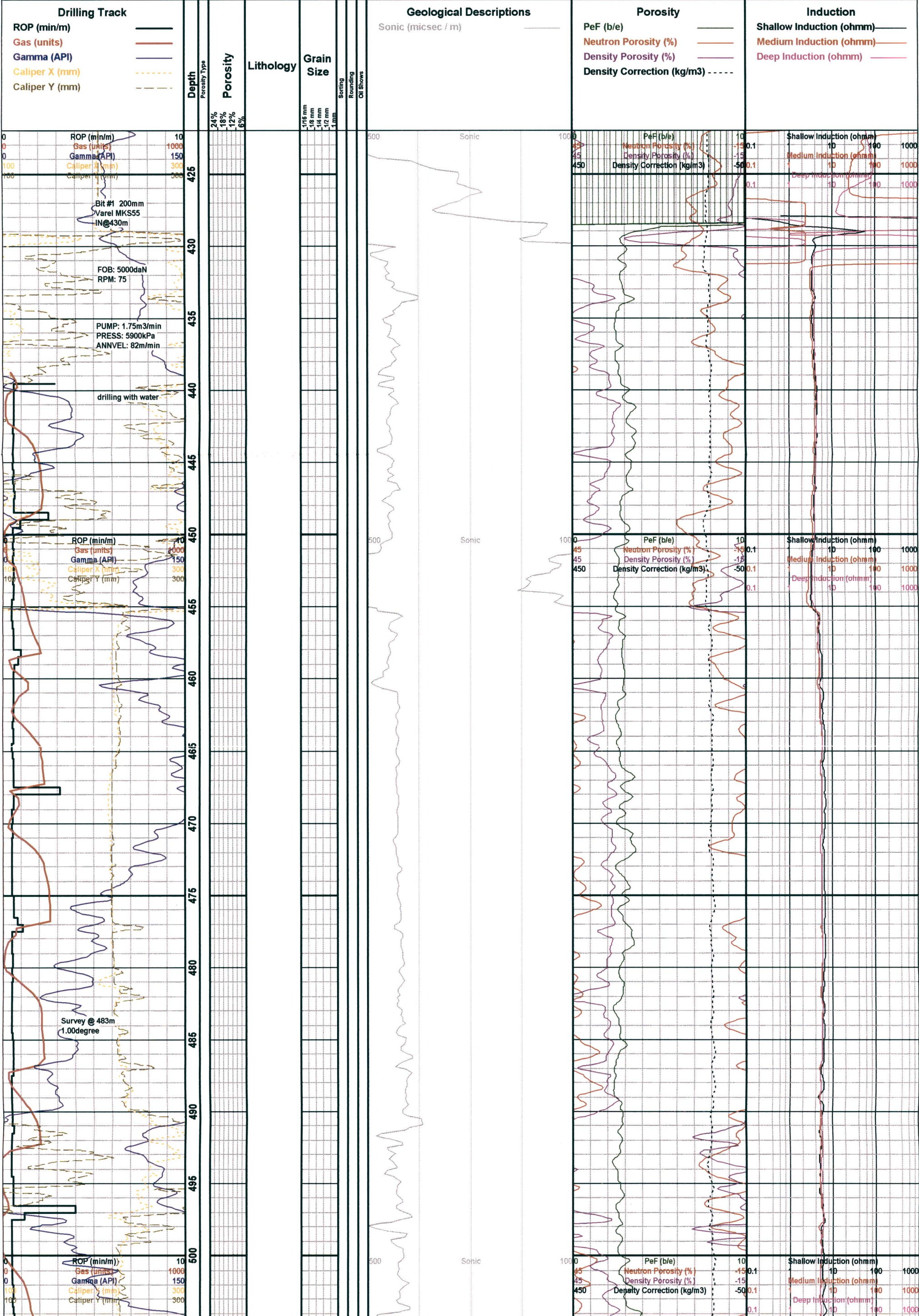
Anhy	Cht	Dol	Lmst	Shorg	Slstst
Bent	Clyst	Gyp	Meta	Shale	Ss
Brec	Coal	Igne	Mrlst	Shcol	Till
Chtlt&dk	Congl	Lime mud	Salt	Shgy	

ACCESSORIES

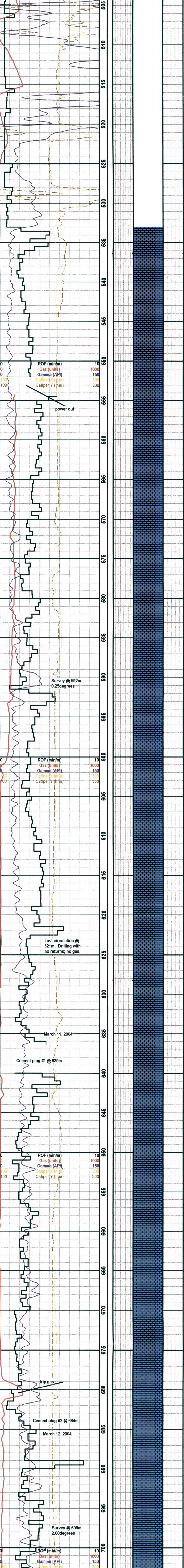
<b>MINERAL</b>				<b>STRINGER</b>	
Anhy	Gyp	Quartz	Crin	Anhy	Chalky
Arg	Hvymim	Mmica	Echin	Arg	Cryxln
Bent	Kaol	Micromica	Fish	Bent	Earthy
Bit	Marl	Glau	Foram	Coal	Finexln
Brecfrag	Minxl	<b>FOSSIL</b>	Fossil	Dol	Grainst
Calc	Nodule	Algae	Gastro	Gyp	Lithogr
Carb	Phos	Amph	Oolite	Ls	Microxln
Chtdk	Pyr	Belm	Ostra	Mrst	Mudst
Chtlt	Salt	Bioclst	Pelec	Slststrg	Packst
Dol	Sandy	Brach	Pellet	Ssstrg	Wackest
Feldspar	Silt	Bryozoa	Pisolite		
Ferrpel	Sil	Cephal	Plant	<b>TEXTURE</b>	
Ferr	Sulphur	Coral	Strom	Boundst	
	Tuff				

OTHER SYMBOLS

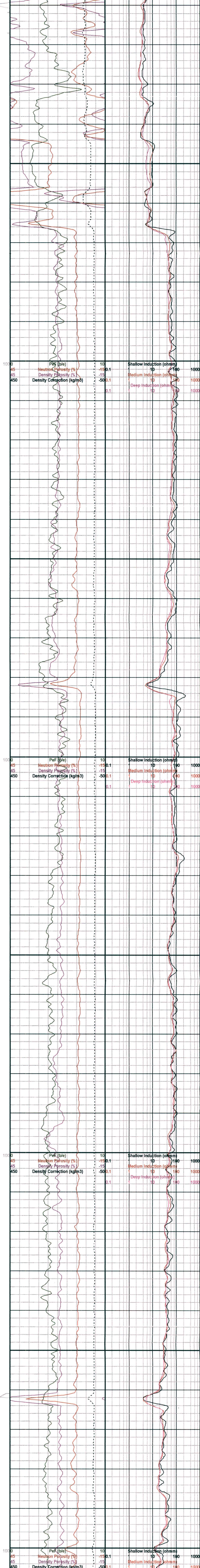
<b>POROSITY</b>	Organic	Moderate	Subang	Ques	<b>EVENT</b>
Earthy	Pinpoint	Poor	Angular	Dead	Rft
Fenest	Vuggy				Sidewall
Fracture		<b>ROUNDING</b>	<b>OIL SHOW</b>	<b>INTERVAL</b>	
Inter	<b>SORTING</b>	Rounded	Even	Core	
Moldic	Well	Subrnd	Spotted	Dst	



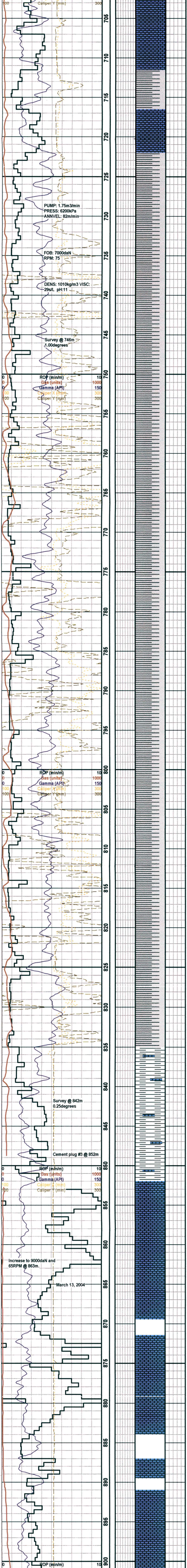




WABAMUN @ 533.0m







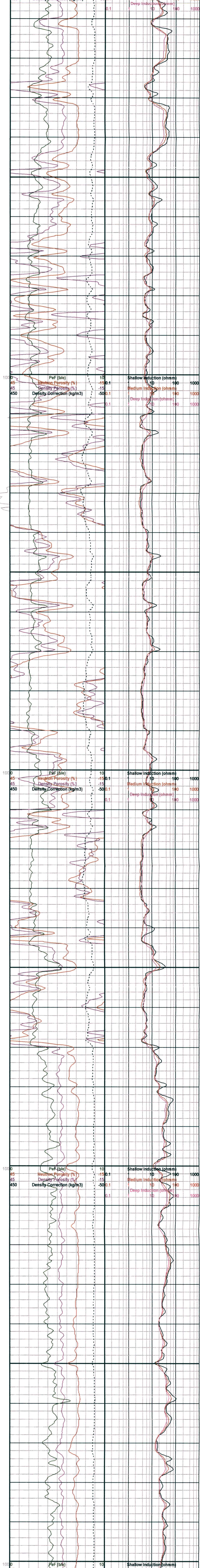
FORT SIMPSON @ 722.0m

Sonic

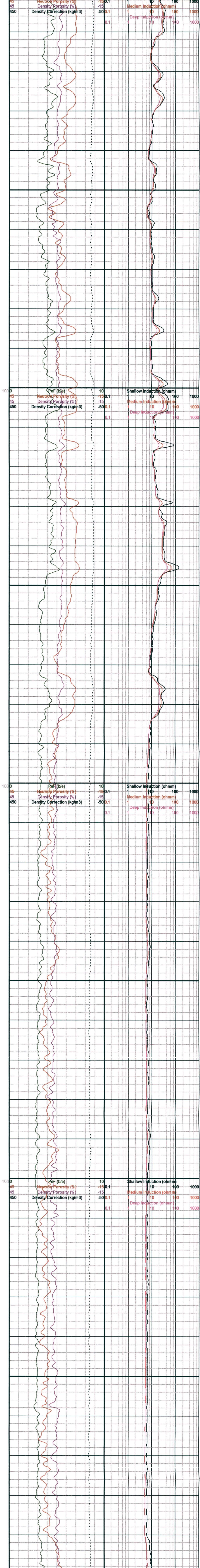
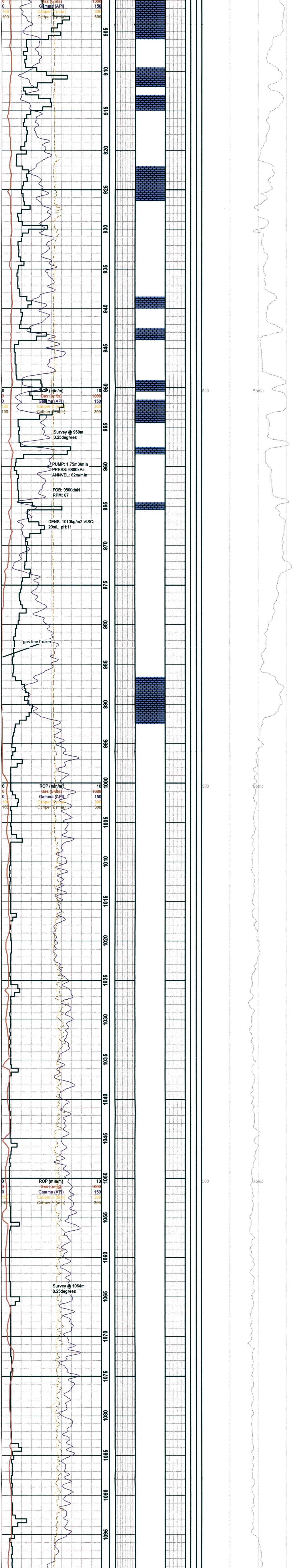
TWIN FALLS @ 835m

Sonic

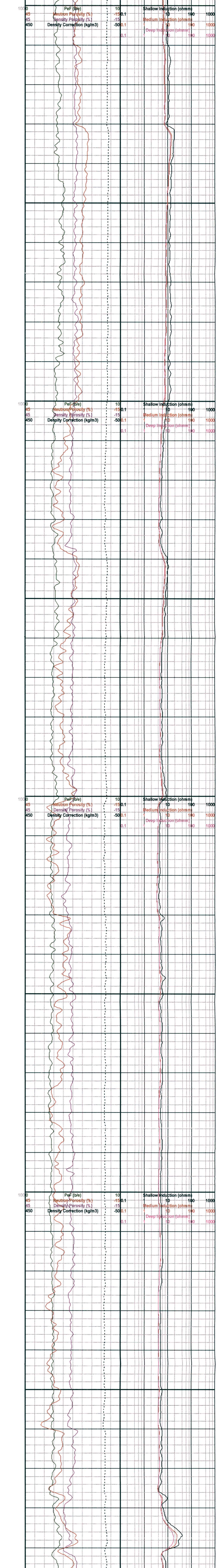
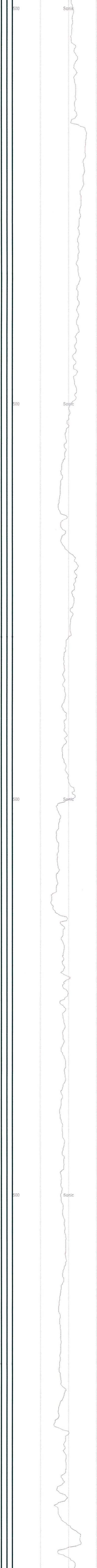
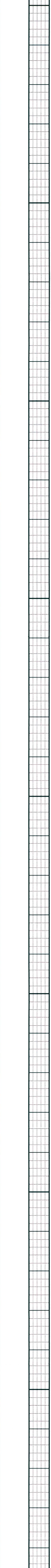
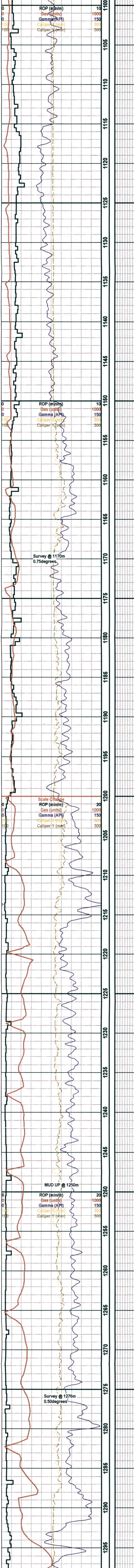
Sonic



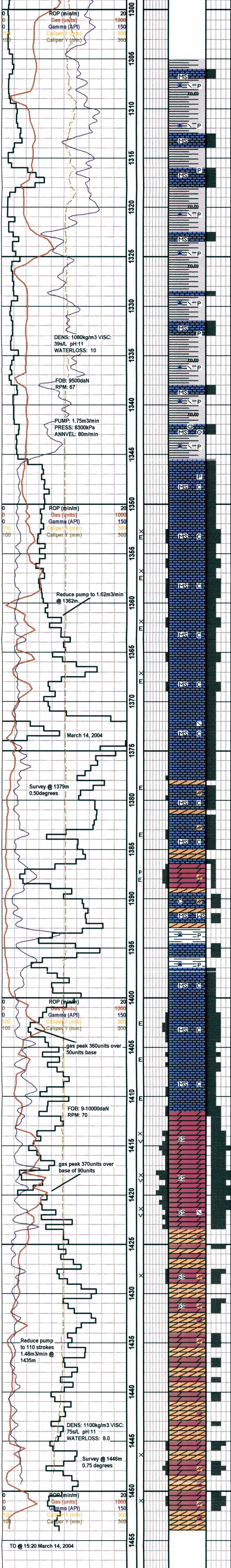












SH 85%, 1) med gy, gy to gy gn, v calc grdg to shaly ls, dull to mmica ip, splintery to blkly, sub fis to frm, smooth to waxy tex ip, tr pyr, 2) dk brn to blk, mmica ip, blkly, ip rug, bitns ip?, scat pyr xl clusters, LS 15%, off wh to lt gy, tan, crptbl to predy mcxln, arg mudst, lumpy, local desm pyr, tt, no show

SH 85%, 1) med gy, gy to gy gn, v calc grdg to shaly ls, dull to mmica ip, splintery to blkly, sub fis to frm, smooth to waxy tex ip, tr pyr, 2) dk brn to blk, mmica ip, blkly, ip rug, bitns ip?, scat pyr xl clusters, LS 15%, off wh to lt gy, tan, crptbl to predy mcxln, arg mudst, lumpy, local desm pyr, tt, no show

SH 75%, aa, LS 25%, aa, scat fossil debris including Otracods, Crinoids, cubic pyr xls

**SLAVE POINT @ 1345.6m**

LS 40%, cream to lt brn, brn, mottled, crptbl to predy mcxln, mudst to wkst, ip chalky, arg ip, flaky to blkly, scat pyr nod and locally desm pyr xls, dns with tr p intbl por, inferred mnr earthy por, tt, pale yel flr, questionable watery greenish cut, SH 60%, aa, (cavings)

LS 100%, cream to tan to brn, mot ip, becoming lighter, arg mudst to wkst, massive, crptbl to mcxln, occ vf xln, ip chalky, arg ip, flaky to blkly, soft to frm, scat pyr, tr spy cal infill, tr p por, si petf odor, spot pale yel to yel flr, wk slow greenish wh watery cut

LS 100%, cream to tan to brn, mot ip, arg mudst to wkst, massive, crptbl to mcxln, occ floating brn f to med xls in light mud mxb, ip chalky, arg ip, flaky to blkly, soft to frm, rr pyr, tr p earthy por, si petf and oily odor, com pale yel to yel flr, slow greenish wh watery to milky cut

LS 100%, cream to tan, sl gy, occ mot brn, arg mudst to wkst, crptbl to mcxln, chalky, flaky to blkly, soft, bit partings, tt with streaks of assumed earthy por, pale yel gn flr, wk gn cut

LS 95%, cream to lt gy brn to brn, becoming darker and more gy downsection, mottled, arg mudst to wkst, crptbl to vf xln, flaky to lumpy to blkly, ip chalky, ip anhydc, tt, rr p por, spot pale yel to yel flr, wk greenish slow cut, mn ANHY 5%, lt gy to tan, trnsi to pearly lustre, mcxln

**F4 MARKER @ 1386.5m**

DOL 75%, cream to lt buff gy, micxl, gritty sandy tex, sl anhydc, scat p pp por, assumed earthy por, ns, LS 15%, aa, yel flr, no cut, ANHY 10%, off wh to lt brn, pearly, amor

LS 95%, cream to brn to sl gy brn, mottled, mudst to wkst, mcxln to vf xln, soft, anhydc, flaky to lumpy, tt, pale yel flr, no cut, ANHY 10%, wh to tan, pearly to watery appnc, amor, soft, crptbl to mcxln

**WATT MOUNTAIN @ 1393.0m**

**SULPHUR PT LS @ 1397.0m**

LS 95%, off wh to buff, mudst, mcxln, dolc ip, lumpy, chalky, soft, tt, no show, SH 5%, lt gy gn to mint gn, arg, waxy, lumpy, soft, scat desm pyr, ip calc

LS 100%, wh to buff, mudst, occ lt brn, mcxln to vf xl, lumpy, chalky, soft, assumed earthy por, petf odor, spot pale gn yel flr, wk gn watery cut

**SULPHUR PT DOL @ 1411.5m**

LS 80%, aa, DOL 20%, tan to lt brn, mcxln to vf xln pckst to gnst, streaks of fair pp/vug por, p to fair intbl por, scat spy cal, predy sandy granular appnc, sl petf odor, dull yel flr, wk gn gut

DOL 100%, tan to lt brn, becoming coarser to med xln, becoming darker brown, spot dk brn oil stn, clear euhed and subhed dol xl, local mic suc texture, local g vug and intbl por, strong petf odor, slight oily sheen on sample, spotty yel to bright yel flr, slow strm greenish to yellow cut

DOL 100%, essentially aa, mcxln to med xln granular, streaks of g vug and intbl por, com subhedral and euhedral xl growth, vugs and xls have bit coating, petf odor, yel to brt yel flr, milky wh yel cut, mn ANHY

**MUSKEG @ 1423.5m**

ANHY 20%, wh amor nodules, off wh to tan, occ lt gy brn, pearly to watery lustre, crptbl, sl dolc ip, dense, tt, DOL 80%, buff to lt brn, tr spot dk brn oil stn, mcxln to f xln ip arg grnst, occly suc, anhydc ip, streaky p intbl por, pale yel to yel flr, no show

DOL 50%, off wh to tan to lt brn, mcxln to occ f xl grnst, sandy appnc, occ suc, streaks of p intbl por, pale yel flr, wk gn cut, ANHY 50%, wh amor pearly nodules to off wh to tan watery, dense, sl dolc ip, crptbl to mcxln

ANHY 80%, aa, DOL 20%, off wh to tan, mcxln to vf xln grnst, aa

DOL 50%, off wh to tan to lt brn, mcxln to occ f xl grnst, sandy appnc, occ suc, streaks of p intbl por, scat pale yel flr, v wk gn cut, ANHY 50%, wh amor pearly nodules to off wh to tan watery, dense, sl dolc ip, crptbl to mcxln

ANHY 70%, aa, DOL, 30%, aa, occ p intbl por, tr pale yel flr, questionable cut

**TOTAL DEPTH @ 1454.0m**

