Final Well Report

FINAL WELL REPORT

PARAMOUNT RESOURCES LTD.

PARA ET AL CAMERON O-19

Grid: 60^0 10′, 117^0 30′

DATE: May 11, 2004

COMPANY REPRESENTATIVE:
Dave Block

TABLE OF CONTENTS

D. GEOLOGY Page

A. INTRODUCTION

Paramount Resources Ltd. (Paramount) drilled a 1659 meter development well spudded by Shadow Rathole Drilling Ltd. on December 22, 2003 and drilled by Precision Drilling Ltd. starting on January 13, 2004 and finishing on January 25, 2004 to evaluate hydrocarbon potential. The primary target was the Sulphur Point formation at a depth of 1446 mKB. The secondary target was the Slave Point formation at 1382 mKB

The drilling contractor was Precision Drilling Ltd based out of Calgary, Alberta. Precision's Rig # 247 was used and is a land rig rated for 2200 m. The rig had a mud system capacity of 63 m^3 and was equipped with a boiler.

The well was drilled on Production License No PL-005 in which Paramount has an 88% working interest. Operating License No 2005 was issued to Paramount on January 13, 2004.

The exact co-ordinates of the well are as follows:

Latitude: 60^0 08' 46.858"
Longitude: 117^0 32' 40.281"

Shadow Rathole Drilling Ltd. drilled a 610 mm conductor hole to 12.2 meters. From surface to 1.0 meters was muskeg, 1.0 – 9.0 m was clay permafrost, and 9.0 – 12.2 m was good clay. A 406 mm conductor pipe was set and cemented at 12.2 meters.

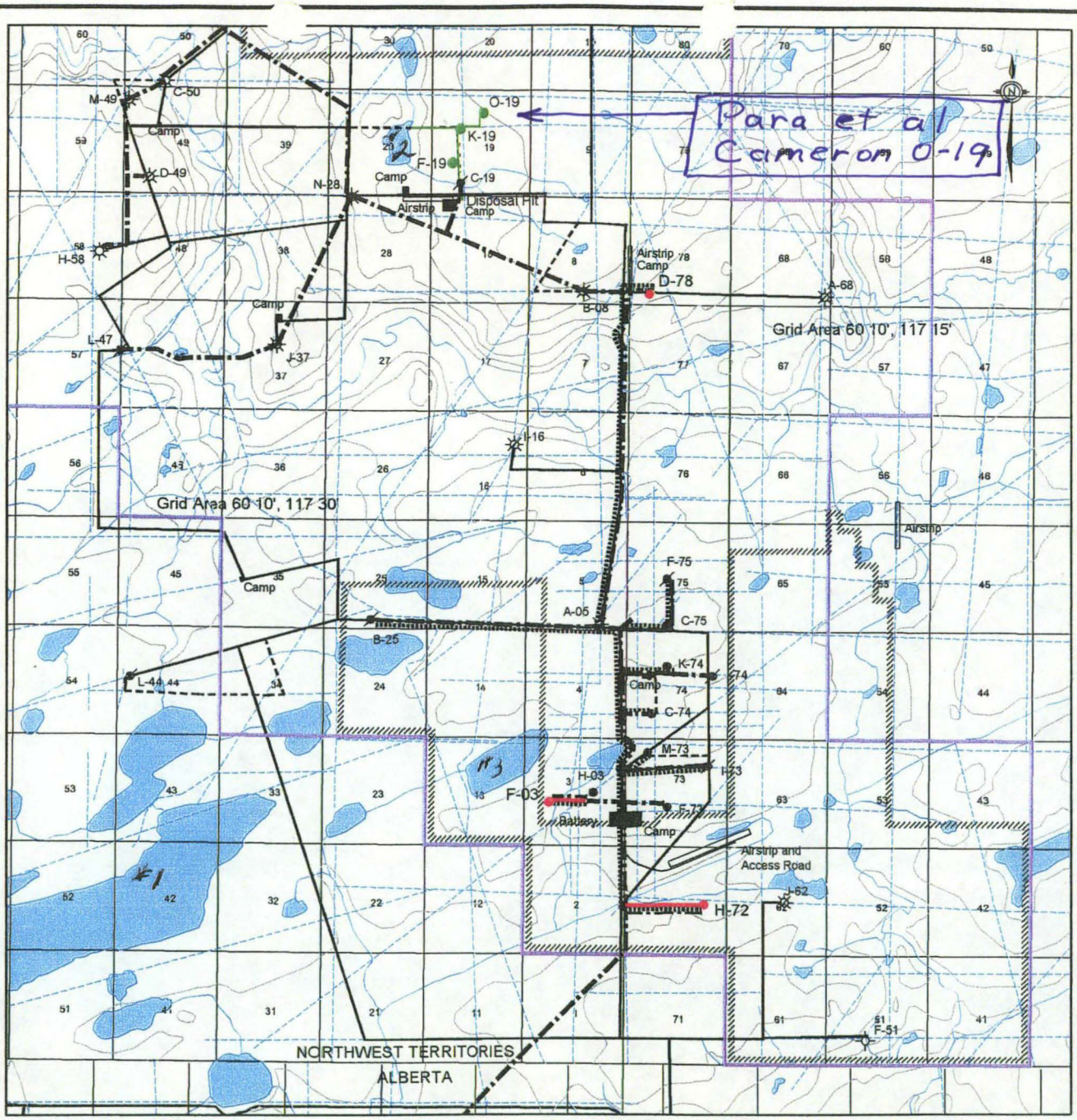
Precision #249 was moved onto the location and rigged up on January 6, 2004, prior to the granting of a license to drill the well. The diverter was nippled up, the rig was rigged up and the rig was on standby until January 13, 2004 when the license was received. Drilling commenced on January 13, 2004 at 13:45 hours. A 311 mm surface hole was drilled to 434 mKB. There were no major lost circulation or mud ring problems but rocks, gravel, sand, and sandstone were encountered making for rough drilling in the surface hole. A string of 219.1 mm, 35.7 kg/m, J-55, ST&C surface casing was run to 434 mKB. The casing was cemented with 25 t class 'G' cement plus 2% $CaCl_2$. There were 5 m^3 of cement returned to surface while cementing. The plug was bumped and the float held OK. The plug was down at 15:28 hours on January 15, 2004.

The casing and conductor were trimmed and the casing bowl was welded on. The BOP's were installed and function tested. The BOP's and manifold were pressure tested to 1500 kPa low pressure and 12000 kPa high pressure.

The float collar and shoe were drilled out to 444 mKB on January 16, 2004 A leak off test was performed with the leak off gradient found to be 25.5 kPa/m. A 200 mm hole was drilled with a flocculated water system to approximately 1250 m. A gel/chem mud system was then used to drill to a total depth of 1659 mKB. Precision Wireline ran induction, density, and sonic logs from bottom to surface casing and a micro resistivity log from bottom to 1350 mKB.

139.7 mm, 20.83 kg/m, J-55, ST&C production casing was run and set at 1657 mKB. It was cemented with 30 t Thixlite + 1% SMS and 9 t Expando LWL + 0.1% CFL-3 + 0.2% LTR + 0.2% SPC-II. There were 5.5 m^3 cement returns and the plug was bumped with 16.0 MPa.

Precision #247 was rigged out and released at 23:59 hours on January 25, 2004.



LEGEND

- SDL
- WELLSITE/ACCESS
- EMERGENCY ACCESS
- SEISMIC LINE
- PIPELINE
- 3D SEISMIC
- POWERLINE/FUEL LINE
- SATELLITE/AIRSTRIP & ACCESS

EXISTING OR PERMITTED BUT NOT YET CONSTRUCTED BY MAY 2003

- AMENDED WELLSITE/ACCESS
- DELETED

NOTE: EMERGENCY ACCESS NOT SHOWN FOR THIS APPLICATION

THIS APPLICATION

Proposed Location | Abandoned Gas Well | Suspended Gas Well | Abandoned Well | Suspended Oil Well | Active Oil Well | Active Gas Well

REFERENCE

ORIGINAL PLANIMETRIC DATA SUPPLIED BY UNIVERSAL SURVEYS INC. IN NAD 83 UTM ZONE 11. PROJECT DATA OBTAINED FROM PARAMOUNT RESOURCES LTD.

2 0 2
SCALE KILOMETRES

NOTE: WIDTH OF LINES NOT TO SCALE

PROJECT: Paramount resources ltd.

CAMERON HILLS PROJECTS

TITLE

F-19, K-19 AND O-19 AMENDMENT WELLS

Golder Associates
Calgary, Alberta

PROJECT 03-1322-134.9000			FILE No.	Application-2
DESIGN	DJ	09/10/03	SCALE AS SHOWN	REV. 0
CADD	RFM	09/10/03		
CHECK				
REVIEW				

FIGURE: 2

R:\CAD\2003\1322\03-1322-132\Application Figures\ Drawing file: Application-2.dwg Oct 10, 2003 - 1:40pm

B. GENERAL DATA

1. Well Name: Para et al Cameron O-19

   Authority to Drill a Well No: 2005

   Exploration Agreement Number: PL-005

   Location Unit: O

   Section: 19

   Grid Area: 60^0 10' N, 117^0 30' W

   Classification: Development

2. Coordinates:
   Latitude: 60^0 08' 46.858"
   Longitude: 117^0 32' 40.281"

3. Unique Well Identifier: 300O196010117300

4. Operator: Paramount Resources Ltd.

5. Contractor: Precision Drilling

6. Drilling Unit: Precision Rig # 247, Land Rig

7. Position Keeping: N/A

8. Support Craft (Helicopter): N/A

9. Drilling Unit Performance: Good

10. Difficulties and Delays: None

11. Total Well Cost: $1,200,000

12. Bottom Hole Co-ordinates: Same as surface

C. SUMMARY OF DRILLING OPERATIONS

1. Elevations:
   Ground: 793.38 m above sea level
   KB: 797.98 m above sea level
   KB to Casing Flange: 4.6 m

2. Total Depth:
   FTD: 1659 mKB
   PBTD: 1653 mKB
   TVD: 1659 mKB

3. Date and Hour Spudded: December 22, 2003 at 12:00 hours by Shadow Rathole Drilling Ltd.

   Date and Hour Drilling Started: January 13, 2004 at 13:45

4. Date Drilling Completed: January 23, 2004

5. Date of Rig Release: January 25, 2004

6. Well status: Cased and Suspended

7. Hole Sizes and Depths:

Conductor Hole:	610 mm to 12.2 m
Surface Hole:	311 mm to 434 mKB
Main Hole:	200 mm to 1659 mKB

8. Casing and Cementing Record:

   Conductor Hole:

Casing Size:	406 mm
Wall Thickness:	7 mm
Depth Set:	12.2 m
Cut Height:	At Surface
Date Set:	December 22, 2003
Cement Volume:	40 sacks
Cement Type:	Portland Normal

   Surface Hole:

Casing Make:	Ipsco
Casing Size:	219.1 mm
Casing Weight:	35.7 kg/m
Casing Grade:	J-55
Thread:	ST&C
Number of Joints:	33
Depth Set:	434 mKB

Cut Height:	At surface
Date Set:	January 15, 2004
Cement Volume:	25 Tonnes
Float Shoe Depth:	434 mKB
Float Collar Depth:	429 mKB
Cement Type:	Class 'G'
Additives:	2% $CaCl_2$
Cement Top:	Surface
Casing Bowl Size:	279 mm x 21 MPa
Casing Bowl Make:	ABB Vetco

Main Hole:

Casing Size:	139 mm
Casing Weight:	20.83 kg/m
Casing Grade:	J-55
Casing Make:	Ipsco
Number of Joints:	125
Thread:	ST&C
Depth Set:	1657 m KB
Cut Height:	Surface
Date Set:	January 25, 2004
Float Shoe Depth:	1657 mKB
Float Collar Depth:	1653 mKB
Cement Volume 1:	30.0 Tonnes
Cement Type 1:	Thixlite
Additives 1:	1% SMS
Cement Volume 2:	9.0 Tonnes
Cement Type 2:	Expando LWL
Additives 2:	0.1% CFL-3 & 0.2% LTR & 0.2% SPC-II
Cement Top:	Surface

9. Sidetracked Hole: N/A

10. Drilling Fluid:

Conductor Hole:	Water	
Properties:	N/A	
Surface Hole:	Gel - Chemical	
Properties:	Viscosity:	32 - 75 sec/L
	Weight:	1020 - 1160 kg/m^3
	PH:	8.5 – 9.0
Main (431 – 1250 m):	Floc water	
Properties:	Viscosity:	28 sec/L
	Weight:	1000 kg/m^3

	PH:	10.0 - 11.0
Main (1250 m – TD):	Gel-chem	
Properties:	Viscosity:	39 - 75 sec/L
	Weight:	1070 - 1140 kg/m^3
	PH:	10.0 – 11.0
	Water loss:	8.0 – 11.0 cc
	Solids:	Not reported
	Gels:	Not reported
	Filtrate:	Not reported
	PV / YP:	Not reported

11. Fishing Operations: **N/A**

12. Well Kicks and Well Control Operations: N/A

13. Formation Leak Off Tests:

Depth:	444 m
Fluid Density:	1000 kg/m^3
Applied Pressure:	6800 kPa
Hydrostatic Pressure:	4257 kPa
Mud Weight Equivalent:	2597 kg/m^3
Casing setting depth:	434 mKB

The surface casing leak-off test was taken to a gradient of 25.47 kPa/m before leak off was detected.

14. Time Distribution

Date	Hours	Activity
04/01/06	0.25	Safety meeting
	15.75	Move in / rig up
04/01/07	12.0	Move in / rig up
	8.0	Nipple up diverter
	4.0	Wait on well licence
04/01/08	24.0	Wait on well licence
04/01/09	24.0	Wait on well licence
04/01/10	24.0	Wait on well licence
04/01/11	24.0	Wait on well licence
04/01/12	24.0	Wait on well licence
04/01/13	12.75	Wait on well licence
	0.25	Rig service
	0.5	Test diverter
	0.5	BOP Drill
	0.25	Safety meeting
	8.25	Drill
	1.25	Survey
	0.25	Trip
04/01/14	0.75	Rig service
	2.5	Survey
	0.25	Circulate and condition mud
	15.0	Drill
	5.5	Trip
04/01/15	0.25	Rig service
	0.5	Safety meeting
	0.25	Survey
	0.75	Drill
	1.0	Unball bit
	1.5	Circulate and condition mud
	7.0	Trip
	3.0	Run casing
	1.25	Cement casing
	4.0	Wait on cement
	2.5	Weld bowl
	2.0	Nipple up BOP's

04/01/16	0.25	Rig service
	1.5	Nipple up BOP's
	6.75	Test BOP's
	0.5	BOP drill
	3.25	Trip
	2.0	Drill out casing shoe
	0.5	Leak off test
	0.5	Survey
	8.25	Drill
	0.5	Survey
04/01/17	0.75	Rig service
	9.5	Drill
	0.5	Survey
	6.0	Wait on water
	1.0	Wait on cement
	6.25	Trip
04/01/18	0.5	Rig service
	0.25	Safety meeting
	6.75	Cement off losses
	8.0	Wait on cement
	7.75	Trip
	0.75	Slip & cut drill line
04/01/19	0.25	Safety meeting
	0.75	Rig service
	1.75	Trip
	3.75	Drill out plugs
	15.5	Drill
	0.25	Circulate and condition mud
	1.75	Survey
04/01/20	0.75	Rig service
	22.0	Drill
	1.25	Survey
04/01/21	0.75	Rig service
	22.75	Drill
	0.5	Survey
04/01/22	0.25	Safety meeting
	0.5	Rig service

	0.5	Survey
	14.0	Drill
	0.5	Circulate and condition mud
	7.75	Trip
	0.5	Clean to bottom
04/01/23	0.25	Safety meeting
	0.5	Rig service
	3.0	Circulate and condition mud
	7.75	Trip
	10.5	Drill
	2.0	Logging
04/01/24	0.25	Safety meeting
	1.0	Circulate and condition mud
	1.5	Thaw frost plug
	9.75	Logging
	4.0	Trip
	1.5	Run casing
	5.25	Lay down drill string
	0.75	Slip & cut drill line
04/01/25	0.25	Safety meeting
	2.25	Circulate and condition mud
	7.0	Run casing
	2.5	Cement casing
	12.0	Tear out rig

Time Break Down by Activity:

Activity	Hours
Move in / rig up:	27.75
Wait on well licence:	136.75
Drilling:	126.5
Surveying:	9.5
Circulate and condition mud:	8.75
Running casing:	11.5
Cementing casing:	3.75
Wait on cement	13.0
Drill out casing shoe:	2.0
Rig service:	6.0
Tripping:	51.25
Safety meetings:	2.5
Nipple up diverter:	8.0

Test diverter:	0.5
Clean to bottom:	0.5
Unball bit:	1.0
Weld casing bowl:	1.0
Nipple up BOP's:	3.5
Pressure test BOP's:	6.75
BOP drill:	1.0
Leak off tests:	0.5
Slip & cut drill line:	1.5
Logging:	11.75
Thaw frost plug:	1.5
Wait on water :	6.0
Lay down drill string:	5.25
Cement off losses:	6.75
Drill out cement plugs:	3.75
Rig out:	10.5

15. Deviation Survey: See page 7 of the Geological Report in the Attachment Section

16. Abandonment Plugs: N/A

17. Composite Well Record: See the copy of the strip log in the Geological Report in the Attachment Section.

18. Completion Record: Reported in a separate report.

D: GEOLOGY

GEOLOGICAL SUMMARY

Tops: See page 10 of the Geological Report in the Attachment Section.

Sample Descriptions: See page 11 - 17 of the Geological Report in the Attachment Section.

Total Depth: 1659 mKB

GAS DETECTION REPORT

A gas detector was utilized from the drill out of the conductor pipe to total depth. The gas detector readings are included on the composite geological log at the end of the Geological Report in the Appendix Section.

DRILL STEM TESTS: N/A

WELL EVALUATION

The following logs were run:

Simultaneous Triple Induction Shallow Focused Log:	434 – 1657 mKB
Spectral Density Compensated Neutron Log:	434 – 1650 mKB
Borehole Compensated Sonic Log:	434 – 1658 mKB
Micro Resistivity Log:	1350 – 1640 mKB

GAS, OIL, & WATER ANALYSES: N/A

FORMATION STIMULATION: N/A

FORMATION AND TEST RESULTS: N/A

DETAILED TEST PRESSURE DATA READINGS: N/A

E. ENVIRONMENTAL CONSIDERATIONS

There are no known outstanding environmental considerations on this well. The well was drilled sumpless with all drilling fluids being held in tanks on the lease. At the end of the job the water was stripped from the mud system and hauled to the next lease for re-use. The solids were hauled to a remote site at E-78 60^0 10' N, 117^0 15' W where they were disposed of using the mix/bury/cover technique.

RUNNING HORSE RESOURCES INC.

CALGARY ALBERTA CANADA
Cell: 660.9883, Ph/Fax 403.234.7625
wellsitegeologists@telusplanet.net
www.wellsitegeologists.com

Geological Report

on

Para et al Cameron 0-19
Unit O Section 19

Well Reached Total Depth of 1659.0 metres
on
January 23, 2004 @ 11:40 hours

for

Paramount resources ltd.

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.

PROFESSIONAL GEOLOGIST OF ALBERTA
DENNIS WINCHESTER

Sunup @ 08:45 hrs.

Table of Contents

Executive Summary

Para et al Cameron O-19 is a vertical development well spudded by Precision Drilling Rig #247 on January 13, 2004 @ 13:45. Surface hole is 311mm drilled to 434.0m with 219.1 mm casing landed at 434.0m. The 200mm main hole terminated in the **Chinchaga** formation at 1659.0m January 23, 2004 @ 11:40.

This well was drilled primarily to produce oil from the **Sulphur Point Dolomite** and secondarily to evaluate the **Keg River** for possible gas. Cutting samples were taken from 1350m to TD at 1659.0m. Triple Induction, SP, Neutron Density, Compensated Sonic, Gamma Ray and XY Caliper logs were run from TD to surface casing. Microlog was run from TD to 1350m.

The **Sulphur Point Dolomite** is a microcrystalline to finely crystalline packstone to grainstone. The dolomite occurred on logs at 1451.0m. It was massive and 13.0m thick, conformably and sharply underlain by anhydrite of the Muskeg formation. Observation of samples saw common euhedral crystal growth. Grain size was cryptocrystalline 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 promising interval from 1458-1463m shows 15-24% porosity on density logs. The samples were light brown to brown and saw common dark brown oil staining. They showed deep yellow fluorescence and a slow streaming watery to milky yellowish white cut, and a strong petroliferous odor. Induction log analysis showed up to 230ohms on the deep induction in this interval. Gas detector readings in this 1458-1463m interval peaked at 833 units over a baseline of 440 units. **The Sulphur Point Dolomite appears to have potential for oil production.**

The **Keg River** was picked in samples at 1562.5m which was confirmed on logs. It is a massive, clean dolomite packstone to grainstone, 68.5m thick, resting conformably under the overlying Muskeg anhydrites. The Keg River is tan to brown, becoming more brown downsection, with common dark brown oil staining. Grain size is microcrystalline to fine crystalline, and shows poor to fair vug porosity, poor to fair intercrystalline porosity, and shows some good grain relief with micro druze to clear euhedral dolomite rhombs along cutting surfaces, suggesting vug and/or fracture porosity. This was confirmed by density logs and over the most porous upper interval of 1562.5-1575m, the sucrosic, granular dolomite shows 6-10% porosity. It is slightly bituminous, and has a brittle to firm texture, with scattered dolomitized fossil remains. There was a weak hydrocarbon odor in sample, with very dull gold fluorescence, and a weak green cut. Deep induction logs show over 2000ohms. Gas detector readings peak at 640units over a baseline of 350units over the 1571-1573m interval. **The Keg River does not appear to have production potential at this location.**

Para et al Cameron O-19 was cased for production as an oil well from the Sulphur Point Dolomite.

Well Data Summary

OPERATOR	Paramount Resources Ltd.
WELL NAME	Para et al Cameron O-19
LOCATION	Unit O Section 19
	Grid Area: Lat 60° 10' N Long 117° 30' W
UWI	300O196010117300
POOL	Undefined
FIELD	Cameron Hills
PROVINCE	Northwest Territories
LICENCE NUMBER	2005
CLASSIFICATION	Production
A.F.E. NUMBER	03N410024
SURFACE COORDINATES	Latitude: 60° 08' 46.858" North
	Longitude: 117° 32' 40.281" West
ELEVATIONS	KB: 797.98m
	GL: 793.38m
TOTAL DEPTH	Driller: 1659.0m (-861.0m SubSea)
	Logger: 1659.0m (-861.0m SubSea)
DRILLING CONTRACTOR	Precision Drilling Rig #247
ENGINEER	Brian Neigum 403-997-5286 or 548-0813
GEOLOGIST	Brad Powell, B.Sc. 403-861-0838
SPUD DATE	January 13, 2004 @ 13:45
COMPLETED DRILLING	January 23, 2004 @ 11:40
RIG RELEASE	January 25, 2004 @ 23:59

Well Data Summary

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

CASING Surface: 219.1mm, 35.70 kg/m set @ 434.0m
Production: 139.7mm, 20.83 kg/m set @ 1659.0m

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

DSTs none

CORES none

SAMPLES

Operator:	1 set vials (@ 5m) over interval:	1350m - TD
NEB:	2 sets vials (@ 5m) over interval:	1350m - TD
	1 set bags (@ 5m) over interval:	1350m - TD
	1 set geochem jars (@ 10m) over interval:	440m – TD

MUD RECORD

0-434m	Gelchem
434-1300m	Floc Water
1300-TD	Gelchem

DIRECTIONS From High Level, Alberta, go north on Highway 35. 1.3km south of Indian Cabins, turn west onto main road and go 32.5km, staying right at all Y forks. Turn right up big hill, drive 22km, following rig signs.

PROBLEMS

On Surface Hole: None.

On Main Hole: Due to lost circulation in the Wabamun formation, it was necessary to plug the well back over this interval, and then re-drill through the cement.

Logging Summary

Date: January 24, 2004

Logging Company: Precision Wireline Engineer: Stacy Wight

Mud Properties: WT: 1140 kg/m3 Visc: 76 s/L WL: 9.5 pH: 10.5

Hole Size: 200mm

Surface Casing: 219.1mm, 35.7kg/m, set @ 434.0m

Depths: Driller: 1659.0m Strap: no Logger: 1659.0m

Logging Times: First Alerted: 12:00 January 21, 2004

Time Required: 22:00 January 23, 2004 (11.0hr final notice)

Arrived: 22:30 January 23, 2004

Rig Up: 23:00 January 23, 2004
Rig Out: 09:30 January 24, 2004 (10.5hr rig time)

Hole Condition: Good

Circulations: 2.0hr after TD then 2.0hrs after wiper trip

Wiper Trips: TD to 500m

LOGGING SEQUENCE

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

Interval: TD to surface casing (with MRT from TD to top of Slave Point)

Run #2: BCS / XY CAL / GR

Interval: TD to surface casing

REMARKS: No problems getting logging tools to bottom for Run #1. On bottom with Run #1 @ 01:36 January 24, 2004. Run #2 no problems.

Bit Record & Casing Summary

Bit Record

Bit #	Make	Type	Size	In (m)	Out (m)	Meters (m)	Hours	ROP (m/hr)	CONDITION
1A	Varel		311mm	0	141	141	8.25	17.09	6 – 4 – WT – 1mm - PR
2A	Hughes	TXC625	311mm	141	342	201	11.00	18.27	4 – 4 – WT – 1mm - PR
3A	Hughes	MXC1	311mm	342	434	92	4.75	19.37	3 – 3 – WT – 1mm - TD
1	Varel	MKS-55	200mm	434	768	334	17.75	18.82	1 – 2 – 99%
1RR	Varel	MKS-55	200mm	768	1585	817	55.25	14.79	chipped cutters 85%
2	Varel	CH34	200mm	1585	1659	74	22.25	3.33	1 – 2 - IN

Casing Summary

Type	Casing Size	Hole Size	Landed	Total Joints	Remarks
Surface	219.1mm	311mm	434.0m	33	33 joints of 219.1mm 35.72kg/m, J-55, new Ipsco casing ran. Cemented with Sanjel 33t of 0:1:0 Class G + 2% CaCl2. Approximately 5.0m3 of good returns, float OK, plug down @ 15:28 January 15, 2004.
Production	139.7mm	200mm	1659m	125	125 joints of 139.7mm 23.07kg/m, J-55, 8RD ST&C new casing ran. Cemented with Sanjel with 30.5t Thixlite with 1% SMS for lead. Tail cement 8.73t Expandomix LWL with 0.1% CFL-3 and 0.2% LTR and 0.2% SPC-11. 12m3 good returns. Plug down 10:00 on January 25, 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

THIS WELL IS A VERTICAL WELL

30	misrun
40	0.25
75	0.50
95	0.50
122	0.75
149	1.00
177	1.50
197	1.00
224	0.25
243	1.00
272	0.25
300	1.50
319	1.25
351	0.50
380	1.00
409	1.25
426	0.75
525	1.00
629	0.75
706	1.00
851	0.25
947	0.25
1044	0.50
1150	0.50
1256	0.25
1355	0.50
1459	0.75
1605	1.00

Daily Drilling Summary

Date	Depth	Progress	Operations
			*** note that operations are as reported from 00:00 to 23:59 on the date shown**
Jan 12	0	0	Crews arrived, rig up steam, and start up rig. Wait on licence.
Jan 13	141	141	Wait on licence. Rig service. Nipple up diverter, function test. Test accumulator and related BOP equipment. Pre-spud inspection. Spud well January 13, 2004 @ 13:45. Drill 311mm surface hole with Bit #1A with surveys and required rig service to 141m. Circulate hole clean. POOH for bit trip.
Jan 14	419	278	RIH with Bit #2A. Drill 311mm surface hole with required surveys and rig service from 141m to 341m. Circulate, POOH for bit trip. RIH with Bit #3A and drill ahead to 419m.
Jan 15	434	15	Wiper trip, circulate. Drill to surface casing point at 434m. POOH to run casing. Rig for and run 33 joints 219.1mm surface casing. Cement with Sanjel. WOC. Weld on bowl, nipple up BOPs.
Jan 16	662	228	Pressure test related equipment. Make up BHA with Bit #1 and RIH. Drill out shoe, leak off test, rig service and safety meeting. Drill out @ 14:00 Drill ahead 200mm main hole with required rig service and surveys from 434m to 662m.
Jan 17	768	106	Lost circulation @ 662m. Drill ahead with losses then lost circulation again. Drill ahead with losses to 768m. Wiper trip, strap pipe.
Jan 18	768	0	Run 4 plugs with Sanjel.
Jan 19	1162	394	Make up BHA with Bit #1RR. RIH, tag cement at 552m, drill out plug to 768m. Drill ahead 200mm main hole with directional surveys and required rig service from 768m to 1162m.

Daily Drilling Summary

Jan 20	1470	308	Drill ahead 200mm main hole with Bit #1RR with surveys and required rig service from 1162m to 1470m.
Jan 21	1576	106	Drill ahead 200mm main hole with Bit #1RR with surveys and required rig service from 1470m to 1576m.
Jan 22	1629	53	Drill ahead 200mm main hole with Bit #1RR with surveys and required rig service from 1576m to 1585m. Circulate up sample. Circulate hole clean and POOH with strap for bit trip. Make up new BHA with Bit #2. RIH. Drill ahead 200mm main hole from 1585m to 1629m.
Jan 23	1659	30	Drill ahead 200mm main hole from 1629m to 1659m. Total Depth January 23, 2004 @ 11:40. Circulate up sample, strap out of hole, strap in hole, circulate 2 hours to condition hole to log. POOH to log. Rig up Precision Wireline.
Jan 24	1659	0	Log Run #1. Rig out tools, rig for Log Run #2. Log Run #2. Rig out loggers. RIH to condition hole for casing. Circulate. POOH sideways.
Jan 25	1659	0	Run 125 joints 139.7mm production casing. Circulate casing. Rig for cementers. Cement hole with Sanjel. WOC. Nipple down, strip mud, tear out for rig move. Rig release 23:59 January 25, 2004.

Formation Tops

Kelly Bushing Elevation: **797.98m**

Formation	Sample (m)	Logger (m)	Elevation (m)
Wabamun	578.5	578.0	+220.0
Fort Simpson	773.5	763.0	+ 35.0
Slave Point	1388.8	1388.8	- 590.8
F4 Marker	1429.4	1429.0	- 631.0
Watt Mountain	1437.5	1442.0	- 644.0
Sulphur Point LS	1441.5	1444.0	- 646.0
Sulphur Point DOL **	1447.5	1451.0	- 653.0
Muskeg	1463.0	1463.0	- 665.0
Keg River *	1562.5	1562.5	- 764.5
Chinchaga	1631.0	1631.0	- 833.0
Total Depth	1659.0	1659.0	- 861.0

***Primary Zones of Interest*
** Secondary Zones of Interest*

1345-1365 SHALE 80%, medium gray, gray to slightly green gray, calcareous, dull to micromicaceous in part, platy to blocky, sub fissile to firm, smooth to waxy texture in part, trace pyrite, LIMESTONE 20%, off white to light gray, cryptocrystalline to predominantly microcrystalline, argillaceous mudstone, lumpy, local disseminated pyrite, tight, no show

1365-1370 SHALE 60%, medium gray, gray to slightly greenish gray, calcareous, dull to micromicaceous in part, platy to blocky, sub fissile to firm, smooth to waxy texture in part, trace pyrite, LIMESTONE 40%, off white to light gray, cryptocrystalline to predominantly microcrystalline, argillaceous mudstone, lumpy, local disseminated pyrite, tight, no show

1370-1380 SHALE 70%, as above, LIMESTONE 30%, as above

1380-1388.8 SHALE 50%, medium gray, gray to slightly greenish gray, calcareous, dull to micromicaceous in part, platy to blocky, sub fissile to firm, smooth to waxy texture in part, trace pyrite, LIMESTONE 50%, becoming more dark gray, off white to gray, cryptocrystalline to predominantly microcrystalline, argillaceous mudstone, lumpy, local disseminated pyrite, tight, no show

SLAVE POINT @ 1388.8m

1388.8-1395 LIMESTONE 100%, cream to light brown, brown, in part mottled, predominantly cryptocrystalline to microcrystalline, occasionally very fine crystalline, 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, slight petroliferous odor, pale yellow to yellow fluorescence, watery greenish yellow cut

1395-1400 LIMESTONE 100%, tan to brown, spotty brown oil stain, mudstone to packstone, microcrystalline to very fine crystalline, common very fine to fine floating limestone crystals in argillaceous matrix, chalky in part, lumpy to blocky, scattered pyrite nods and locally disseminated crystals, scattered poor moldic porosity, assumed poor earthy porosity, silt petroliferous odor, common bright yellow fluor, weak green watery cut

1400-1405 LIMESTONE 100%, cream to tan, scattered light brown, becoming lighter and tighter, mudstone to wackestone, predominantly cryptocrystalline to microcrystalline, chalky in part, argillaceous, lumpy, tight, trace pyrite, pale yellow to yellow fluorescence, weak green watery cut

1405-1420 LIMESTONE 100%, cream to tan to light gray tan, scattered brown, argillaceous mudstone, cryptocrystalline to microcrystalline, flaky to lumpy, chalky texture in part, tight, spot pale yellow to yellow fluorescence, weak watery green cut

1420-1425 LIMESTONE 100%, becoming more gray, cream to tan to light gray tan, scattered brown, mottled, argillaceous mudstone, cryptocrystalline to microcrystalline, flaky to lumpy, chalky texture in part, tight, spot fluorescence, questionable cut

1425-1430 LIMESTONE 80%, essentially as above, DOLOMITE 20%, medium brown, microcrystalline to very fine crystalline, blocky, firm, tight

F4 MARKER @ 1429.4m

1430-1442.0 LIMESTONE 80%, cream to brown, gray, very mottled, mudstone to wackestone, microcrystalline to very fine crystalline, argillaceous, lumpy to blocky, anhydritic, dolomitic in part, tight, yellow fluorescence, questionable cut, DOLOMITE 20%, medium brown, cryptocrystalline to microcrystalline, blocky, firm, tight, questionable show, minor ANHYDRITE, off white to tan, cryptocrystalline to microcrystalline, pearly lustre in part, amorphous

WATT MOUNTAIN @ 1442.0m

1442-1443.5 SHALE 100%, slightly greenish gray to mint green, dark emerald green, waxy, soft, in part calcareous, scattered disseminated pyrite and crystalline clusters, occasional dark gray to black SHALE

Sample Descriptions

SULPHUR POINT LIMESTONE @ 1443.5m

1443.5-1450 LIMESTONE 90%, predominantly off white to tan, light brown to dark brown, gray, cryptocrystalline to medium crystalline, mudstone to wackestone, brown rock fragments in white argillaceous lime matrix, in part pelletal, dolomitic in part, mottled, chalky, in part resinous, lumpy to blocky, scattered local pyrite crystals, tight with streaks of poor pinpoint porosity, assumed minor earthy porosity, very spotty yellow fluorescence, no show, SHALE 10%, dark gray to black, splintery, fissile, (cavings?)

SULPHUR POINT DOLOMITE @ 1450.0m

1450-1455 DOLOMITE 100%, light brown to brown, patchy dark brown oil stain, microcrystalline to fine crystalline packstone to grainstone, streaks of fair pinpoint/vug porosity, poor to fair intercrystalline porosity, scattered sparry calcite, in part sandy appearance, slightly petroliferous odor, common yellow fluorescence, slow streaming milky yellow white cut

1355-1360 DOLOMITE 100%, essentially as above, becoming coarser, becoming darker brown, scattered calcite and clear dolomite crystalline, local micro sucrosic texture, even bright yellow fluorescence, slow streaming milky yellow white cut

1460-1463 DOLOMITE 100%, light brown to brown, dark brown oil stain, microcrystalline to fine crystalline packstone to grainstone, fair to good vug porosity, poor to fair intercrystalline porosity, sucrosic, clear euhedral dolomite crystalline growth along cutting edges suggests vug and/or fracture porosity, scattered sparry calcite, in part sandy appearance, strong petroliferous odor, common deep yellow to yellow fluorescence, slow streaming milky to watery yellow white cut

MUSKEG @ 1463.0m

1463-1465 DOLOMITE 50%, as above, ANHYDRITE 50%, pearly to watery lustre in part, white to off white, tan to brown, occasionally gray, cryptocrystalline to microcrystalline, amorphous in part, soft to firm, slightly dolomitic in part, dense, tight

Sample Descriptions

1465-1480 ANHYDRITE 60%, white amorphous nodules, off white to tan, occasional light gray brown, pearly to watery lustre, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 30%, buff to light brown, trace spot dark brown oil stain, microcrystalline to very fine crystalline in part argillaceous grainstone, occasionally sucrosic, anhydritic in part, streaky poor intercrystalline porosity, pale yellow fluorescence, no show

1480-1485 ANHYDRITE 70%, white amorphous nodules, off white to tan, occasional light gray brown, pearly to watery lustre, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 30%, buff to light brown, trace spotty dark brown oil stain, microcrystalline to very fine crystalline in part argillaceous grainstone, occasionally sucrosic euhedral crystalline growth, anhydritic in part, streaky poor intercrystalline porosity, occasional poor vug porosity, pale yellow fluorescence, no show

1485-1490 ANHYDRITE 90%, translucent appearance, scattered pyrite, DOLOMITE 10%, as above

1490-1500 ANHYDRITE 70%, pearly white amorphous nodules to tan to light gray translucent cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 30%, buff to light brown, occasional brown oil stain, microcrystalline to very fine crystalline argillaceous grainstone, in part sucrosic, euhedral crystals, occasional poor intercrystalline porosity, rare poor vug porosity, dull yellow fluorescence, weak watery green cut

1500-1510 ANHYDRITE 70%, pearly white amorphous nodules to tan to light gray translucent cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 30%, buff to light brown, occasional brown oil stain, microcrystalline to very fine crystalline argillaceous grainstone, in part sucrosic, euhedral crystals, occasional poor intercrystalline porosity, rare poor vug porosity, dull yellow fluorescence, questionable cut

1510-1515 ANHYDRITE 90%, as above, DOLOMITE 10%, as above

1515-1530 ANHYDRITE 80%, as above, translucent appearance, scattered pyrite, DOLOMITE 20%, as above

1530-1535 ANHYDRITE 30%, white to tan, occasional light gray to brown, pearly to watery lustre, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 70%, tan to light brown to spot dark brown oil stain, microcrystalline to very fine crystalline, sucrosic, sandy granular appearance in part, anhydritic in part, streaks of fair intercrystalline porosity, pale yellow fluorescence, questionable show

1535-1545 ANHYDRITE 70%, white to tan, occasional light gray, pearly, watery, translucent, amorphous, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 30%, tan to light brown, microcrystalline to very fine crystalline, grainstone, sucrosic, granular, streaky poor intercrystalline porosity, pale yellow fluorescence, no show

1545-1560 ANHYDRITE 90%, white to tan, occasional light gray, pearly, watery, translucent, amorphous, cryptocrystalline, slightly dolomitic in part, dense, tight, DOLOMITE 10%, tan to light brown, microcrystalline to very fine crystalline, grainstone, sucrosic, granular, streaky poor intercrystalline porosity, pale yellow fluorescence, no show

1560-1565 ANHYDRITE 100%, essentially as above, trace DOLOMITE

KEG RIVER @ 1562.5m

1565-1570 DOLOMITE 100%, tan to gray brown to brown, common dark brown oil stain, predominantly microcrystalline to very fine crystalline, scattered fine clear dolomite crystalline or rhomb clusters with good crystalline relief, packstone to grainstone, scattered fair vug porosity, streaks of fair intercrystalline porosity, sucrosic in part, local anhydrite and calcite infill, sandy appearance in part, brittle to firm, hydrocarbon odor in sample, spot pale yellow fluorescence, weak cut

1570-1575 DOLOMITE 100%, tan to brown, becoming more brown, common dark brown oil staining, microcrystalline to fine crystalline, packstone to grainstone, poor to fair vug porosity, poor to fair intercrystalline porosity, some good grain relief with micro druze to clear euhedral dolomite rhombs

along cutting surfaces suggesting vug and/or fracture porosity, sucrosic, sandy appearance, slightly bituminous, brittle to firm, scattered dolomitized fossil remains, weak hydrocarbon odor in sample, very dull gold fluorescence, weak green cut

1575-1585 DOLOMITE 100%, essentially as above, slightly tighter, tan to brown, common dark brown oil stain, microcrystalline to fine crystalline, packstone to grainstone, poor to fair vug porosity, poor to fair intercrystalline porosity, trace sparry calcite, sucrosic, sandy appearance, slightly bituminous, brittle to firm, scattered dolomitized fossil remains, weak hydrocarbon odor in sample, very dull gold fluorescence, weak green cut

1585-1615 DOLOMITE 100%, tan to dark brown, microcrystalline to fine crystalline, packstone to grainstone, poor to fair vug porosity, poor to fair intercrystalline porosity, calcite infill and very fine clear dolomite crystals and occasional bitumen lining cutting surfaces suggests fracture and/or vug porosity, trace sparry calcite, sucrosic, sandy appearance, slightly bituminous with trace black bituminous partings, brittle to firm, weak hydrocarbon odor in sample, very dull gold fluorescence, weak green cut

1615-1625 DOLOMITE 100%, tan to brown, common dark brown oil stain, predominantly microcrystalline to fine crystalline, local to medium crystalline, euhedral and subhedral crystal growth, packstone to grainstone, trace poor vug porosity, local fair sucrosic intercrystalline porosity, good grain relief, becoming tighter downsection, clear dolomite rhombs and sparry calcite, possible fracture porosity, silty to sandy appearance, trace calcite infill, slightly bituminous with black bitumen partings, brittle to firm, very dull gold fluorescence, weak green cut

1625-1630 DOLOMITE 100%, as above, becoming more gray, blocky

CHINCHAGA @ 1631.0m

1630-1635 DOLOMITE 100%, buff to light brown, cryptocrystalline to microcrystalline, predominantly mudstone to wackestone, blocky, very firm, in part anhydritic, silty to sandy appearance, occasional floating dolomite crystals, tight, no show, minor ANHYDRITE, white to tan, light gray, cryptoxln, firm

1635-1640 DOLOMITE 90%, as above, ANHYDRITE 10%, as above

1640-1645 DOLOMITE 80%, buff to light brown, cryptocrystalline to microcrystalline, predominantly mudstone to wackestone, blocky, very firm, in part anhydritic, silty to sandy appearance, occasional floating dolomite crystals, tight, no show, ANHYDRITE 20%, tan, light gray, cryptocrystalline, firm

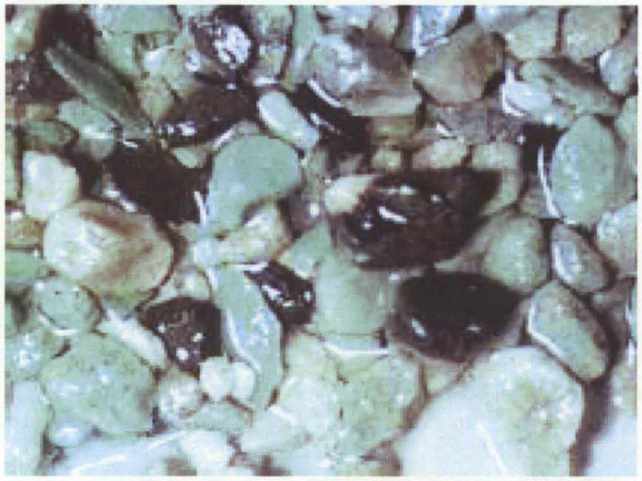
1645-1650 DOLOMITE 80%, becoming lighter, buff, occasional pyrite, ANHYDRITE 20%, tan, cryptocrystalline, lumpy, translucent, tight, minor clear to frosted free quartz grains

1650-1655 DOLOMITE 40%, as above, ANHYDRITE 20%, as above, SANDSTONE 40%, clear to frosted "clean" quartz sand, fine lower to very coarse upper grained, poor sorted, sub angular to sub rounded, occasional dolomitic cement, fine intergranular porosity, no show

1655-1659 SANDSTONE 50%, as above, DOLOMITE 30%, as above, ANHYDRITE 20%, as above

TOTAL DEPTH @ 1659.0m

700m, Wabamun, 20X



790m, Fort Simpson, 20X

1350m, Fort Simpson, 20X

1392.5m, Slave Point, 20X

1440m, Anhydrite below F4

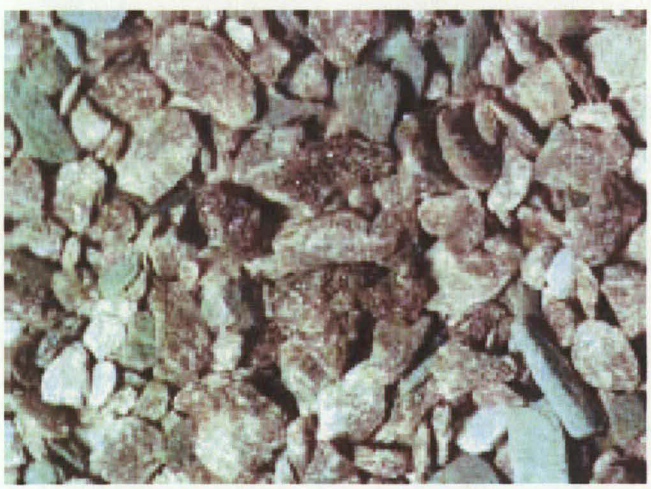
1445m, Sulphur Point LS, 20X

1445m, Watt Mountain, 20X

1460m, Sulphur Point DOL, 20X

1460m, Sulphur Point DOL porosity, 60X

1480m, Muskeg anhydrite, 20X



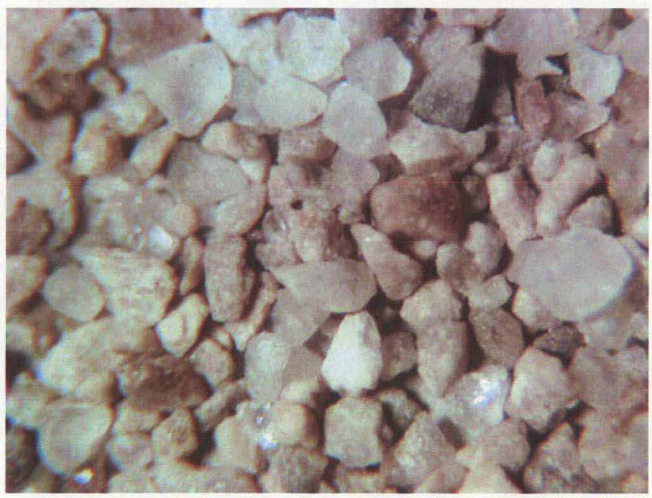
1575m, Keg River dolomite xls, 20X

1575m, Keg River dolomite xls, 60X

1590m, Keg River, clr infill rhombs, 60X

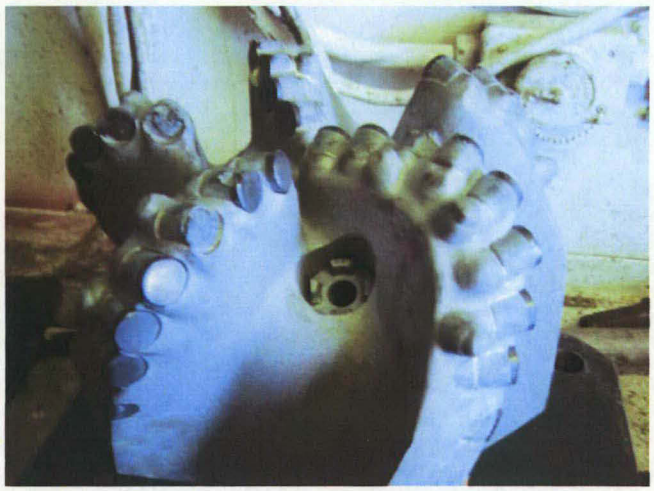
1620m, Keg River sucrosic dolomite

1640m, Chinchaga tight dolomite, 20X



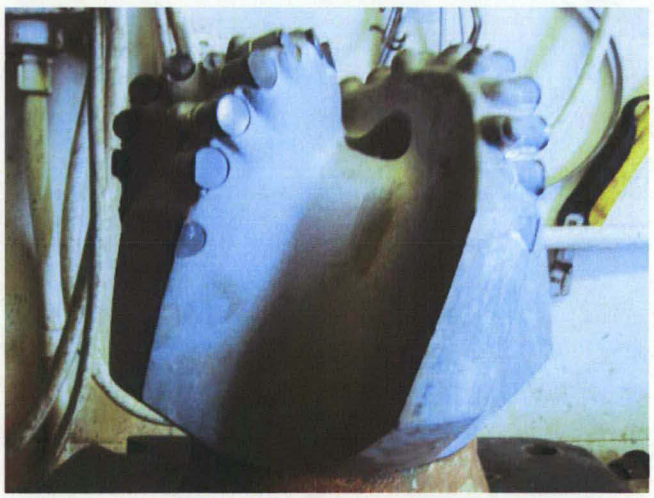
1655m, Clean quartz sand, 60X

PDC Bit #1, damaged



PDC Bit #1, damaged

PDC Bit #1, chipped cutters



PDC Bit #1, chipped cutters

Bleak Wintry Day

Spelling accuracy is not important

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

Well Name:	Para et al Cameron O-19
Location:	Unit O Section 19 Grid Area: Lat 60° 10' N Long 117° 30' W
Licence Number:	2005
Region:	Cameron Hills, NWT
Spud Date:	Jan 13, 2004 @ 13:15
Drilling Completed:	Jan 23, 2004 @ 11:40
Surface Coordinates:	Latitude: 60° 02' 23.831" North Longitude: 117° 29' 29.114" West
Bottom Hole Coordinates:	as surface
Ground Elevation (m):	793.38m
K.B. Elevation (m):	797.98m
Logged Interval (m):	1345m To: 1659m
Total Depth (m):	1659m
Formation:	Primary = Sulphur Point DOL Secondary = Keg River
Type of Drilling Fluid:	Gel Chemical

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: 66A New Streeet S.E.
Calgary, Alberta T2G 3X9
(403) 660-9883

Comments

This well was drilled by Precision Drilling Rig #247.
Paramount AFE #03N410024
A Wellsite Gas Detection gas detector was run.
Logging Program: Precision Wireline
Run #1: STI-SP-MRT-SPED-CNT-GR-CAL
Run #2: BHS-GR-CAL

ROCK TYPES

ACCESSORIES

MINERAL

- Anhy
- Arg
- Bent
- Bit
- Brecfrag
- Calc
- Carb
- Chtdk
- Chtlt
- Dol
- Feldspar
- Ferrpel
- Ferr
- Gyp
- Hvymin
- Kaol
- Marl
- Minxl
- Nodule
- Phos
- Pyr
- Salt
- Sandy
- Silt
- Sil
- Sulphur
- Tuff
- Quartz
- Mmica
- Micromica
- Glau

FOSSIL

- Algae
- Amph
- Belm
- Biocist
- Brach
- Bryozoa
- Cephal
- Coral
- Crin
- Echin
- Fish
- Foram
- Fossil
- Gastro
- Oolite
- Ostra
- Pelec
- Pellet
- Pisolite
- Plant
- Strom

STRINGER

- Anhy
- Arg
- Bent
- Coal
- Dol
- Gyp
- Ls
- Mrst
- Sltstrg
- Ssstrg

TEXTURE

- Boundst
- Chalky
- Cryxln
- Earthy
- Finexln
- Grainst
- Lithogr
- Microxln
- Mudst
- Packst
- Wackest

OTHER SYMBOLS

POROSITY

- Earthy
- Fenest
- Fracture
- Inter
- Moldic
- Organic
- Pinpoint
- Vuggy

SORTING

- Well
- Moderate
- Poor

ROUNDING

- Rounded
- Subrnd
- Subang
- Angular

OIL SHOW

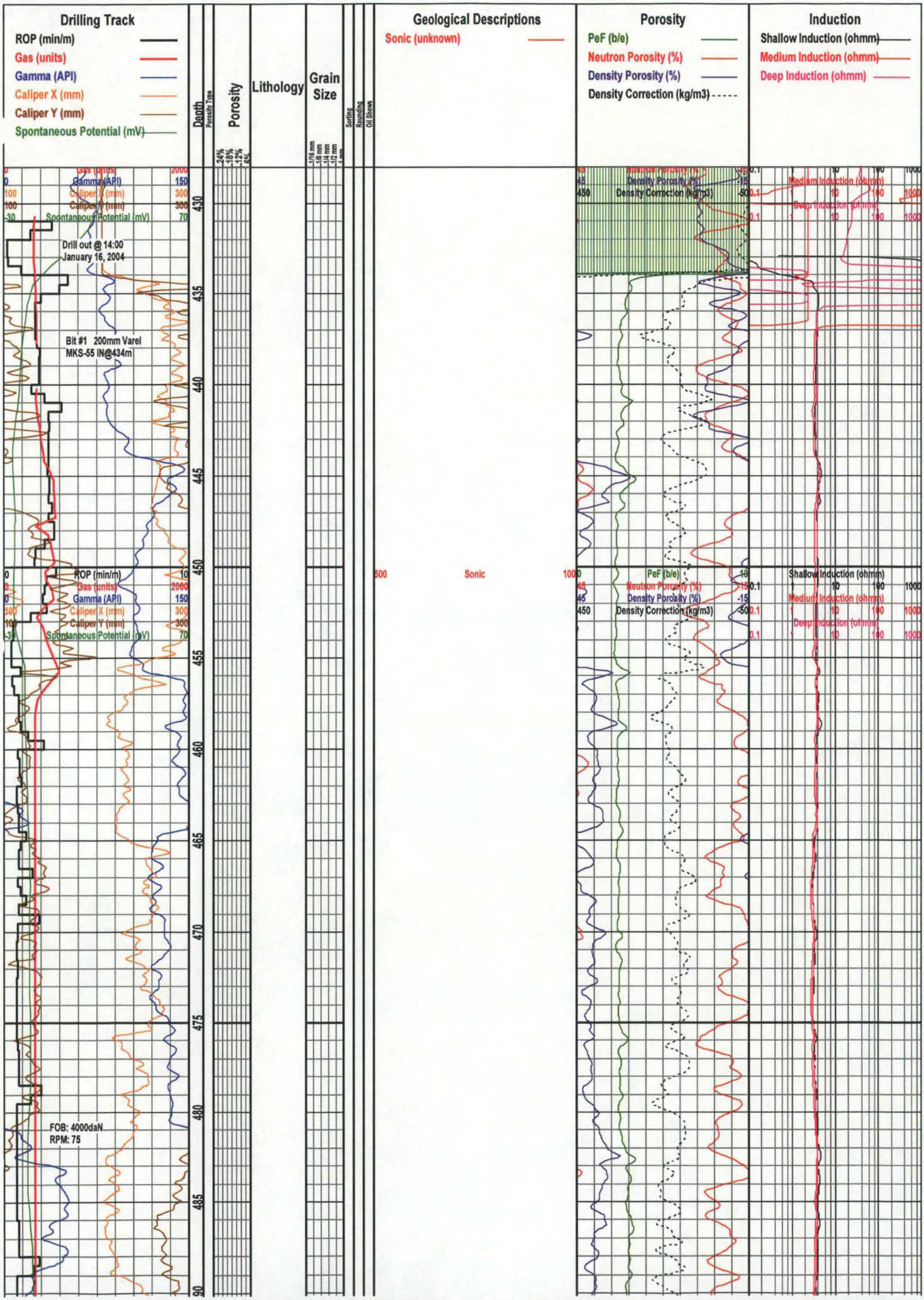
- Even
- Spotted
- Ques
- Dead

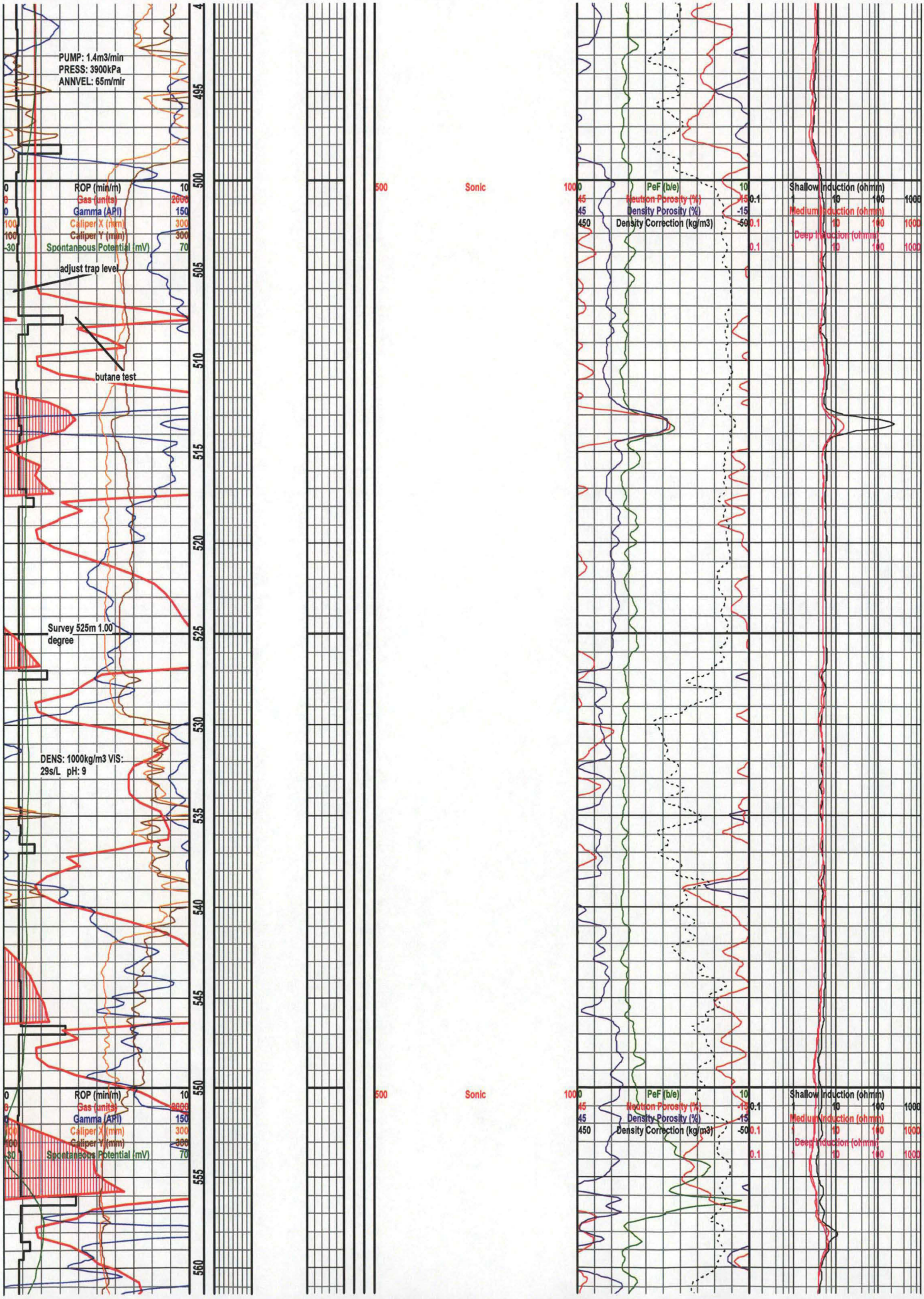
INTERVAL

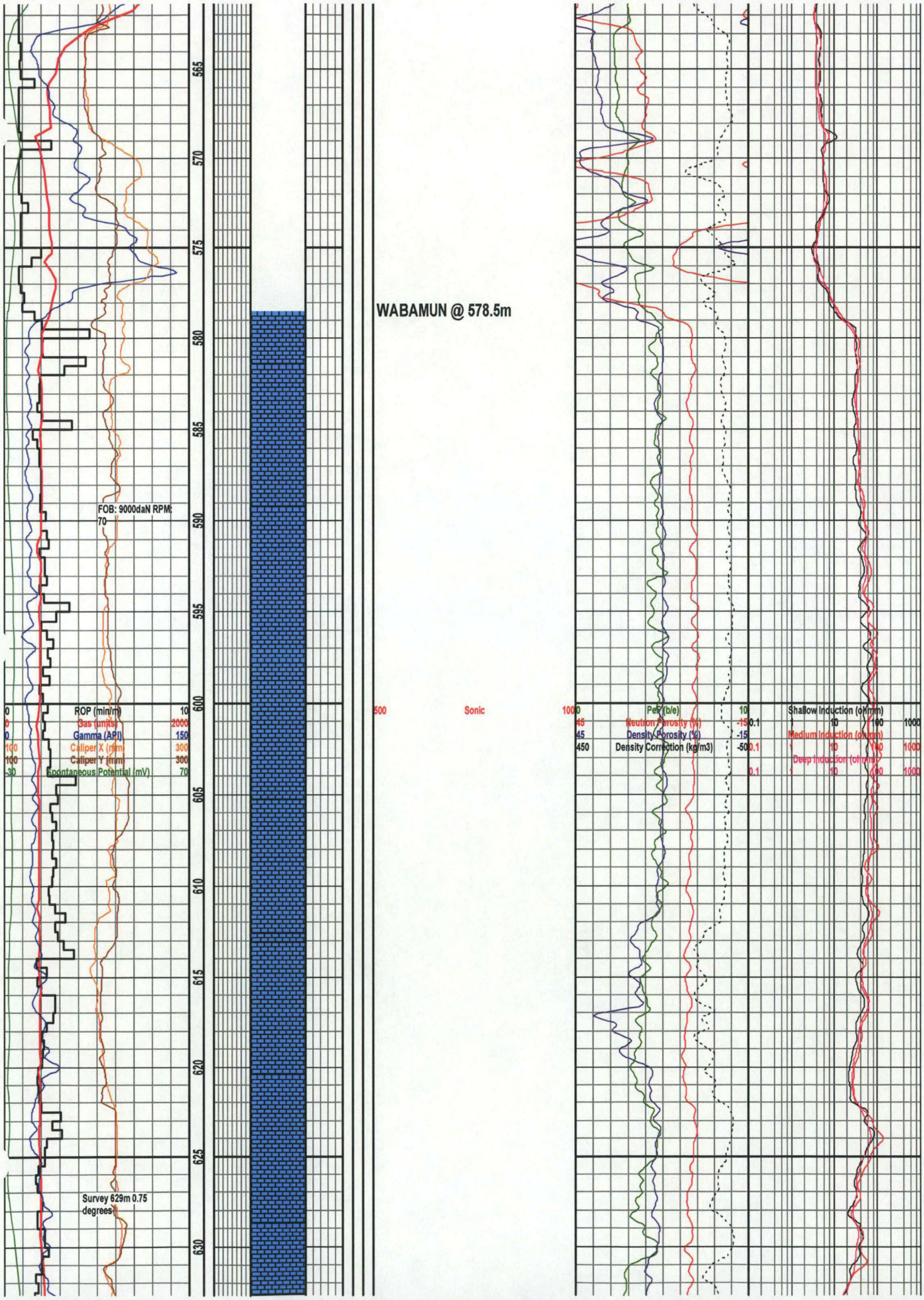
- Core
- Dst

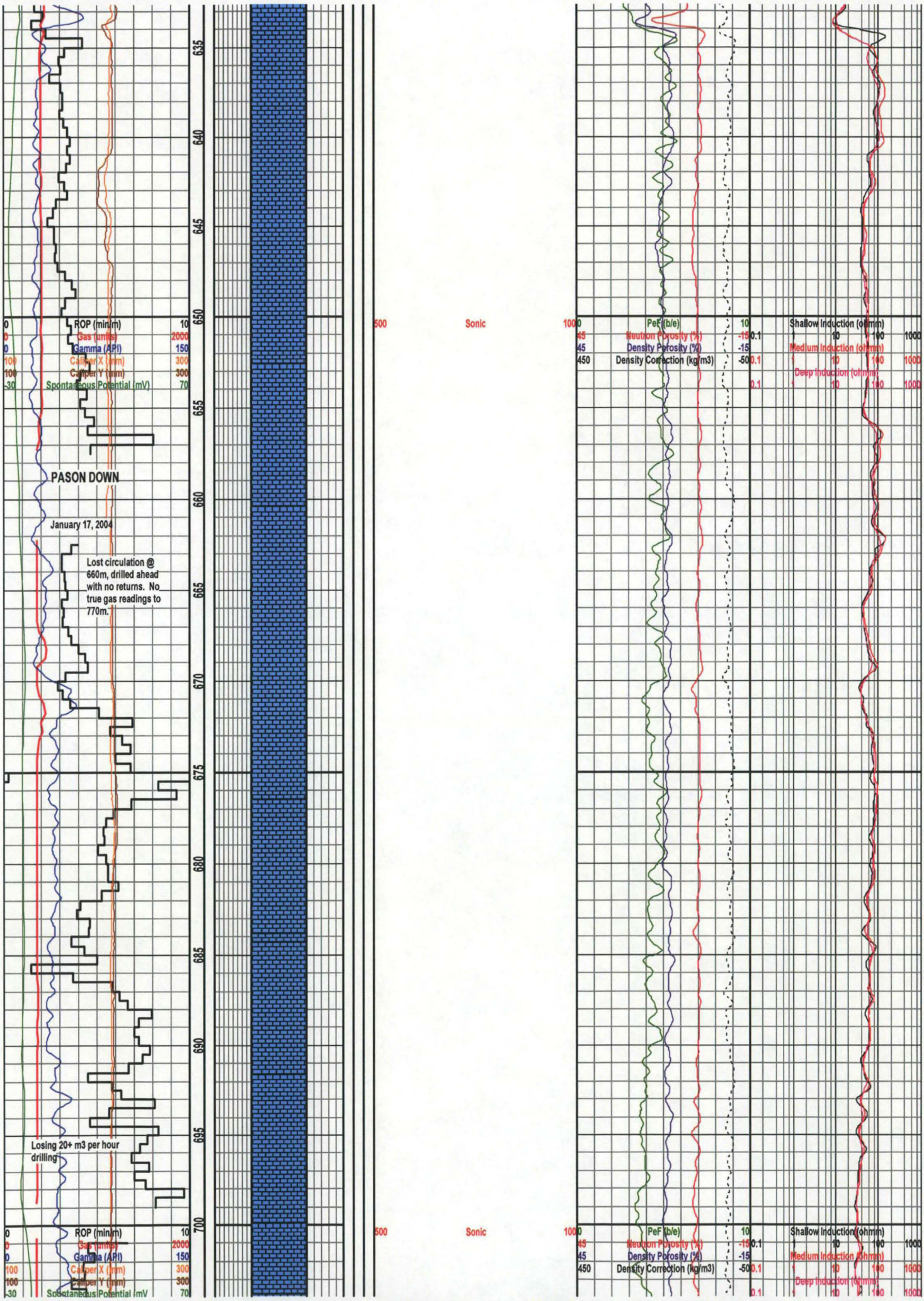
EVENT

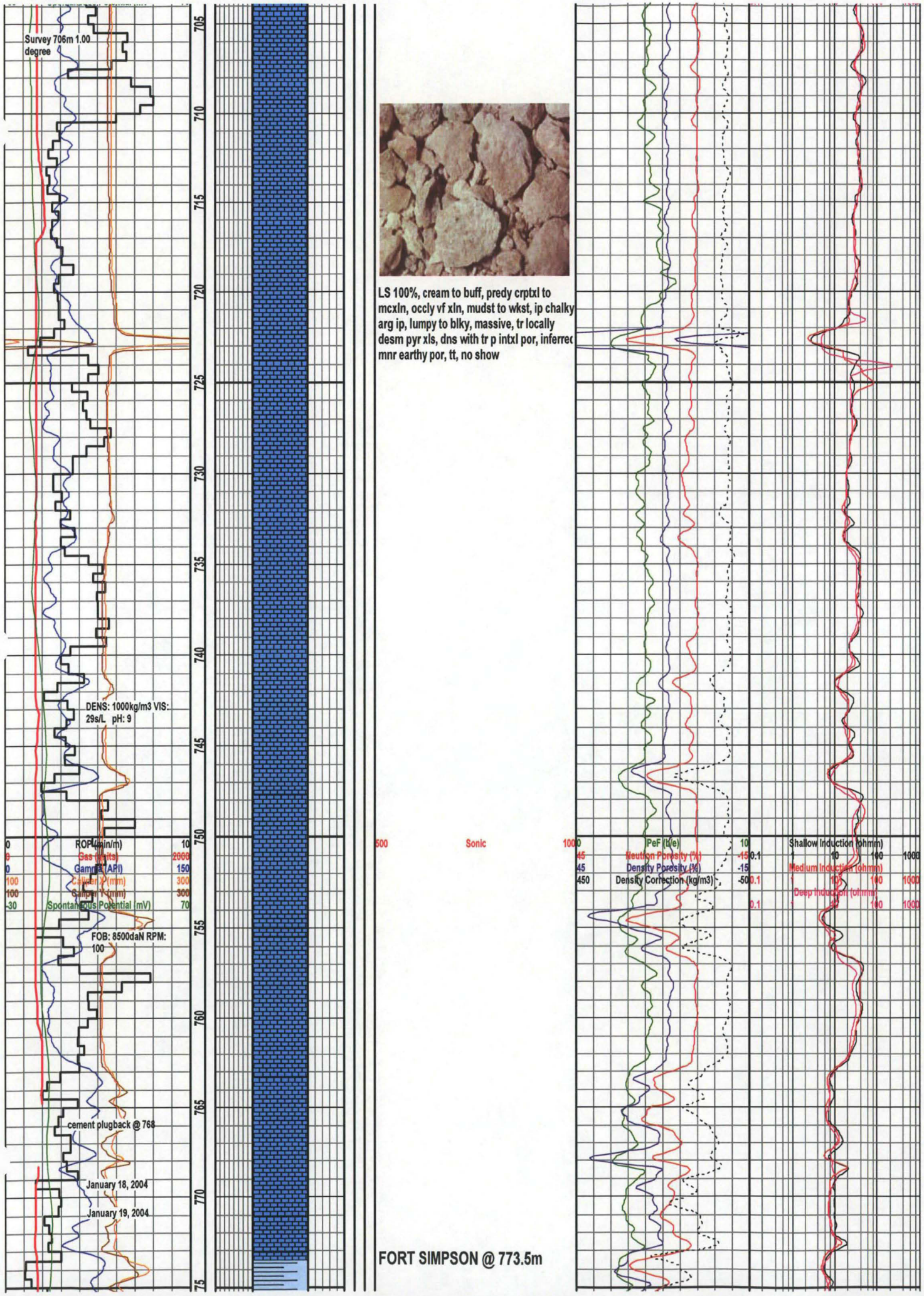
- Rft
- Sidewall


Drilling Track
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
Depth
Porosity
Porosity Type
24%
18%
12%
6%
Lithology
Grain Size
1/16 mm
1/8 mm
1/4 mm
1/2 mm
1 mm
Sorting
Rounding
Oil Shows
Geological Descriptions
Sonic (unknown)
Porosity
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Induction
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)
Drill out @ 14:00
January 16, 2004
Bit #1 200mm Varel
MKS-55 IN@434m
FOB: 4000daN
RPM: 75
Sonic
430
435
440
445
450
455
460
465
470
475
480
485
490


PUMP: 1.4m3/min
PRESS: 3900kPa
ANNVEL: 65m/mir
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
adjust trap level
butane test
Survey 525m 1.00 degree
DENS: 1000kg/m3 VIS: 29s/L pH: 9
Sonic
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)


WABAMUN @ 578.5m
FOB: 9000daN RPM:
70
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
Survey 629m 0.75
degrees
Sonic
Perf (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)


ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
PASON DOWN
January 17, 2004
Lost circulation @ 660m, drilled ahead with no returns. No true gas readings to 770m.
Losing 20+ m3 per hour drilling
Sonic
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)


Survey 706m 1.00 degree
DENS: 1000kg/m3 VIS: 29s/L pH: 9
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
FOB: 8500daN RPM: 100
cement plugback @ 768
January 18, 2004
January 19, 2004
Sonic
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)
LS 100%, cream to buff, predy crptxl to mcxln, occly vf xln, mudst to wkst, ip chalky arg ip, lumpy to blky, massive, tr locally desm pyr xls, dns with tr p intxl por, inferred mnr earthy por, tt, no show
FORT SIMPSON @ 773.5m

SH, gn gy to gn, dk gy, grdg to mudst, platy, fis, ip silty, smooth texture

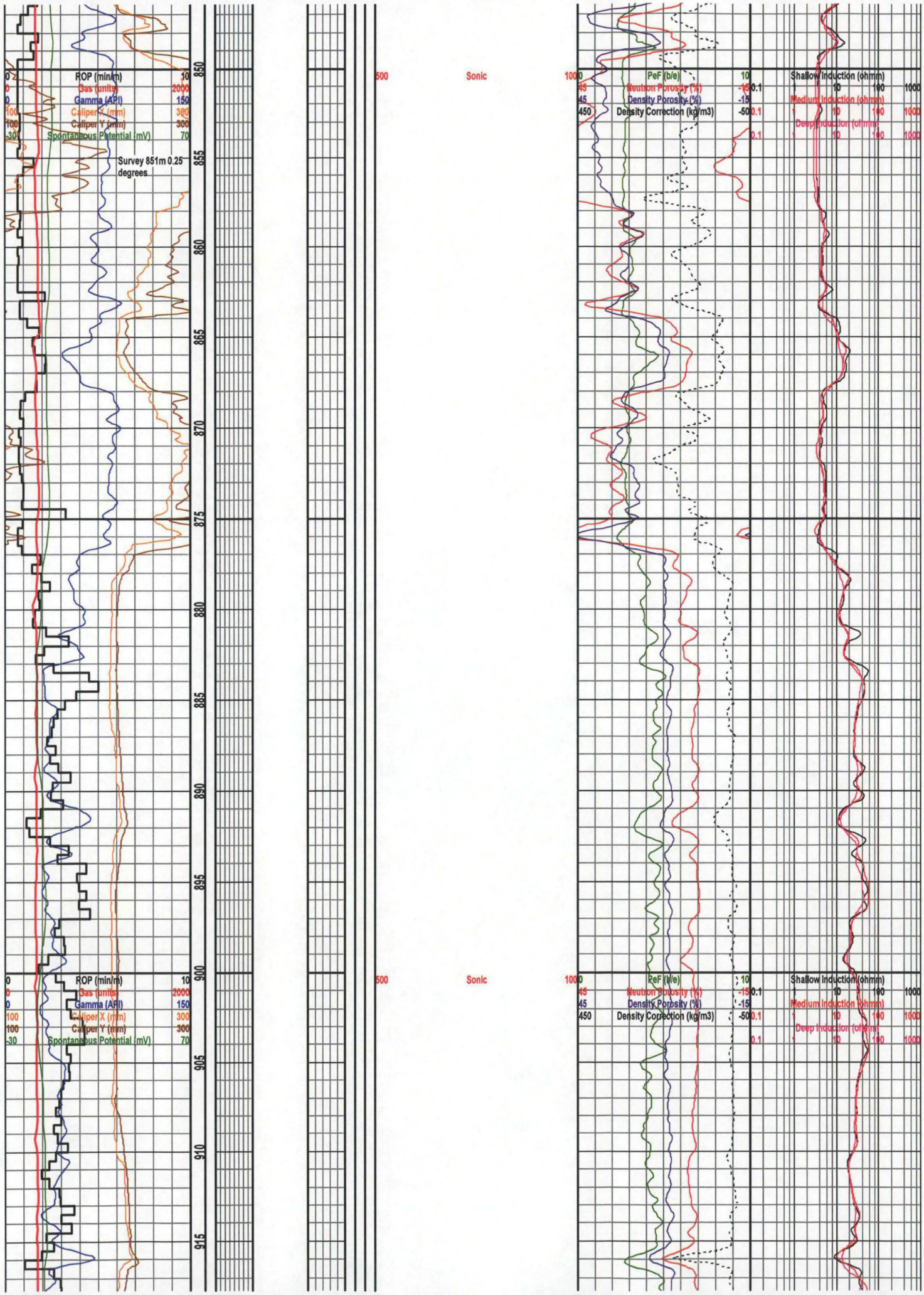
0	ROP (min/m)	10
0	Gas (units)	2000
0	Gamma (API)	150
100	Caliper X (mm)	300
100	Caliper Y (mm)	300
-30	Spontaneous Potential (mV)	70

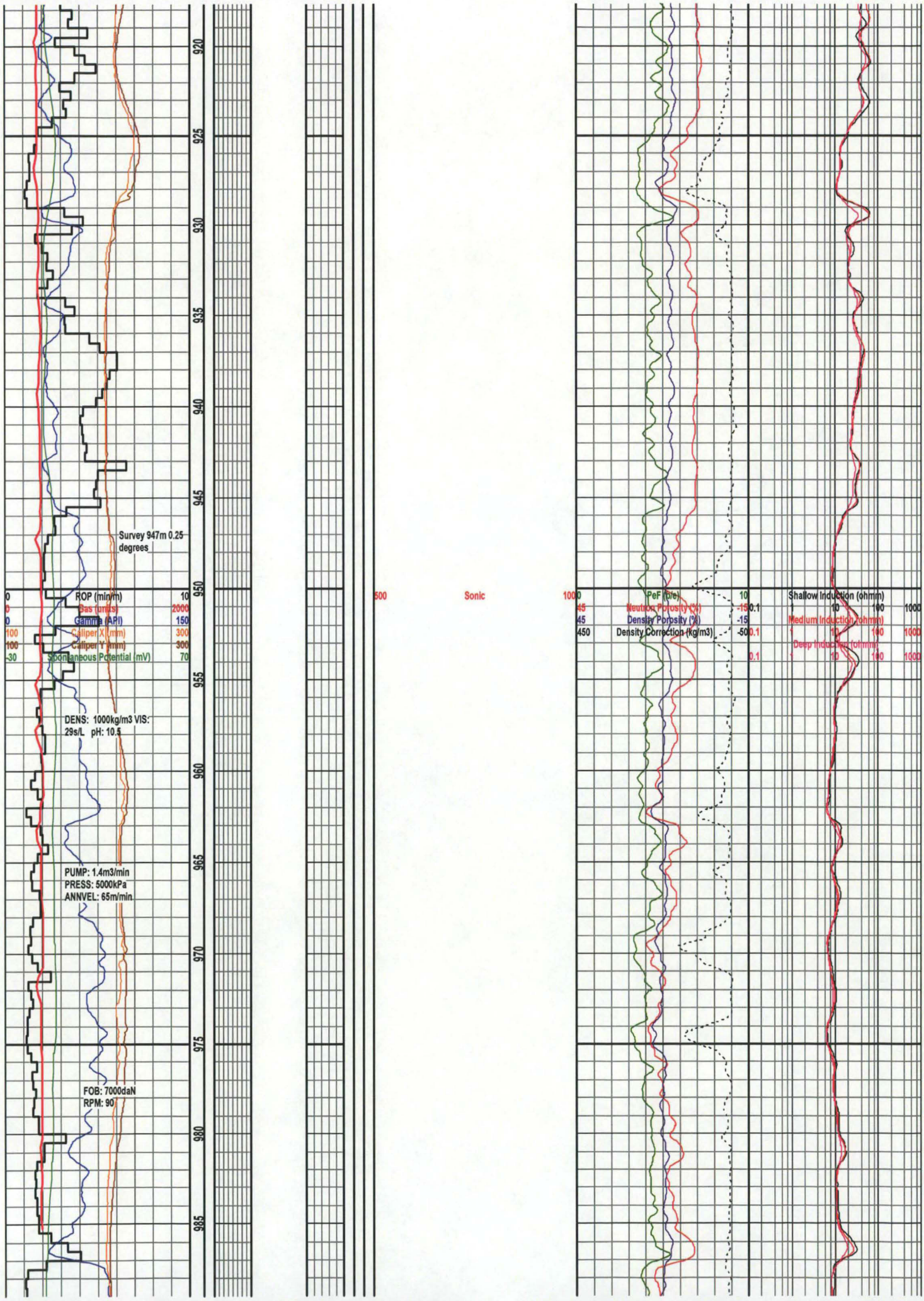
500 Sonic 1000

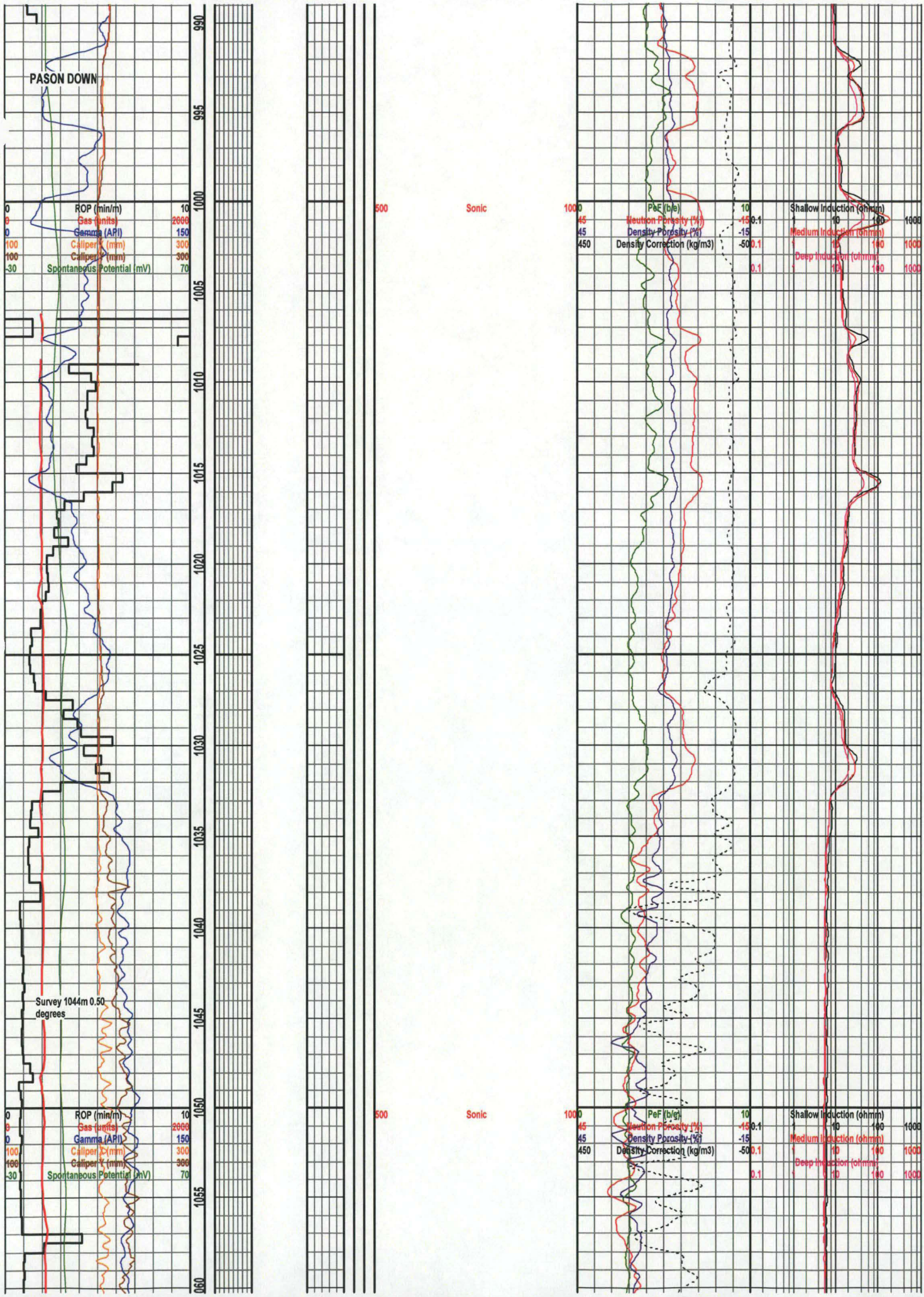
10	PeF (b/e)	0
45	Neutron Porosity (%)	-15
25	Density Porosity (%)	-15
450	Density Correction (kg/m3)	-500

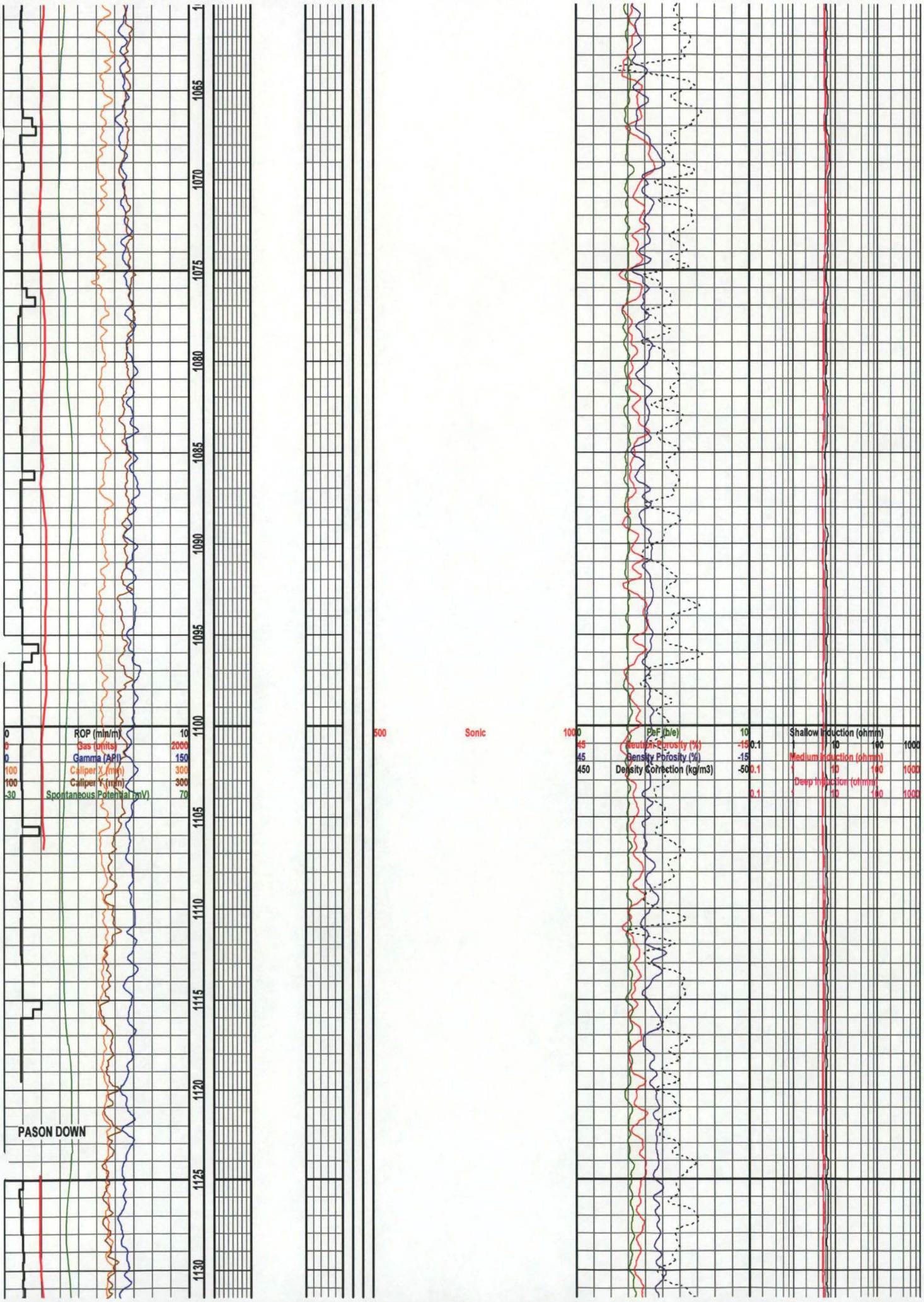
0.1	Shallow Induction (ohmm)	1000
0.1	Medium Induction (ohmm)	1000
0.1	Deep Induction (ohmm)	1000

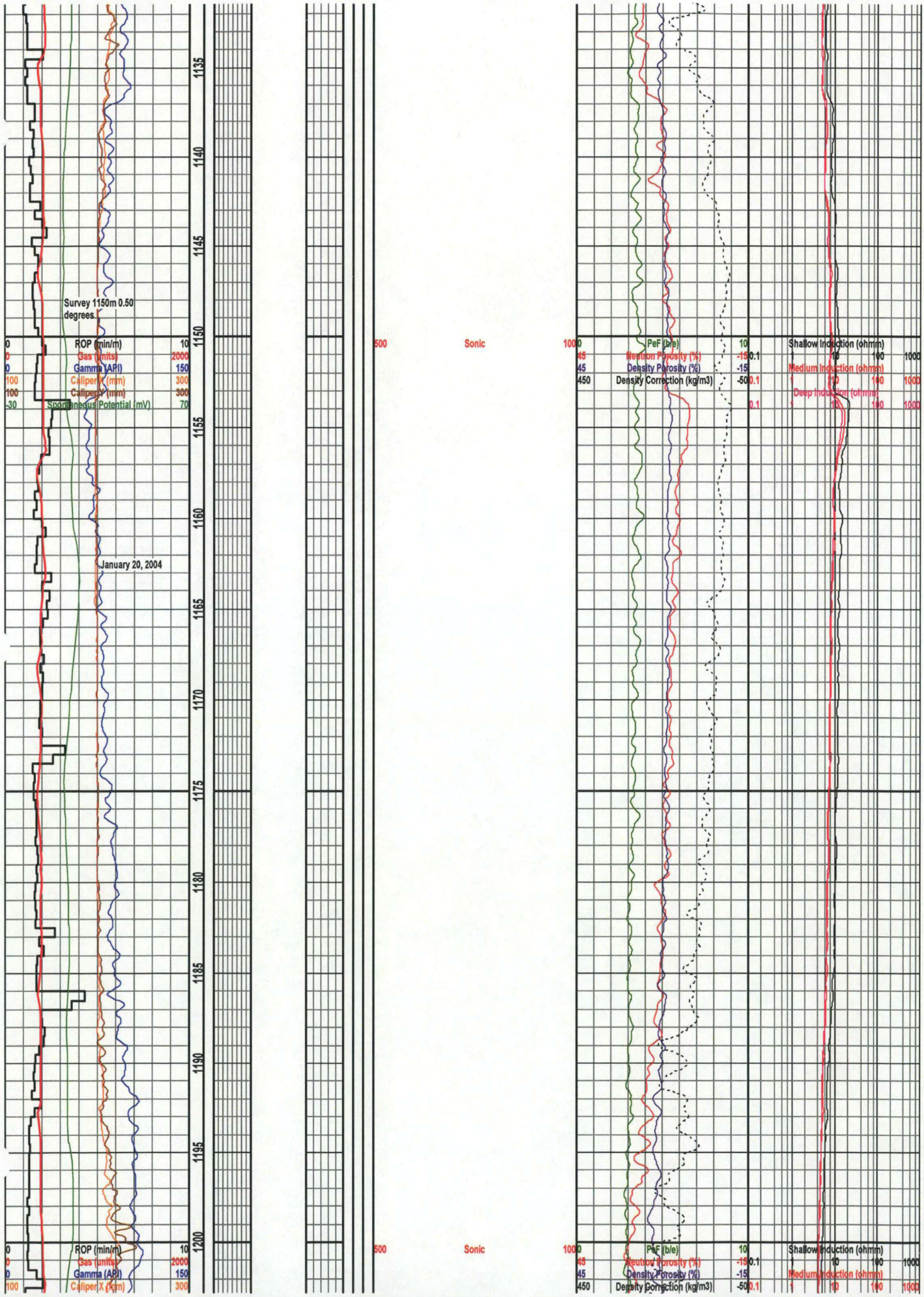
7 780 785 790 795 800 805 810 815 820 825 830 835 840 845

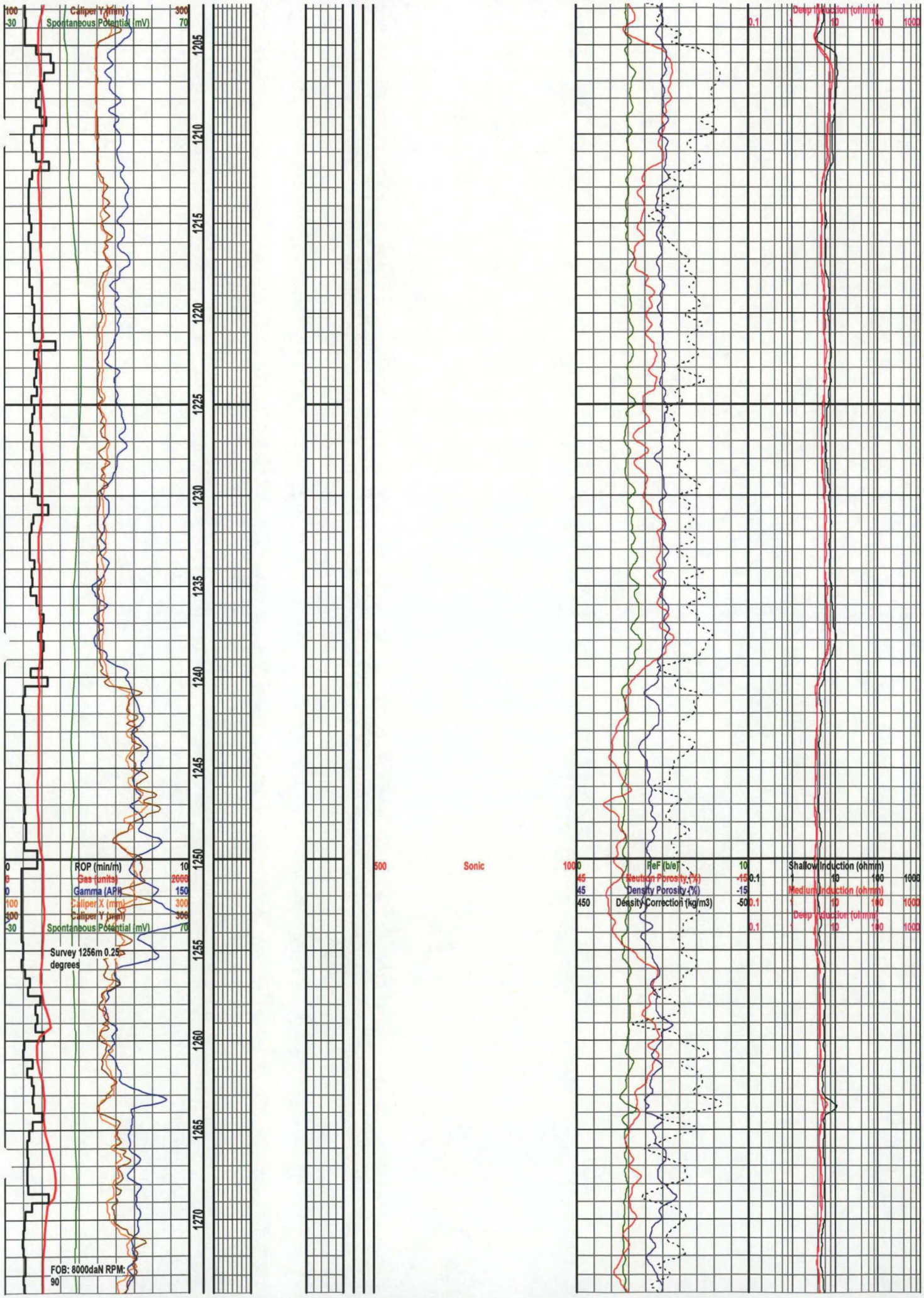

ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
Survey 851m 0.25 degrees
850
855
860
865
870
875
880
885
890
895
900
905
910
915
500
Sonic
1000
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)

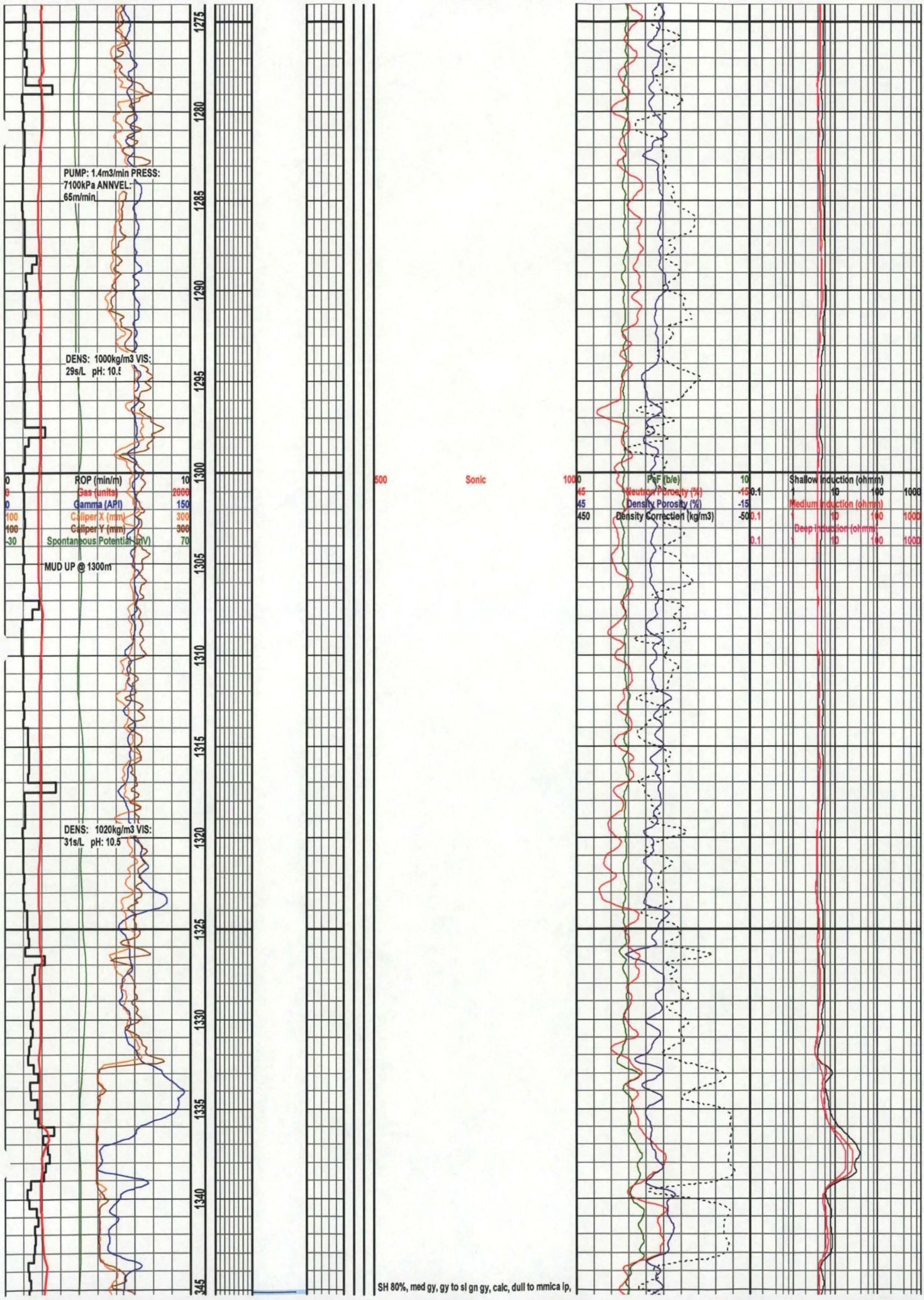

920
925
930
935
940
945
950
955
960
965
970
975
980
985
Survey 947m 0.25 degrees
0
ROP (min/m)
10
0
Bas (units)
2000
0
Gamma (API)
150
100
Caliper X (mm)
300
100
Caliper Y (mm)
300
-30
Spontaneous Potential (mV)
70
DENS: 1000kg/m3 VIS: 29s/L pH: 10.5
PUMP: 1.4m3/min
PRESS: 5000kPa
ANNVEL: 65m/min
FOB: 7000daN
RPM: 90
500
Sonic
1000
0
PeF (b/e)
10
45
Neutron Porosity (%)
-15
45
Density Porosity (%)
-15
450
Density Correction (kg/m3)
-50
0.1
Shallow Induction (ohmm)
1
10
100
1000
Medium Induction (ohmm)
1
10
100
1000
Deep Induction (ohmm)
0.1
1
10
100
1000


PASON DOWN
0 ROP (min/m) 10
0 Gas (units) 2000
0 Gamma (API) 150
100 Caliper X (mm) 300
100 Caliper Y (mm) 300
-30 Spontaneous Potential (mV) 70
990
995
1000
1005
1010
1015
1020
1025
1030
1035
1040
1045
1050
1055
1060
500 Sonic 1000
PeF (b/e) 10
45 Neutron Porosity (%) -15
45 Density Porosity (%) -15
450 Density Correction (kg/m3) -500
0.1
Shallow Induction (ohmm) 1000
Medium Induction (ohmm)
Deep Induction (ohmm)
Survey 1044m 0.50 degrees


0
ROP (min/m)
10
0
Gas (units)
2000
0
Gamma (API)
150
100
Caliper X (mm)
300
100
Caliper Y (mm)
300
-30
Spontaneous Potential (mV)
70
500
Sonic
1000
PeF (b/e)
10
45
Neutron Porosity (%)
-15
45
Density Porosity (%)
-15
450
Density Correction (kg/m3)
-500.1
0.1
Shallow Induction (ohmm)
1
10
100
1000
Medium Induction (ohmm)
1
10
100
1000
Deep Induction (ohmm)
0.1
1
10
100
1000
1065
1070
1075
1080
1085
1090
1095
1100
1105
1110
1115
1120
1125
1130
PASON DOWN


Survey 1150m 0.50 degrees
0
ROP (min/m)
10
0
Gas (units)
2000
0
Gamma (API)
150
100
Caliper X (mm)
300
100
Caliper Y (mm)
300
-30
Spontaneous Potential (mV)
70
January 20, 2004
1135
1140
1145
1150
1155
1160
1165
1170
1175
1180
1185
1190
1195
1200
500
Sonic
1000
PeF (b/e)
10
45
Neutron Porosity (%)
-15
45
Density Porosity (%)
-15
450
Density Correction (kg/m3)
-500
0.1
Shallow Induction (ohmm)
1
10
100
1000
Medium Induction (ohmm)
Deep Induction (ohmm)
0
ROP (min/m)
10
0
Gas (units)
2000
0
Gamma (API)
150
100
Caliper X (mm)
300
500
Sonic
1000
PeF (b/e)
10
45
Neutron Porosity (%)
-15
45
Density Porosity (%)
-15
450
Density Correction (kg/m3)
-500
0.1
Shallow Induction (ohmm)
1
10
100
1000
Medium Induction (ohmm)


100
-30
Caliper Y (mm)
Spontaneous Potential (mV)
300
70
1205
1210
1215
1220
1225
1230
1235
1240
1245
1250
1255
1260
1265
1270
0
8
0
100
100
-30
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
10
2000
150
300
300
70
Survey 1256m 0.25 degrees
FOB: 8000daN RPM: 90
500
Sonic
1000
45
45
450
RelF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
10
-15
-15
-50
0.1
Deep Induction (ohmm)
0.1
1
10
100
1000
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)


PUMP: 1.4m3/min PRESS:
7100kPa ANNVEL:
65m/min
DENS: 1000kg/m3 VIS:
29s/L pH: 10.5
DENS: 1020kg/m3 VIS:
31s/L pH: 10.5
MUD UP @ 1300m
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
Sonic
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)
SH 80%, med gy, gy to sl gn gy, calc, dull to mmica ip,

Sample point reached @ 07:35
January 20, 2004.

Scale Change

ROP (min/m) 0 20
Gas (units) 0 2000
Gamma (API) 0 150
Caliper X (mm) 100 300
Caliper Y (mm) 100 300
Spontaneous Potential (mV) -30 70

Survey 1355m 0.50 degrees

FOB: 7700daN
RPM: 70

butane test

unfreeze gas detector line

platy to blky, sub fis to frm, smooth to waxy tex ip, t pyr, LS 20%, off wh to lt gy, crptxl to predy mcxln, arg mudst, lumpy, local desm pyr, tt, no show

500 Sonic 1000

SH 60%, med gy, gy to sl gn gy, calc, dull to mmica ip, platy to blky, sub fis to frm, smooth to waxy tex ip, tr pyr, LS 40%, off wh to lt gy, crptxl to predy mcxln, arg mudst, lumpy, local desm pyr, tt, no show

SH 70%, aa, LS 30%, aa

SH 50%, med gy, gy to sl gn gy, calc, dull to mmica ip, platy to blky, sub fis to frm, smooth to waxy tex ip, tr pyr, LS 50%, becoming more dk gy, off wh to gy, crptxl to predy mcxln, arg mudst, lumpy, local desm pyr, tt, no show

SLAVE POINT @ 1388.8m

LS 100%, cream to lt brn, brn, ip mottled, predy crptxl t mcxln, occly vf xln, mudst to wkst, ip chalky, arg ip, flaky to blky, scat pyr nod and locally desm pyr xls, dns with tr p intxl por, inferred mnr earthy por, tt, slight petf odor, pale yel to yel fl, watery grn yel cut

LS 100%, tan to brn, spot brn oil stn, mudst to pckst, mcxln to vf xl, com vf to f floating ls xls in arg mtx, chalky ip, lumpy to blky, scat pyr nods and locally desi xls, scat p moldic por, assumed p earthy por, slt petf odor, com brt yel flor, wk gn watery cut

500 Sonic 1000

LS 100%, cream to tan, scat lt brn, becoming lighter an tighter, mudst to wkst, predy crptxl to mxcln, chalky ip, arg, lumpy, tt, tr pyr, pale yel to yel flor, wk gn watery cut

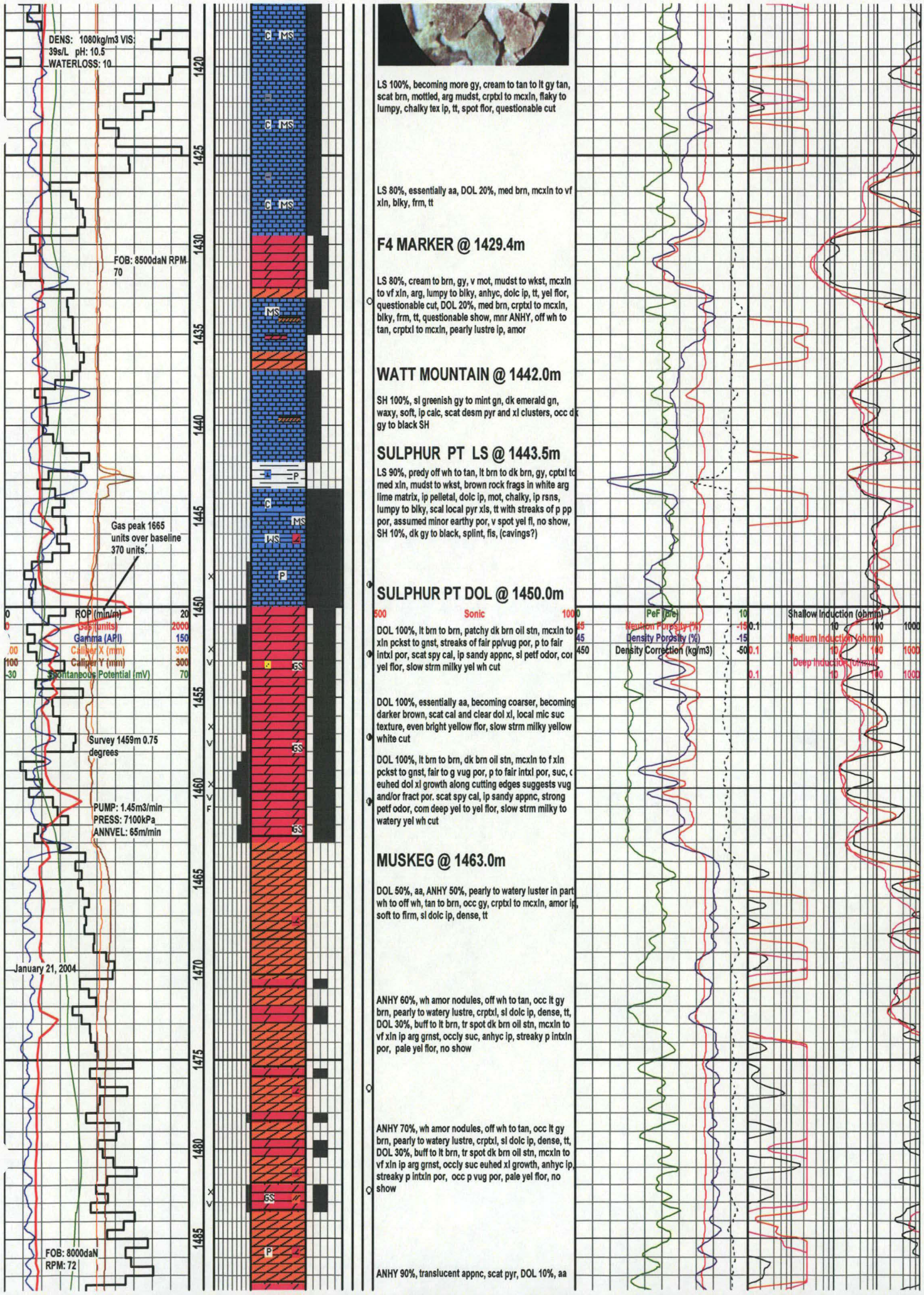
LS 100%, cream to tan to lt gy tan, scat brn, arg mudst, crptxl to mcxln, flaky to lumpy, chalky tex ip, tt, spot pale yel to yel flor, wk watery gn cut

PeF (b/e) 0 10
Neutron Porosity (%) 45 -15
Density Porosity (%) 45 -15
Density Correction (kg/m3) 450 -500

Shallow Induction (ohmm) 0.1 1 10 100 1000
Medium Induction (ohmm) 0.1 1 10 100 1000
Deep Induction (ohmm) 0.1 1 10 100 1000

PeF (b/e) 0 10
Neutron Porosity (%) 45 -15
Density Porosity (%) 45 -15
Density Correction (kg/m3) 450 -500

Shallow Induction (ohmm) 0.1 1 10 100 1000
Medium Induction (ohmm) 0.1 1 10 100 1000
Deep Induction (ohmm) 0.1 1 10 100 1000


DENS: 1080kg/m3 VIS: 39s/L pH: 10.5 WATERLOSS: 10
FOB: 8500daN RPM 70
Gas peak 1665 units over baseline 370 units.
ROP (min/m)
Gas (units)
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
Survey 1459m 0.75 degrees
PUMP: 1.45m3/min
PRESS: 7100kPa
ANNVEL: 65m/min
January 21, 2004
FOB: 8000daN
RPM: 72
Sonic
PeF (bre)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)
LS 100%, becoming more gy, cream to tan to lt gy tan, scat brn, mottled, arg mudst, crptxl to mcxln, flaky to lumpy, chalky tex ip, tt, spot flor, questionable cut
LS 80%, essentially aa, DOL 20%, med brn, mcxln to vf xln, blky, frm, tt
F4 MARKER @ 1429.4m
LS 80%, cream to brn, gy, v mot, mudst to wkst, mcxln to vf xln, arg, lumpy to blky, anhyc, dolc ip, tt, yel flor, questionable cut, DOL 20%, med brn, crptxl to mcxln, blky, frm, tt, questionable show, mnr ANHY, off wh to tan, crptxl to mcxln, pearly lustre ip, amor
WATT MOUNTAIN @ 1442.0m
SH 100%, sl greenish gy to mint gn, dk emerald gn, waxy, soft, ip calc, scat desm pyr and xl clusters, occ d gy to black SH
SULPHUR PT LS @ 1443.5m
LS 90%, predy off wh to tan, lt brn to dk brn, gy, cptxl to med xln, mudst to wkst, brown rock frags in white arg lime matrix, ip pelletal, dolc ip, mot, chalky, ip rsns, lumpy to blky, scal local pyr xls, tt with streaks of p pp por, assumed minor earthy por, v spot yel fl, no show, SH 10%, dk gy to black, splint, fis, (cavings?)
SULPHUR PT DOL @ 1450.0m
DOL 100%, lt brn to brn, patchy dk brn oil stn, mcxln to xln pckst to gnst, streaks of fair pp/vug por, p to fair intxl por, scat spy cal, ip sandy appnc, sl petf odor, co yel flor, slow strm milky yel wh cut
DOL 100%, essentially aa, becoming coarser, becoming darker brown, scat cal and clear dol xl, local mic suc texture, even bright yellow flor, slow strm milky yellow white cut
DOL 100%, lt brn to brn, dk brn oil stn, mcxln to f xln pckst to gnst, fair to g vug por, p to fair intxl por, suc, euhed dol xl growth along cutting edges suggests vug and/or fract por. scat spy cal, ip sandy appnc, strong petf odor, com deep yel to yel flor, slow strm milky to watery yel wh cut
MUSKEG @ 1463.0m
DOL 50%, aa, ANHY 50%, pearly to watery luster in part wh to off wh, tan to brn, occ gy, crptxl to mcxln, amor ip, soft to firm, sl dolc ip, dense, tt
ANHY 60%, wh amor nodules, off wh to tan, occ lt gy brn, pearly to watery lustre, crptxl, sl dolc ip, dense, tt, DOL 30%, buff to lt brn, tr spot dk brn oil stn, mcxln to vf xln ip arg grnst, occly suc, anhyc ip, streaky p intxln por, pale yel flor, no show
ANHY 70%, wh amor nodules, off wh to tan, occ lt gy brn, pearly to watery lustre, crptxl, sl dolc ip, dense, tt, DOL 30%, buff to lt brn, tr spot dk brn oil stn, mcxln to vf xln ip arg grnst, occly suc euhed xl growth, anhyc ip, streaky p intxln por, occ p vug por, pale yel flor, no show
ANHY 90%, translucent appnc, scat pyr, DOL 10%, aa

DENS: 1090kg/m3 VIS: 45s/L pH: 10.5 WATERLOSS: 13

0 ROP (min/m) 20
0 Gas (units) 2000
0 Gamma (API) 150
100 Caliper X (mm) 300
100 Caliper Y (mm) 300
-30 Spontaneous Potential (mV) 70

1490
1495
1500
1505
1510
1515
1520
1525
1530
1535
1540
1545
1550
1555

GS

ANHY 70%, pearly wh amor nodules to tan to lt gy transulcent crptxl, sl dolc ip, dense, tt, DOL 30%, buff to lt brn, occ brn oil stn, mcxln to vf xl arg grnst, ip suc, euhed xls, occ p intxl por, rr p vug por, dull yel flor, wk watery gn cut

500 Sonic 1000

ANHY 70%, pearly wh amor nodules to tan to lt gy transulcent crptxl, sl dolc ip, dense, tt, DOL 30%, buff to lt brn, occ brn oil stn, mcxln to vf xl arg grnst, ip suc, euhed xls, occ p intxl por, rr p vug por, dull yel flor, questionable cut

ANHY 90%, aa, DOL 10%, aa

ANHY 80%, aa, translucent appnc, scat pyr, DOL 20%, a

DOLOMITE MARKER

ANHY 30%, wh to tan, occ lt gy to brn, pearly to watery luster, crptxl, sl dolc ip, dense, tt, DOL 70%, tan to lt brn to spot dk brn oil stn, mcxln to vf xln, suc, sandy granular appnc ip, anhyc ip, streaks of fair intxl por, pa yel flor, questionable show

ANHY 70%, wh to tan, occ lt gy, pearly, watery, translucent, amor, crptxl, sl dolc ip, dense, tt, DOL 30% tan to lt brn, mcxln to vf xl, grnst, suc, gran, streaky p intxl por, pale yel flor, no show

500 Sonic 1000

ANHY 90%, wh to tan, occ lt gy, pearly, watery, translucent, amor, crptxl, sl dolc ip, dense, tt, DOL 10% tan to lt brn, mcxln to vf xl, grnst, suc, gran, streaky p intxl por, pale yel flor, no show

PeF (b/e) 10
45 Neutron Porosity (%) -15
45 Density Porosity (%) -15
450 Density Correction (kg/m3) -500

Shallow Induction (ohmm) 0.1 1 10 100 1000
Medium Induction (ohmm) 0.1 1 10 100 1000
Deep Induction (ohmm) 0.1 1 10 100 1000

PeF (b/e) 10
45 Neutron Porosity (%) -15
45 Density Porosity (%) -15
450 Density Correction (kg/m3) -500

Shallow Induction (ohmm) 0.1 1 10 100 1000
Medium Induction (ohmm) 0.1 1 10 100 1000
Deep Induction (ohmm) 0.1 1 10 100 1000

Scale Change

0 ROP (min/m) 30
0 Gas (units) 2000
0 Gamma (API) 150
100 Caliper X (mm) 300
100 Caliper Y (mm) 300
-30 Spontaneous Potential (mV) 70

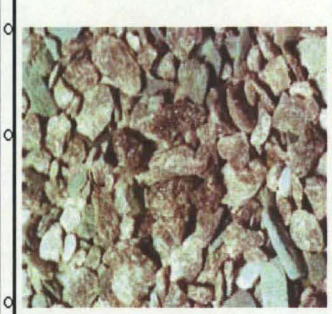
ANHY 100%, essentially aa, tr DOL

KEG RIVER @ 1562.5m

DOL 100%, tan to gy brown to brown, com dk brn oil stain, predy mcxln to vf xl, scat f clr dol xl or rhomb clusters with g xl relief, pkst to gnst, scat fair vug por, streaks of fair intxl por, suc ip, local anhy and cal infill, sandy appnc ip, brit to firm, hydc odor in sample, spot pale yel flor, wk cut

DOL 100%, tan to brown, becoming more brn, com dk brn oil stain, mcxln to f xl, pkst to gnst, p to fr vug por, to fr intxl por, some g grain releif with mic druze to clr euhedral dol rhombs along cutting surfaces suggest vug and/or frac por, suc, sandy appnc, sl bitns, brit to firm, scat dolmtzd fos rmn, wk hydc odor in sample, very dull gold flor, wk gn cut

DOL 100%, essentially aa, sl tighter, tan to brown, com dk brn oil stain, mcxln to f xl, pkst to gnst, p to fr vug por, p to fr intxl por, tr spy cal, suc, sandy appnc, sl bitns, brit to firm, scat dolmtzd fos rmn, wk hydc odor in sample, very dull gold flor, wk gn cut



DOL 100%, tan to dk brown, mcxln to f xl, pkst to gnst, p to fr vug por, p to fr intxl por, cal infill and vf clr dol xls and occ bit lining cutting surfaces suggests frac and/or vug por, tr spy cal, suc, sandy appnc, sl bitns with tr bl bitns partings, brit to firm, wk hydc odor in spl, v dull gold flor, wk gn cut

DOL 100%, tan to brown, com dk brn oil stain, predy mcxln to f xl, local to med xl, euhedral and subhedral crystal growth, pkst to gnst, tr p vug por, local fair suc intxl por, good grain releif, becoming tighter downsection, clr dol rhombs and spy cal, possible frac por, silty to sandy appnc, tr cal infill, sl bitns with black bit partings, brit to firm, very dull gold flor, wk gn cut

DOL 100%, aa, becoming more gy, blky

CHINCHAGA @ 1631.0m

FOB: 8200daN RPM 72

January 22, 2004

DENS: 1130kg/m3 VIS: 45s/L pH: 10.5 WATERLOSS: 9.5

bit trip

Bit #2 200mm Varel CH34 IN@1585m

FOB: 12000daN RPM: 70-80

Survey 1605m 1.00 degree

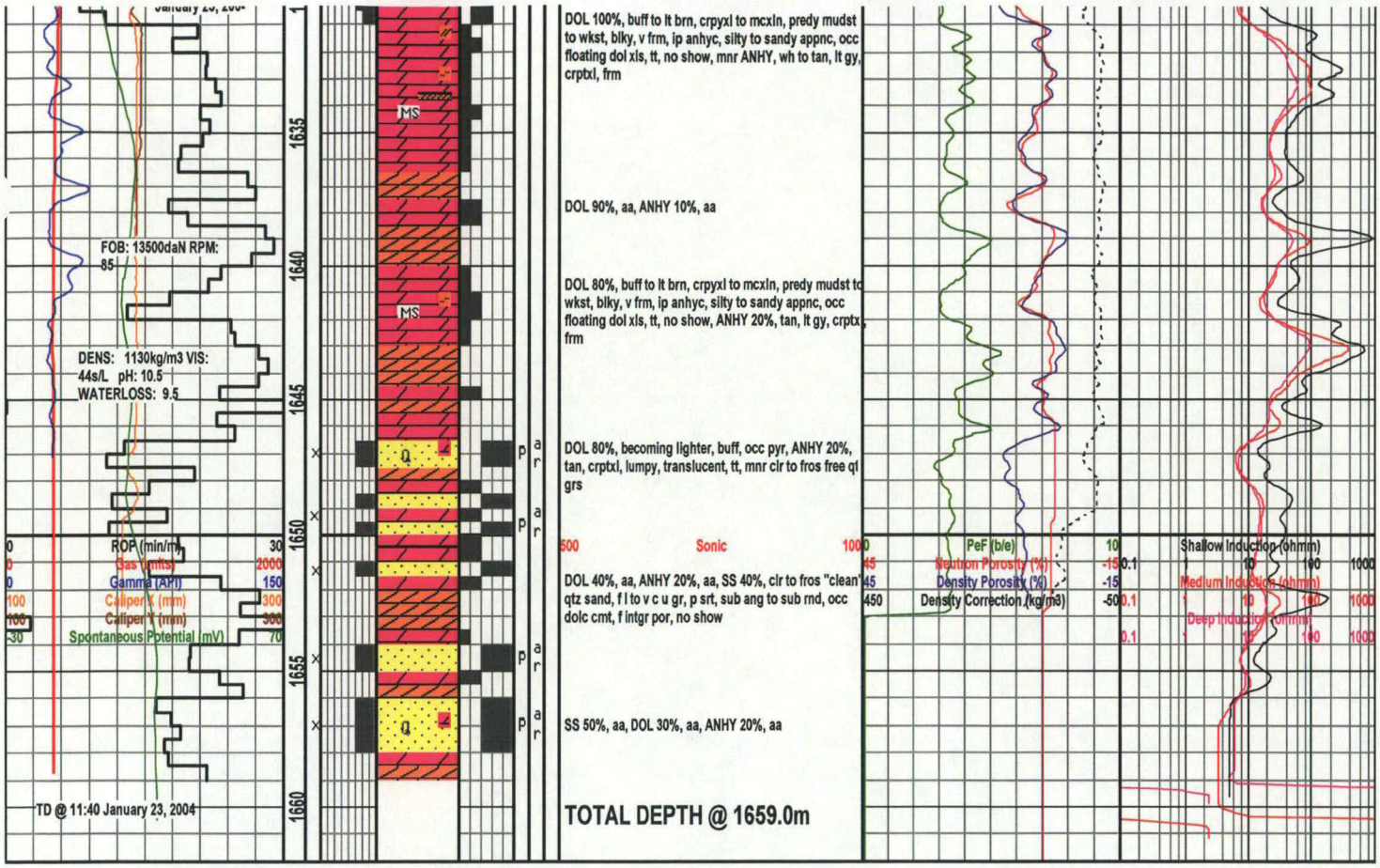
PUMP: 1.05m3/min PRESS: 4600kPa ANNVEL: 45m/min

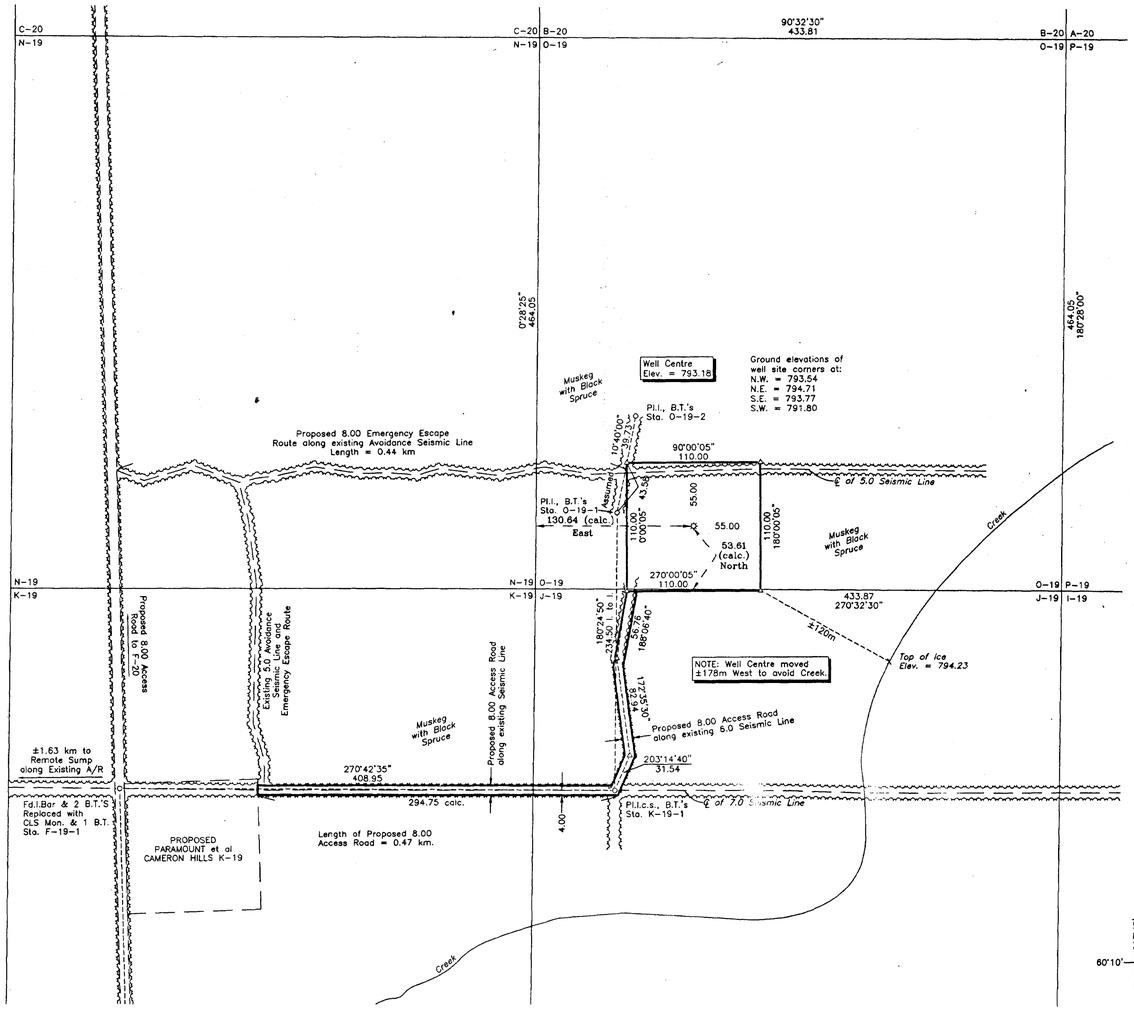
0 ROP (min/m) 30
0 Gas (units) 2000
0 Gamma (API) 150
100 Caliper X (mm) 300
100 Caliper Y (mm) 300
-30 Spontaneous Potential (mV) 70

500 Sonic 1000

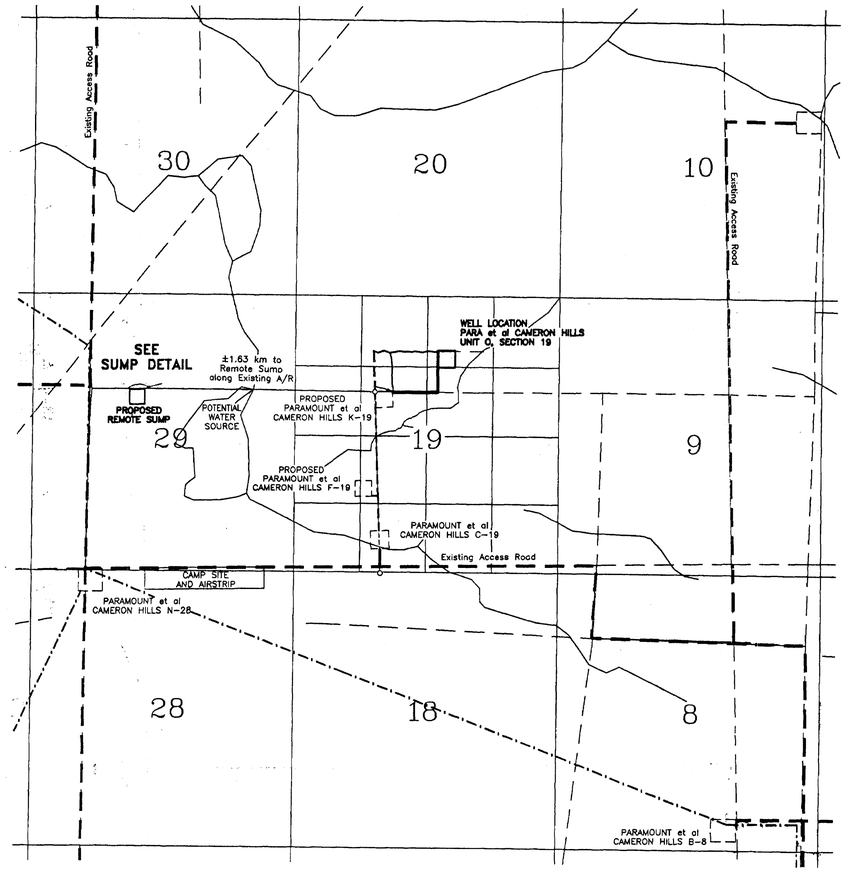
0 PeF (b/e) 10
45 Neutron Porosity (%) -15
45 Density Porosity (%) -15
450 Density Correction (kg/m3) -500

0.1 Shallow Induction (ohmm) 1000
0.1 Medium Induction (ohmm) 1000
0.1 Deep Induction (ohmm) 1000


FOB: 13500daN RPM: 85
DENS: 1130kg/m3 VIS: 44s/L pH: 10.5
WATERLOSS: 9.5
TD @ 11:40 January 23, 2004
ROP (min/m)
Gas Units
Gamma (API)
Caliper X (mm)
Caliper Y (mm)
Spontaneous Potential (mV)
MS
MS
Q
Q
DOL 100%, buff to lt brn, crpyxl to mcxln, predy mudst to wkst, blky, v frm, ip anhyc, silty to sandy appnc, occ floating dol xls, tt, no show, mnr ANHY, wh to tan, lt gy, crptxl, frm
DOL 90%, aa, ANHY 10%, aa
DOL 80%, buff to lt brn, crpyxl to mcxln, predy mudst to wkst, blky, v frm, ip anhyc, silty to sandy appnc, occ floating dol xls, tt, no show, ANHY 20%, tan, lt gy, crptxl, frm
DOL 80%, becoming lighter, buff, occ pyr, ANHY 20%, tan, crptxl, lumpy, translucent, tt, mnr clr to fros free qt grs
Sonic
DOL 40%, aa, ANHY 20%, aa, SS 40%, clr to fros "clean" qtz sand, f l to v c u gr, p srt, sub ang to sub rnd, occ dolc cmt, f intgr por, no show
SS 50%, aa, DOL 30%, aa, ANHY 20%, aa
TOTAL DEPTH @ 1659.0m
PeF (b/e)
Neutron Porosity (%)
Density Porosity (%)
Density Correction (kg/m3)
Shallow Induction (ohmm)
Medium Induction (ohmm)
Deep Induction (ohmm)

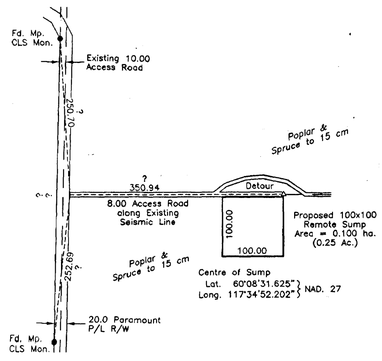


DETAIL
SCALE 1:2,500

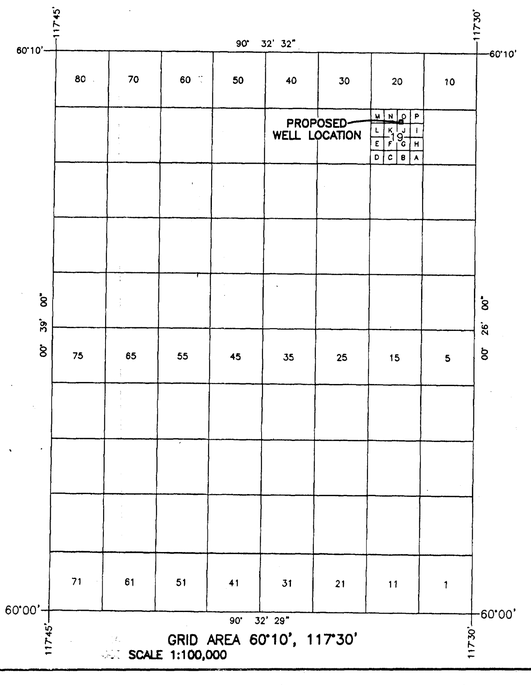


GEOGRAPHIC AND UTM COORDINATES, (1983 NAD)					
Station	Latitude(N)	Longitude(W)	Northings	Eastings	Elev.
CONTROL MONUMENTS					
F-19-1	60°08'40.080"	117°33'15.967"	6667629.486	469210.057	784.93
K-19-1	60°08'40.026"	117°32'49.458"	6667624.419	469818.965	789.28
O-19-1	60°08'47.606"	117°32'49.474"	6667858.908	469620.658	792.62
O-19-2	60°08'50.256"	117°32'48.519"	6667940.778	469636.078	794.46
PROPOSED WELL					
O-19, WELL CENTRE	60°08'47.230"	117°32'45.383"	6667846.761	469683.670	793.18

GRID AREA 60°10', 117° 30'- GEOGRAPHIC AND UTM COORDINATES, (1927 NAD)				
N.E.	60°10'00"	117°30'00"	6669871.559	472250.652
N.W.	60°10'00"	117°45'00"	6670002.853	458376.311
S.W.	60°00'00"	117°45'00"	6651441.753	458165.709
S.E.	60°00'00"	117°30'00"	6651310.016	472110.252
O-19, N.E.	60°09'00.113"	117°32'20.625"	6668035.926	470067.650
O-19, N.W.	60°09'00.130"	117°32'48.750"	6668040.030	469633.857
O-19, S.W.	60°08'45.130"	117°32'48.750"	6667575.994	469630.018
O-19, S.E.	60°08'45.113"	117°32'20.625"	6667571.889	470063.866
PROPOSED WELL				
O-19	60°08'46.858"	117°32'40.281"	6667628.367	469761.095



SUMP DETAIL
Not To Scale



GRID AREA 60°10', 117°30'
SCALE 1:100,000

AREAS:

	Hectares	Acres
Well Site =	1.210	2.99
Access Road =	0.376	0.93
Remote Sump =	0.100	0.25
Total =	1.686	4.17

BEARING TREES

STATION	BEARING	DISTANCE	TREE
F-19-1	–	–	–
	–	–	–
	–	–	–
K-19-1	110°20'05"	13.83	6 cm Spruce
	194°33'40"	16.51	7 cm Spruce
	246°27'30"	13.96	7 cm Spruce
O-19-1	226°00'00"	7.27	9 cm Spruce
	256°28'00"	6.06	6 cm Spruce
	314°19'00"	7.50	10 cm Spruce
O-19-2	25°46'59"	8.22	7 cm Spruce
	72°06'59"	10.19	9 cm Spruce
	127°11'59"	8.39	12 cm Spruce

PLAN AND FIELD NOTES
OF SURVEY OF
PROPOSED EXPLORATORY WELL
PARA ET AL CAMERON
IN UNIT O, SECTION 19
GRID AREA 60° 10', 117° 30'
NORTHWEST TERRITORIES
CANADA OIL AND GAS REGULATIONS
EXPLORATORY WELL, NORTHWEST TERRITORIES

SCALE 1:20,000
400m 200 0m 400 800 1200 1600m

SURVEYED FOR
PARAMOUNT RESOURCES LTD.

BY : GREG A. BOGGS, C.L.S.
August & September, 2003.

THIS SURVEY WAS EXECUTED ON AUGUST 30th 2003.

Certified correct and completed on the 25th day of September 2003.

_____ Canada Lands Surveyor

PARAMOUNT RESOURCES LTD.

Dave Blot _____ _____ _____

_____ _____ _____ _____ _____
WITNESS

Nov 28/03
DATE

LEGEND

UTM coordinates are computed for Zone 11, Central Meridian 117° W. Bearings were derived from differentially corrected GPS Observations, and are referred to meridian 117° W.

Distances are expressed in metres and decimals thereof.

Distances shown in traverse are measured distances reduced to the horizontal at general ground level.

For the computation of coordinates measured distances have been reduced to the UTM plane by multiplying them by an average combined scale factor of 0.999493.

Distances shown on grid area subdivisions are UTM plane, NAD 27 Datum. All other dimensions are based on NAD83 Datum.

Statutory iron posts placed are shown thus:..... ○
Statutory iron posts found are shown thus:..... ●
Wooden posts placed are shown thus:..... □
Alberta Survey Control Markers found are shown thus:..... ⊕
Traverse stations placed are shown thus:..... △
Areas dealt with shown thus:.....
Buried pipe lines are shown thus:.....
Seismic lines are shown thus:.....

Elevations were derived from Alberta Survey Control Marker 440958 Elev. = 713.96 m. (Geoid Separation HT1-01)

Survey was completed prior to drilling; therefore well as drilled may not necessarily agree with proposed location.

REV.	DESCRIPTION	BY	DATE
1	Added Creek information in Detail	JDS	NOV. 26/03
0	PLAN ISSUED	JDS	SEPT. 25/03

GREG A. BOGGS
CANADA LANDS SURVEYOR

McELHANNEY LAND SURVEYS LTD.
PROFESSIONAL LAND SURVEYORS
138, 14315-118 Avenue
Edmonton, Alberta
PH: (780) 451-3420 FAX: (780) 452-7033

Date: Sept. 25, 2003
Plan No.: 1 of 1
Job No.: 321114302

SCALE AS SHOWN
File No.: 14302
JDS

Plan ID 14302ws1