NWT

AUTHORITY TO DRILL A WELL

CANADA

Exploratory ☒
Development ☐
Delineation ☐
Service ☐

AUTHORITY TO DRILL A WELL

APPLICATION

This application is submitted with Section 82 of the Canada Oil and Gas Drilling Regulations. When approved under Section 83 of the Regulations, it is the requisite authority for the commencement of drilling operations.

Well Name in Full: CDN FOREST ET AL NORTH LIARD C-31A

Operator: CANADIAN FOREST OIL LTD.
Drilling Program No.: NA

Contractor: AKITA DRILLING LTD
Permit or Lease No.: ---

Drilling Rig or Unit: 58E
Estimated Well Cost: $2,200,000.00

Location-Unit: C
Section: 31
Grid Area: 60° 40' N, 123° 30' W

Coordinates: Lat.: 60° 30' 00.3158" N (EST.)
Long.: 123° 36' 36.1336" W (EST.)

Area: NORTH LIARD
Field/Pool: WILDCAT

Elevation-RT/KB: KB = 488.0m (ASL)
Seafloor: NA (BRT)

Approx. Spud Date: JANUARY 5, 2001
Estimated Days on Location: 20 DAYS

Anticipated Total Depth: 3090.5mKB
Target Horizon(s): NAHANNI

EVALUATION PROGRAM

Ten-metre sample intervals ---

Five-metre sample intervals 2370mKB TO T.D.

Canned sample intervals

Conventional cores at NONE ANTICIPATED

Logs and Tests SEE ATTACHED SHEET

CASING AND CEMENTING PROGRAM

O.D.	Weight:	Grade:	Setting Depth Below Seafloor:	Cementing Program (Volumes):
762mm	CONDUCTOR PIPE		31.7mKB	GROUTED TO SURFACE
508mm	196 kg/m	K-55	190.0mKB	60.12m³
339.7mm	101.2 kg/m	K-55	710.3mKB	87.0m³
244.5mm	79.6 kg/m	HCL-80	2367.0mKB	60.0m³
177.8mm	43.16 kg/m	L-80	2200-3090.5mKB	13.7m³

B.O.P. Equipment:
AS PER CANADA OIL AND GAS DRILLING REGULATIONS, SECTION 60. SEE ORIGINAL C-31 APPLICATION FOR DRILLING RIG INVENTORY.

Other Information:
SEE ATTACHED SHEET FOR BRIEF DESCRIPTION OF PROPOSED C-31A DRILLING PROGRAM.

Signed: [signature] P.ENG.
Title: VICE PRESIDENT, MANAGER OF PROJECTS

Date: JANUARY 3, 2001
Company: PAJAK ENGINEERING LTD.
FOR: CANADIAN FOREST OIL LTD.

APPROVAL

An approved copy of this notice is to be posted at each wellsite.

Signed: [signature]
Chief Conservation Officer

Date: Jan 4/01

File. 9211-C131-3-3, WID: 1907

UWI: 300C316040123300

Canada

WELL TERMINATION RECORD (with attachment)

National Energy Board

Office national de l'énergie

File No.: WID # 1907
2 May 2001

Mr. Mickey J. Sutherland, P.Eng
Vice President, Manager of Projects
Pajak Engineering Ltd.
1660 Elveden House
717 - 7th Avenue S.W.
Calgary, Alberta T2P 0Z3

Dear Mr. Sutherland:

Well Termination Record for CDN Forest et al North Liard C-31A

Attached, please find the acknowledged Well Termination Record, for the subject well pursuant to section 184 of the *Canada Oil and Gas Drilling Regulations*.

Please note that we have added our file numbers. If you have any questions, please do not hesitate to contact Andy Graw at 299-2790.

Yours sincerely,

T. M. Baker
Chief Conservation Officer

c.c. M. Fortier (DIAND)

National Energy Board | Office national de l'énergie

WELL TERMINATION RECORD

This record is submitted in compliance with Section 184 of the Canada Oil and Gas Drilling Regulations

Well Name: CDN FOREST ET AL NORTH LIARD C-31A Area: NORTH LIARD

Grid Area: 60° 40' N, 123° 30' W Field/Pool: WILDCAT

Interest Identifier: EL 363 Final Coordinates: Lat: B.H. 60° 30' 1.733" N 60° 30' 0.316" N Long: B.H. 123° 36' 47.688" W 123° 36' 36.134" W

Drilling Unit: AKITA 58E Elevations-KB/RT: KB = 488.0m (ASL) GL/Seafloor: GL = 481.3m

Spud Date: JANUARY 6, 2001 R.R. APRIL 4, 2001 Total Depth: 2941.6m/PBTD=2255m

O.D. (mm)	Weight (kg/m)	Grade	Depth Set (m KB)	Cement (m³)
SEE ATTACHMENT #1				

PLUGGING PROGRAM

Approval of the following program was obtained by (person) MICKEY J. SUTHERLAND, P.ENG from (person) ANDY GRAW, DRILLING ENGINEERING SPECIALIST of the NATIONAL ENERGY BOARD, by means of TELEPHONE on APRIL 2, 2001

Type of Plug	Interval (m KB)	Felt	Cement (m³)
SEE ATTACHMENT #1			

Lost Circulation/Overpressure Zones: SEE ATTACHMENT #1

Equipment left on Seafloor (Describe): NONE

Provision for Re-entry (Describe and attach sketch): WELL IS CURRENTLY SUSPENDED

Cores: Type: NONE Intervals:

Other Downhole Completion/Suspension Equipment: SEE ATTACHMENT #2, WELLBORE SCHEMATIC

CERTIFICATION

I certify on the basis of personal knowledge of operations undertaken at the above named well that the above information is accurate.

Signed: Mickey J Sutherland Title: VICE PRESIDENT, MANAGER OF PROJECTS

Name: MICKEY J. SUTHERLAND, P.ENG Date: APRIL 10, 2001

Company: PAJAK ENGINEERING LTD
FOR: CANADIAN FOREST OIL LTD.

Acknowledged by: T Baker
Chief Conservation Officer

Well Status

Suspended ☒
Completed ☐
Abandoned ☐

Date: May 2/01

File: 9211-C131-3-3

UWI: 300C316040123300 WID: 1907

ATTACHMENT #1

WELL TERMINATION RECORD

CDN FOREST ET AL NORTH LIARD C-31A

OD (mm)	Weight (kg/m)	Grade	Depth Set (mKB)	Cement (m^3)
762.0	Conductor Pipe		31.7	
508.0	196.0	K-55	190.0	60.12
339.7	101.2	K-55	710.3	87.0
244.5	79.62	HCL-80	2630.0	60.0

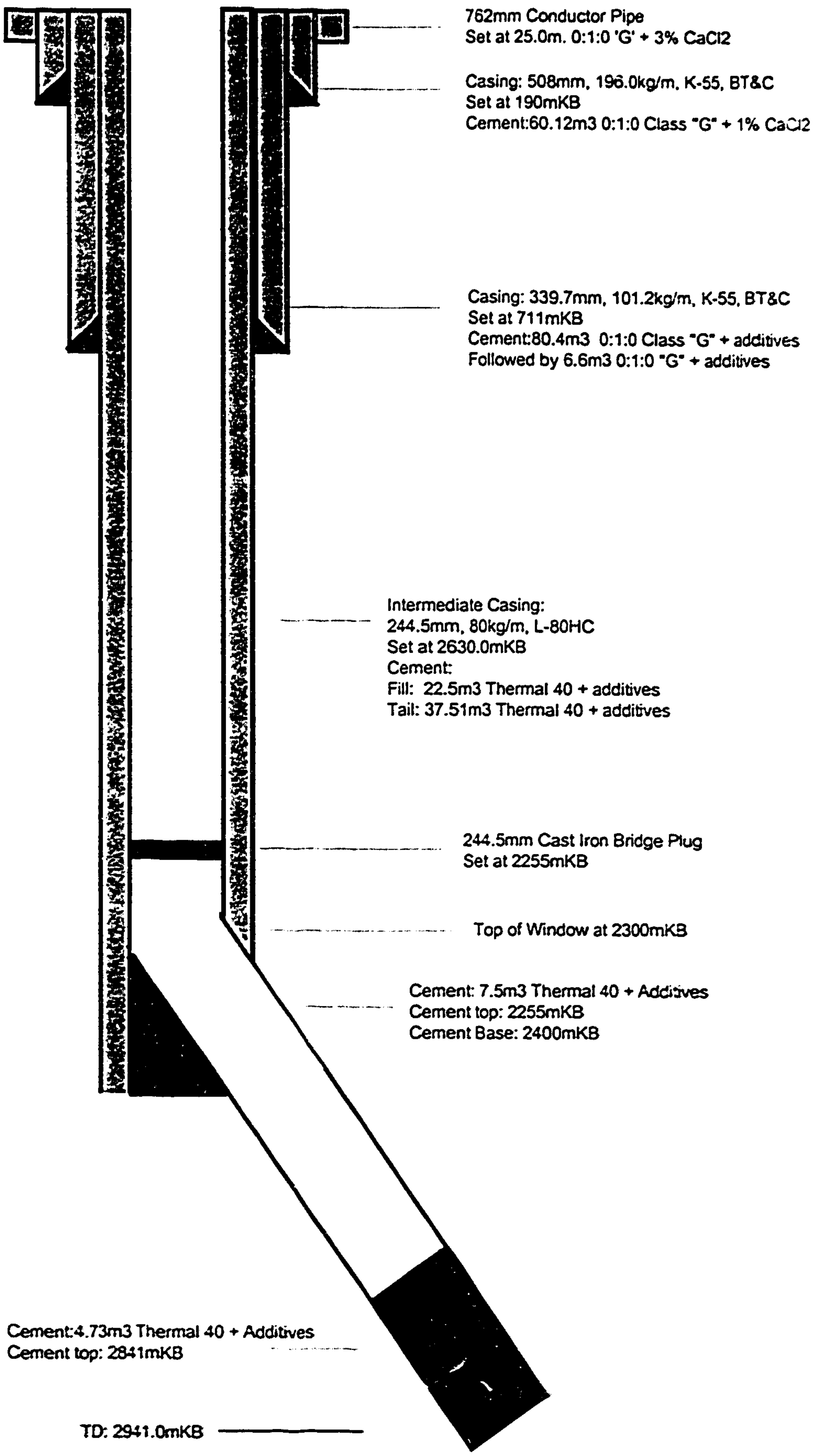
Type of Plug	Interval (mKB)	Felt	Cement (m^3)
Cast Iron Bridge Plug	2255	No Pressure tested to 7 MPa	
Cement Plug	2941-2841	No	4.73
Cement Plug	2255-2400	10,000 daN on cement	7.5

Overpressure Zones: None

Lost Circulation Zones:

Zone	Depth (mKB)	Date	Volume Lost (m^3)
#1	2389.7	2001.01.06	6.8
#2	2527.8	2001.02.19	6.0
#3	2792.0	2001.03.13	20.0

Attachment # 2
WELLBORE SCHEMATIC
CDN Forest et al North Liard C-31-A



APPROVAL TO ALTER CONDITION OF A WELL

National Energy Board

CANADA

Office national de l'énergie

APPROVAL TO ALTER CONDITION OF A WELL

This application is to be submitted to the Chief Conservation Officer at least 45 days before commencement of operations.

Well Name: CDN FOREST ET AL FORT LIARD C-31A

Area: NORTH LIARD

Operator: CANADIAN FOREST OIL LTD.

Contractor:

Drilling Rig or Unit:

Depth:

Coordinates: Lat: 60° 30' 00.3158" N (Est.) Long: 123° 36' 36.1336" W (Est.)

Date ADW Issued: MAY 2, 2001

Date of last Operation: 2000.04.04

Elevation-KB/RT: 488.8m (ASL)

GL/Seafloor: 481.3m

TYPE OF OPERATION

COMPLETE THE WELL FOR SWEET GAS.

SUMMARY OF PROPOSED OPERATIONS

PLEASE SEE ATTACHED DETAIL OPERATIONS PROGRAM.
PERFORATE, FRACTURE, STIMULATE AND FLOW TEST THE FORT SIMPSON SAND, 2000-2075mKB, AND THE BANFF FORMATION, 1650-1800mKB AND 1075-1200mKB.

Signed: [signature]
Responsible Officer

Title: COMPLETION WORKOVER SUPERVISOR

Name: LARRY G. THORHAUG

Company: PAJAK ENGINEERING LTD.
FOR: CANADIAN FOREST OIL LTD.

Date: NOVEMBER 16, 2001

Phone: 403-264-1197

APPROVAL

An approved copy of this notice is to be posted at each wellsite

Date: Jan 3/02

Signed: T.M. Baker
Chief Conservation Officer

File:

WID: 1907

Well Status

Suspended XX

Completed ☐

Abandoned ☐

FINAL WELL REPORT

PAJAK ENGINEERING LTD.

OILFIELD SUPERVISION & PROJECT MANAGEMENT

FINAL WELL REPORT

CDN FOREST et al NORTH LIARD C-31A

60° 30' 01.499" N
123° 36' 38.428" W

Suite 400, IVEAGH HOUSE
707 - 7th Avenue S.W.
Calgary, Alberta T2P 3H6
24 HRS (403) 264-1197
FAX (403) 264-1584

PAJAK ENGINEERING LTD.
OILFIELD SUPERVISION &
PROJECT MANAGEMENT

APEGGA
The Association of Professional Engineers, Geologists and Geophysicists of Alberta
PERMIT HOLDER

FINAL WELL REPORT

CDN FOREST et al NORTH LIARD C-31A

60° 30' 01.499" N
123° 36' 38.428" W

November, 2001

Prepared for

CANADIAN FOREST OIL LTD.

By

Mickey Sutherland, V.P., Manager of Projects

Pajak Engineering Ltd.
400 Iveagh House
707 - Seventh Avenue S. W.
Calgary, Alberta T2P 3H6

FINAL WELL REPORT
CDN FOREST et al NORTH LIARD C-31A

INDEX

(A) INTRODUCTION:

(i) SUMMARY:

The C-31A well was spudded utilizing Akita Rig #58E on January 6, 2001 to test the middle Devonian Nahanni formation for gas. A wireline set Whipstock was run with a Gyro to orient the window at 2375mKB. A window was milled in the 244.5mm casing and drilling began. A 215.9mm main hole was drilled to 2941.5mKB. Open hole logs were run. The Nahanni formation was not encountered and the open hole was plugged back to 2255.0mKB in preparation to suspend the well or for future side track operations.

(ii) LOCALITY MAP:

The Cdn Forest et al North Liard C-31A location is located approximately 32.4 kilometers north of the barge landing site on the Chevron K-29 access road.

See Attachment #1 and Attachment #2.

(B) GENERAL DATA:

(i) WELL NAME: CDN FOREST ET AL NORTH LIARD

WELL NUMBER: C-31A
SURFACE LOCATION: 60° 30' 00.3158" North
123° 36' 36.1336" West

BOTTOM HOLE LOCATION: 60° 30' 01.499" North
123° 36' 38.428" West

EXPLORATION AGREEMENT NUMBER: EL-363
WID: 1907

(ii) WELL LOCATION:

The Global Position System (GPS) was used as the survey system to determine the final well position. The well position was based on geological and seismic information.

(iii) UNIQUE WELL IDENTIFIER: 300C316040123300

(iv) OPERATOR AND DRILLING CONTRACTOR:

OPERATOR: Canadian Forest Oil Ltd.
#600, 800 - Sixth Avenue S. W.
Calgary, Alberta
T2P 3G3

DRILLING CONTRACTOR: Akita Drilling Ltd.
1110, 505 - Third Street S. W.
Calgary, Alberta
T2P 3E6

(v) DRILLING UNIT:

NAME: AKITA RIG #58E
TYPE: NATIONAL 8OUE
REGISTRY: Not Applicable
YEAR BUILT: 1978
SHIP YARD: Not Applicable

(vi) POSITION KEEPING:

Land based drilling unit using anchor and guy wire system.

(vii) SUPPORT CRAFT:

Not applicable.

(viii) DRILLING UNIT PERFORMANCE:

Not applicable. Land based drilling unit.

(ix) DIFFICULTIES AND DELAYS:

None

(x) TOTAL WELL COST:

Drilling:	$7,582,233.00
Completion:	$ 0.00
Clean-Up:	$ 674,495.00
Total:	$8,256,728.00

(C)

(C) SUMMARY OF DRILLING OPERATIONS:

(i) ELEVATIONS:

Kelly Bushing:	488.0m
Casing Flange:	487.8m
Ground:	481.3m

(ii) TOTAL DEPTH:

Drilled Depth:	2941.5mKB
Logged Depth:	2895.0mKB
Plugged-Back Depth:	2255.0mKB

(iii) SPUD DATE:

2001.01.06 @ 18:30 hours.

(iv) COMPLETED DRILLING DATE:

2001.03.30 @ 09:30 hours.

(v) RIG RELEASE DATE:

2001.04.04 @ 06:00 hours.

(vi) WELL STATUS:

Abandoned

(vii) HOLES SIZES & DEPTHS:

	Hole Size (mm)	Hole Depth (mKB)
Conductor:	914.4	31.7
Conductor:	660.4	190.0
Surface:	444.5	710.3
Intermediate:	311.2	2630.0
Production:	215.9	2941.5

Note: Conductor holes, surface hole and intermediate holes utilized from original C-31 wellbore.

See Attachment #3, Bit Record.

(viii) CASING & CEMENT RECORD:

See Attachment #4, Casing & Cement Record.

(ix) SIDETRACKED HOLE:

215.9mm hole to 2450mKB. Cemented full length back into 244.5mm casing and polished off for setting Whipstock to mill new window.

Note: Original sidetrack was following old wellbore and had to be cemented back for new window.

(x) DRILLING FLUID:

See Attachment #5, Drilling Mud Properties Record.

(xi) FISHING OPERATIONS:

None.

(xii) WELL KICKS AND WELL CONTROL OPERATIONS:

LOSS CIRCULATION

Day	Depth	Progress	Remarks:
181	2370	0	2001.01.06 @ 00:00 Hours: Remilled the window area. Milling tool took weight at 2365.5mKB. Worked this area only once as this was the only area that needed remilling, weight on milling tool at 2365.5mKB was 3000 daN. Drilled 2.19m for a total depth of 2369.97mKB. Worked and cleaned the new hole until hole drag down was 8000 daN, hole drag up was 14000 daN with no pumps or rotary. The hole drag with pumps on up and down was the same with pumps off, the cuttings coming over the shaker were very fine and the amount was small. Hoisted with milling assembly, out of the hole at 08:15 hours. Inspected milling tool and the only area that showed wear was on the middle mill. Picked up mud motor BHA. Ran in hole to a depth of 2365mKB and circulated. Could not go through window, rotated bit with pump pressure, once bit turned, got through the window. Drilled 0.6m for a total depth of 2370.03mKB. Pulled up to 2362mKB and performed a leak off test. Finished pressure testing at 19:00 hours. Final leak off pressure was 8000 kPa, for a formation gradient of 14.41 kPa/m and a EMD of 1469 kg/m^3, total pressure was 34100 kPa (HP 26100 kPa + leak off pressure 8000 kPa). Circulated for 20 minutes to check for any volume losses, flow checked and well remained static. Rigged up Gyro and wireline to orientate mud motor tool face. Could not get a proper tool face, as the tool face approached 240 degrees, it would turn 180 degrees. The directional driller felt that the reason for this was that the hole direction was not away from window, but it ran along the casing. Will lay down Gyro tool and rotate 14m, as this should allow the MWD tool to provide surveys.

Once a survey has been taken the directional driller will know where tool face is and make adjustments to tool face. An inclination of 3.0 or greater is needed. Rotated assembly to 24:00 hours 2001.01.06.

Note 1: Safety Topic: Gyro tool rig up.
Note 2: Trip record: Calculated: 11.01m^3. Measured: 12.50m^3. Difference: 1.49m^3.
Note 3: Hole Drag: Up 12000 daN, down 8000 daN.
Note 4. Drilled (rotated) 19.7m to a depth of 2389.70mKB, took 3 surveys to see what the inclination was in order to have proper MWD reading. The first was, Inc = 2.5 at a depth of 2370mKB. The second was, Inc = 2.1 at a depth of 2373mKB. The third was, Inc = 2.5 at a depth of 2375.7mKB. Could not get accurate MWD reading with these inclinations. Have lost 6.8m^3 of volume in 19.7m of drilling. At 05:30 hours, stopped drilling and circulating up a sample, at this point traces of shale are coming over the shaker, but before that only cement.

225 2539 21

2001.02.09 @ 00:00 Hours:
Surveyed and started to slide from 2518.9-2524mKB whild holding 1000 kPa differential pressure on cit with an average ROP of 1 metre per hour. Rotated from 2524-2526mKB with an average ROP of 1.2 metres per hour while holding 1000 kPa differential pressure on bit and a drilling torque between 8000-10000 ft/lb. Back reamed and worked hole prior to connection. Performed rig service and functioned bottom pipe rams, 8 seconds to close. Continued to rotate from 2526-2527.8mKB with an average ROP of 1.7 metres per hour. Picked up off bottom. Flow checked well for losses. Well static. While pumping had lost 3m^3 drilling mud. Continued to rotate from 2527.8-2528mKB with an average ROP of 2.2 metres per hour. Surveyed and started to circulate bottom hole sample. Sample up had shows of fractures and was mainly shale. Continued to slide from 2528-2533mKB with an average ROP of 1 metre per hour while holding 1000 kPa differential pressure on bit and an average mud loss to well 0.2m^3/hour to nil. Back reamed slide and cleaned pipe screen. Rotated from 2533-2538mKB with an average ROP of 1 metre per hour while holding all the same parameters as before. Worked and cleaned hole. Surveyed and started to slide from 2538-2539.6mKB with an average ROP of .8 metres per hour while holding 1000 kPa differential pressure on bit to 24:00 hours 2001.02.19.

Note 1: Checked crown saver, fastline clamp and deadman anchor.
Note 2: Safety topic with crews was fuel transfer.
Note 3: Maximum experienced hookload was 110000 daN.
Note 4: Hole drag up 12000 daN, down 12000 daN.
Note 5: Slivers and sliver dollar shale still being reported at shale shakers while working hole prior to connections.
Note 6: Losses had reduced to zero at 06:00 hours 2001.02.20.

247	2792	1	2001.03.13 @ 00:00 Hours: Tripped to window. Flow checked and rig serviced. Changed out a hydraulic ram on top drive. Tripped for bit. Changed motor and bit. Serviced MWD. Tripped in hole. Cleaned to bottom from 2782.0mKB. Rotated from 2791-2792mKB at 1.5m/hour and 13000 ft/lbs torque. Lost circulation while drilling. Flow checked and observed fluid dropping in annulus. Spotted a 5.0m^3 pill on bottom. Tripped to window to 23:59 hours 2001.03.13. Note 1: Drilled 1.0m and lost 20.0m^3 of mud. Pulled up to 2786mKB and pumped a 5.0m^3 LCM pill containing calcium carbonate and ultraseal. Losses ended while pumping pill into place. Tripped to window and built volume to enable a trip to surface to lay down motor and MWD. Will return to bottom with a rotary assembly to drill ahead. Note 2: Held safety meeting with crew(s) re loss of circulation issues. Note 3: When running bit #23, the bit did not easily enter the window, had to circulate and rotate our way into the open hole. A set of mills to dress the window have been ordered and will arrive tomorrow.

(xiii) **FORMATION LEAK-OFF TESTS (FLOT):**

One Formation Leak-off test was conducted on drill out of 244.5mm casing on 2001.01.06.

See Attachment #6 for test results and charts.

(xiv) **TIME DISTRIBUTION:**

See Attachment #7, #8 and #9.

(xv) **DEVIATION SURVEY:**

See Attachment #10, Subsurface Directional Survey Report.

(xvi) **ABANDONMENT PLUGS:**

Type of Plug	Interval (mKB)	Felt	Cement (m^3)
Cement Plug #1	2841.0-2941.5	No	4.73
Cement Plug #2	2257.0-2400.0	Yes (10000 daN)	7.5
Cast Iron Bridge Plug	2255.0	Pressure Tested to 7 MPa	NA

(xvii) **COMPOSITE WELL RECORD:**

See Attachment #11, Lithology Strip Log, and Final Geological Well Report. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31).

([illegible])

(D) GEOLOGY:

(i) DRILL CUTTINGS:

(a) Sample frequency and distribution:

Canadian Forest Oil Ltd. and partners:

Interval:
0.0-2570.0m at 5.0m intervals
2570.0-2730.75m at 2.5m intervals
2366.8-2450.0m at 2.5m intervals
2302.2-2330.0m at 2.5m intervals
2301.2-2895.4m at 2.5m intervals
2895.4-2941.5m at 2.5m intervals

Two (2) sets of washed sample vials and trays.

Government: National Energy Board/Geological Survey of Canada

Interval:
0.0-2570.0m at 5.0m intervals
2570.0-2730.75m at 2.5m intervals
2366.8-2450.0m at 2.5m intervals
2302.2-2330.0m at 2.5m intervals
2301.2-2895.4m at 2.5m intervals
2895.4-2941.5m at 2.5m intervals

Two (2) sets of washed sample vials and trays.
One (1) set of dried unwashed sample bags.

(b) Distribution of samples: 4 sets of 7 ml vials, 1 set of bagged unwashed cuttings.

(c) Location of stored suites of samples:

2 sets of 7 ml vials and 1 set of bagged unwashed samples were shipped to the Geological Survey of Canada. Core and Sample Depository, 3303 - 33rd Street N. W., Calgary, Alberta T2L 2A7. Telephone 403-284-0110.

1 set of 7 ml vials was retained by the operator, Canadian Forest Oil Ltd., and stored at Kestrel Data (Canada) Limited, 4221 - 23 B Street N. E., Calgary, Alberta T2E 7V9. Telephone 403-250-1119.

(ii) CORES:

No cores were cut.

(iii) LITHOLOGY:

See Attachment #11, Lithology Strip Log, and Final Geological Well Report (by DAX Consulting Ltd.). Scale of Strip Log: 1:240

Previously submitted on September 17, 2001 with Final Well Report for Cdn Forest et al North Liard C-31.

(iv) STRATAGRAPHIC COLUMN:

Formation Name	Formation Age	General Lithology	KB Depth (Measured)	KB Depth (TVD)	Elevation (Subsea)	Thickness (TVD)
KB			0.0	0.0	488.0	
Ground			6.7	6.7	481.3	
Flett	Lower Miss.	Shale & Limestone	Samples caught from 0.0m	6.7	481.3	94.0
Yohin	Lower Miss.	Shale Limestone & Marlstone	94.0	94.0	394.0	140.0
Clausen	Lower Miss.	Sandstone Limestone & Marlstone	234.0	234.0	254.0	39.0
Yohin	Lower Miss.	Sandstone Limestone & Marlstone	273.0	273.0	215.0	28.0
Besa River Fault	Lower Miss.	Sandstone Limestone & Marlstone	301.0	301.0	187.0	51.1
Besa River	Lower Miss.	Shale	352.0	352.1	135.9	962.4
Banff	Lower Miss.	Shale	1318.8	1314.5	-826.5	222.9
Exshaw	Upper Devonian	Shale	1542.0	1537.4	-1049.5	55.6
Ft. Simpson	Middle Devonian	Shale	1598.0	1593.0	-1105.9	756.0
Horn River	Middle Devonian	Shale Sandstone Shale	2336.8	2330.4	-1842.4	534.9
Muskwa	Middle Devonian	—	Not	penetrated	—	
Nahanni	Middle Devonian	—	Not	penetrated	—	
T.D.	Middle Devonian		2941.5	2865.3	2377.3	

See Attachment #11 for detailed Lithology. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31)

(v) BIOSTRATAGRAPHIC DATA:

See Attachment #11. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31)

(E)

(E) WELL EVALUATION:

(i) OPEN HOLE LOGS:

A.

Date	Run #	Log Type	Interval (mKB)	Company
March 22, 2001	1	Slim Formation Micro Imager	2300-2895	Schlumberger
March 24, 2001	1	Cement Volume Log	2310-2875	Schlumberger
March 24, 2001	1	Gamma	2310-2875	Schlumberger

See Attachment #12 for Open Hole Logs and Attachment #15 Transmittal Letters.

(ii) OTHER LOGS:

CASED HOLE:

B. NONE

(iii) OTHER:

C.

Date	Run #	Log Type	Interval(mKB)	Company
March 22, 2001		Disc (ASCII Files)	2310-2875	HEF Petrophysical
March 22, 2001	1	Incline Computer Dipmeter	2310-2875	HEF Petrophysical
March 22, 2001	1	Borehole Ovality Plot	2310-2875	HEF Petrophysical
March 22, 2001	1	Dipmeter @ 1:1000 Scale (3 diff projections)	2310-2876	HEF Petrophysical
March 22, 2001	1	Dipmeter @ 1:5000 Scale (3 diff projections)	2310-2877	HEF Petrophysical
March 22, 2001	1	Measured Depth 1:240 Gamma Ray	2310-2878	HEF Petrophysical
March 22, 2001	1	Measured Depth 1:2000 Gamma Ray	2310-2879	HEF Petrophysical
March 22, 2001	1	TVD Depth 1:240 Gamma Ray	2310-2880	HEF Petrophysical
March 22, 2001	1	TVD Depth 1:1200 Gamma Ray	2310-2881	HEF Petrophysical

See Attachment #14 and Attachment #15 Transmittal Letters.

(iv) SYNTHETIC SEISMOGRAMS, VELOCITY SURVEYS, VERTICAL SEISMIC PROFILES:

See Attachment #16. (Same as for C-31 Final Well Report)

(v) FORMATION STIMULATION:

None.

(vi) FORMATION AND PRODUCTION TEST RESULTS:

None.

(vii) DETAILED TEST PRESSURE DATA READINGS:

None.

(F)

(F) ENVIRONMENTAL WELL REPORT:

Not Applicable. As the well is currently suspended, pending evaluation of possible testing of additional zones. It is important to note however, that no sumps for drilling were required as a closed mud system was used to drill the well. The wellsite and campsite have been cleaned up, including mix, cover and bury of campsite sumps.

(G) APPENDIXES TO WELL HISTORY REPORT:

(i) OIL, GAS AND WATER ANALYSIS:

Not applicable.

(ii) RESERVOIR ENGINEERING DATA ON CORES AND CUTTINGS, POROSITY, PERMEABILITY, FLUID SATURATION, DENSITY MEASUREMENTS, ETC.:

See Attachment #11 for cuttings analysis. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31)

(iii) PHOTOGRAPHIC RECORD OF CORE UNDER NATURAL AND ULTRA-VIOLET LIGHT:

No cores were cut.

(iv) DETAILS OF FORMATION & PRODUCTION TESTING:

None.

(v) PETROLOGICAL REPORTS:

Not Applicable.

(vi) PALEONTOLOGICAL REPORTS:

Not Applicable.

(vii) PALYNOLOGICAL REPORTS:

Not Applicable.

(viii) GEOCHEMICAL REPORTS:

Not Applicable.

(ix) AGE DETERMINATIONS (K/AR, ETC.):

Not Applicable.

(x) PROCESSED COMBINATION OF WELL LOGS:

Not Applicable.

(xi) DEVIATION AND DRIFT RECORDS:

See Section (C) (xv), Attachment #10.

(xii) GAS DETECTOR LOGS OR MUD LOGGING RECORDS.

See Section (C) (xvii), Attachment #11, Final Mud Logger's Report. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31)

(xiii) COMPLETION DATA SUCH AS PERFORATED INTERVALS, DOWNHOLE EQUIPMENT, TUBING & STIMULATION RECORDS:

See Attachment #17, Wellbore Schematic and Attachment #18 for Surface Equipment.

(xiv) COMPOSITE WELL RECORDS:

See Section (C) (xvii), Attachment #11, Lithology Strip Log. (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST ET AL NORTH LIARD C-31)

(xv) FINAL SURVEY PLAN:

See Attachment #19 for Final Survey plan. (To follow.)

(xvi) MUD DATA LOGGER'S REPORT:

See Section (C) (xvii), Attachment #11, Final Geological Well Report (Previously submitted on September 17, 2001 with Final Well Report for CDN FOREST et al NORTH LIARD C-31)

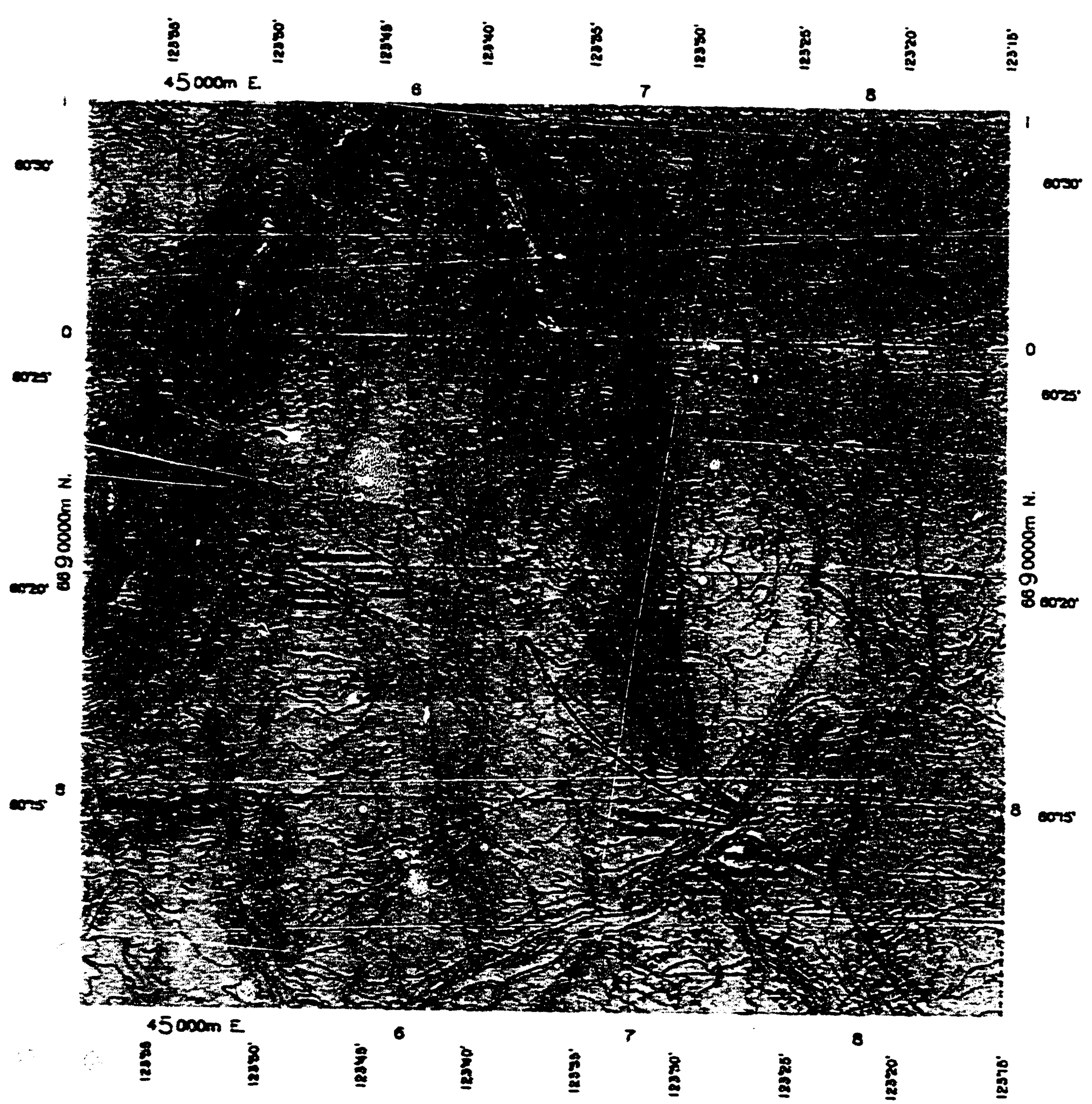


FIGURE 2: **Access Route**

for

CDN FOREST et al NORTH LIARD C-31
IN UNIT C, SECTION 31
GRID AREA : N.60°40',W.123°30'

NORTHWEST TERRITORIES

CANADIAN FOREST OIL LTD.

0 5,000 10,000 15,000 20,000 25,000 m

Scale 1:250,000

April 28th, 2000

SESL GEOMATICS
LAND SURVEYING & SURVEY ENGINEERING

Surveyor: Calculator:
Draftsperson: CW Chk'd: BA

Job No.: 00N003B

No.	Revision	Date
0	Original Issue	00/04/2

TOLL FREE 1-800-565-2389 PH. (403) 234-9018 FAX. (403) 266-2919

ATTACHMENT #2

OVERSIZED
DOCUMENT
FILMED
ON
35mm

B I T   R E C O R D

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A	AFE: 004005	SPUD DATE: 00/08/04
LOCATION: 300-C31-6040-12330-0	CONTRACTOR: AKITA DRILLING LTD.	RIG: 58E

Mon Nov 05 08:47:18 2001

RUN	BIT#	SIZE (mm)	TYPE	MAKE	SERIAL NUMBER	NOZZLE SIZE(mm) #1/4	#2/5	#3/6	--DEPTH-- IN	OUT	---ON BIT--- DRILL+CORE (m)	(hr)	REAMING (m)	(hr)	I-O-G-L	B-G-O-R	---ROP--- MIN (m/hr)	MAX (m/hr)	AVG (m/hr)	---WOB--- MIN daN	MAX daN	AVG daN	--RPM-- MIN	MAX	AVG	AVG MUD DEN
53	1M	215.9	SMITH		TM9503	0.0	0.0	0.0	2363		0	0.00	0	3.50	- - -	- -	0.0	0.0	0.0	1000	2000	1500	0	0	0	
54	2m	215.9	EHP51A	REED	TC1957	11.1	11.1	11.1	2363	2363	0	0.00	0	0.00	1-1-NO-A	E-I -NO-BHA	0.0	0.0	0.0	0	0	0	0	0	0	
55	3M	215.9	Mill	Smith	54546	0.0	0.0	0.0	2367	2369	3	1.00	0	0.00	- -	- -	3.0	3.0	3.0	1000	2000	1500	110	120	115	
56	4MRR	215.9	EHP51A	REED	TC1057	11.1	11.1	11.1	2370		80	19.50	0	0.00	2-2-NO-A	E-I -NO-BHA	2.0	4.8	3.4	1000	4000	2500	14	60	37	1579
57	5MRR	215.9	JD8	Hughes	F11226	11.1	11.1	11.1	2450	2450	0	0.00	0	0.00	3-3-WT-A	E-I -NO-BHA	0.0	0.0	0.0	1000	2000	1500	0	0	0	
57	MRR	215.9	JD8	Hughes	F11226	11.1	11.1	11.1	2450		0	0.00	0	0.00	- - -	- - -	0.0	0.0	0.0	1000	2000	1500	0	0	0	
58	6M	215.9	Mill	Smith	TM9506	0.0	0.0	0.0	2304		0	0.00	0	0.00	- - -	- - -	0.0	0.0	0.0	1000	2000	1500	0	0	0	
59	7M	215.9	GT-S1	HUGHES	N34ZF	11.1	11.1	11.1	2302	2302	0	0.00	0	0.00	2-2-CT-H	E-I -WT-BHA	0.0	0.0	0.0	1000	2000	1500	0	0	0	
60		215.9	MILL	SMITH		0.0	0.0	0.0	2302		0	0.00	0	0.00	- -	- - -	0.0	0.0	0.0	0	0	0	0	0	0	
60	8MRR	215.9	GT-S1	HUGHES	NZ34ZF	11.1	11.1	11.1	2302	2311	9	2.25	0	0.00	1-2-WT-A	E-I -WT-BHA	4.0	4.0	4.0	5000	14000	9500	80	90	85	1334
61	9MRR	215.9	JD8	HUGHES	TF11226	11.1	11.1	11.1	2311		0	0.00	0	0.00	2-2-wt-H	E-I -NO-BHA	0.0	0.0	0.0	0	0	0	0	0	0	
62	10MR	215.9	GTS1	HUGHES	NZ34ZF	0.0	0.0	0.0	2311	2330	19	3.00	16	3.00	4-6-WT-A	E-2 -RG-HP	6.3	6.3	6.3	1000	9000	5000	70	80	75	1343
63	11MR	215.9	JD8	HUGHES	TF11226	12.7	12.7	12.7	2330		0	0.00	0	0.00	2-3-BT-H	E-I -CT-BHA	0.0	0.0	0.0	0	0	0	0	0	0	
64	12	215.9	XV	HUGHES	133054	12.7	12.7	12.7	2302	2362	60	46.50	0	0.00	2-4-BT-H	F-2 -CT-HR	0.5	1.3	0.9	8000	13000	10500	90	100	95	1359
65	13	215.9	MF1P	SMITH	YE9528	14.3	14.3	14.3	2362		0	0.00	0	0.00	- - -	- - -	0.0	0.0	0.0	0	0	0	0	0	0	
65	13M	215.9	MF1P	SMITH	YE9528	14.3	14.3	14.3	2362		0	0.00	0	0.00	1-1-NO-A	E-I -NO-HP	0.0	0.0	0.0	0	0	0	0	0	0	
66	14M	215.9	GT-S18	HUGHES	R21DF	15.9	15.9	15.9	2362	2363	1	0.75	60	29.75	1-1-BT-H	E-I -NO-DTF	1.3	1.3	1.3	2000	12000	7000	80	90	85	1660
67	15M	215.9	ETD14M	VAREL	152189	15.9	15.9	15.9	2363	2400	37	30.00	0	0.00	2-3-CT-M2	E-I -WO-TQ	1.0	1.2	1.1	14000	15000	14500	90	120	105	1509
68	16M	215.9	GT-S18	HUGHES	R17DL	14.3	14.3	14.3	2400	2436	36	69.50	5	3.50	2-2-CT-H	E-I -WO-PR	0.4	0.8	0.6	15000	16000	15500	90	120	105	1647
69	17M	215.9	GT-S03	HUGHES	P55CF	12.7	12.7	12.7	436	2505	69	84.50	0	12.00	3-3-BT-M2	E-I -CT-HR	0.8	0.8	0.8	15000	16000	15500	90	120	105	1622
70	18M	215.9	GT-03	HUGHES	P63DA	15.9	15.9	15.9	2505	2586	81	84.50	55	16.50	8-8-BT-A	E-3 -JD-TQ	1.0	1.0	1.0	2000	15000	8500	90	120	105	1661

B I T   R E C O R D

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A   AFE: 004009   SPUD DATE: 00/08/04

LOCATION: 300-C31-6040-12330-0   CONTRACTOR: AKITA DRILLING LTD.   RIG: 58E

Mon Nov 05 08:47:18 2001

RUN	BIT#	SIZE (mm)	TYPE	MAKE	SERIAL NUMBER	NOZZLE SIZE (mm) #1/4	#2/5	#3/6	DEPTH IN	DEPTH OUT	ON BIT DRILL+CORE (m)	DRILL+CORE (hr)	REAMING (m)	REAMING (hr)	I-O-G-L	B-G-O-R	ROP MIN (m/hr)	ROP MAX (m/hr)	ROP AVG (m/hr)	WOB MIN daN	WOB MAX daN	WOB AVG daN	RPM MIN	RPM MAX	RPM AVG	AVG MUD DEN
71	19M	215.9	GT-03	HUGHES	P67DA	15.9	15.9	15.9	2586	2655	69	87.25	46	10.75	8-8-BT-A	E-4 -JD-PR	0.8	1.0	0.9	14000	16000	15000	90	120	105	1665
72	20M	215.9	GT-03	HUGHES	P65DA	15.9	15.9	15.9	2655		34	48.50	81	5.50	8-8-BT-A	E-I -JD-PR	0.7	0.8	0.8	14000	16000	15000	90	120	105	
73	21M	215.9	GT-09	HUGHES	D16DD	15.9	15.9	15.9	2689	2695	6	5.00	86	3.25	1-1-NO-A	E-I -NO-BHA	1.2	1.2	1.2	14000	15000	14500	90	120	105	1660
74	21MR	215.9	GT-09	HUGHES	R16DD	17.5	17.5	17.5	2695	2725	30	52.75	0	0.75	2-2-WT-A	E-I -NO-BHA	0.5	0.6	0.6	15000	16000	15500	65	70	67	1660
74	22MR	215.9	GT-09	HUGHES	D16DD	17.5	17.5	17.5	2695		24	40.75	0	0.75	- - -	- - -	0.6	0.6	0.6	15000	16000	15500	65	70	67	1659
75	22M	215.9	ETD14M	VAREL	152167	17.5	17.5	17.5	2725	2791	66	83.75	0	0.00	5-5-BT-A	F-2 -LT-HR	0.6	0.8	0.7	14000	15000	14500	30	110	70	1662
76	23M	215.9	EP4876	HUGHES	P31DP	17.5	17.5	17.5	2791		1	1.50	0	0.00	1-4-BT-H	E-I -CT-HP	0.7	0.7	0.7	14000	15000	14500	30	110	70	1650
77	24RR	215.9	EP4876	HUGHES	P31DP	0.0	0.0	0.0	2792	2811	19	31.75	0	0.00	4-5-BT-A	E-I -CT-BHA	0.6	0.6	0.6	14000	15000	14500	70	75	72	1656
78	25	215.9	MF1P	SMITH	YE9527	17.5	17.5	17.5	2811	2895	84	87.50	0	0.00	6-6-BT-A	F-4 -LC-PR	1.0	1.0	1.0	14000	15000	14500	30	110	70	1660
79	26	215.9	EP4876	HUGHES	P28DP	17.5	17.5	17.5	2895	2941	41	74.00	91	4.75	8-8-BT-A	F-5 -LC-PR	0.6	0.7	0.6	3000	15000	9000	90	120	105	1662
80	27MR	215.9	ETD14M	VAREL	152189	0.0	0.0	0.0	2257		0	0.00	0	0.00	- - -	- - -	0.0	0.0	0.0	0	0	0	0	0	0	

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A   AFE: 004009   SPUD DATE: 00/08/04

LOCATION: 300-C31-6040-12330-0   CONTRACTOR: AKITA DRILLING LTD.   RIG: 58E

Mon Nov 05 08:47:15 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	47	2367	1		Bit	TC1057	215.90	0.00	0.25	REG		4.5REG
4	47	2367	1		Motor @ 1.5	24-62188	160.00	70.00	6.13	H90	4.5REG	4.5H90
4	47	2367	1		Float sub	1016542	163.00	65.00	0.75	H90	4.5H90	4.5H90
4	47	2367	1		Restr Sub	1616549	166.00	72.00	0.75	H90	4.5H90	4.5H90
4	47	2367	1		Nonmag MWD	2116508	161.00	73.00	9.15	H90	4.5H90	4.5H90
4	47	2367	1		Nonmag Flex	2216535	163.00	72.00	9.35	H90	4.5H90	4.5H90
4	47	2367	1		Nonmag Flex	2216501R	161.00	71.00	9.13	H90	4.5H90	4.5H90
4	47	2367	1		Crossover	1316528	162.00	72.00	0.44	H90	4.5H90	4.5XH
4	47	2367	1		Orient Sub	Scientific	160.00	84.00	0.56	XH	4.5 XH	4.5 XH
4	47	2367	1		Crossover	X0003	156.00	73.00	0.36	IF	4.5 XH	4.5 IF
4	47	2367	7		HWDP	Rig	127.00	76.00	65.60	IF	4.5 IF	4.5 IF
4	47	2367	1		Jars	10137	160.00	52.00	5.36	IF	4.5 IF	4.5 IF
4	47	2367	23		HWDP	Rig	127.00	76.00	210.20	IF	4.5 IF	4.5 IF
									=======			
									318.03			
4	48	2367	1		Mill	Simth	215.90	0.00	1.76			
4	48	2367	1		SS95 DP	Akita	127.00	76.00	9.70	IF	4.5IF	4.5IF
4	48	2367	13		HWDP	Akita	127.00	76.00	119.75	IF	4.5IF	4.5IF
4	48	2367	1		Jars	10137	170.00	65.00	5.36	IF	4.5IF	4.5IF
4	48	2367	17		HWDP	Akita	161.00	76.00	156.05	IF	4.5IF	4.5IF
									=======			
									292.62			
4	49	2369	1		Bit	TC1057	215.90	0.00	0.25			4.5REG
4	49	2369	1		Motor @ 1.5	24-62188	160.00	70.00	6.13	H90	4.5REG	4.5H90
4	49	2369	1		Float Sub	1016542	163.00	65.00	0.75	H90	4.5H90	4.5H90
4	49	2369	1		Restr Sub	1616549	166.00	72.00	0.75	H90	4.5H90	4.5H90
4	49	2369	1		Nonmag MWD	2116508	161.00	73.00	9.15	H90	4.5H90	4.5H90
4	49	2369	1		Nonmag Flex	2216535	163.00	72.00	9.35	H90	4.5H90	4.5H90
4	49	2369	1		Nonmag Flex	2216501R	161.00	71.00	9.13	H90	4.5H90	4.5H90
4	49	2369	1		Crossover	1316528	162.00	72.00	0.44	XH	4.5XH	4.5H90
4	49	2369	1		Orient Sub	Scientific	160.00	84.00	0.56	XH	4.5XH	4.5XH
4	49	2369	1		Crossover	X0003	156.00	73.00	0.36	IF	4.5IF	4.5XH
4	49	2369	6		HWDP	Akita	127.00	76.00	65.55	IF	4.5IF	4.5IF
4	49	2369	1		Jars	10137	171.00	52.00	5.36	IF	4.5IF	4.5IF
4	49	2369	24		HWDP	Akita	127.00	76.00	210.25	IF	4.5IF	4.5IF
									=======			
									318.03			
4	50	2450	1		Bit	F11226	215.90	0.00	0.25			4.5REG
4	50	2450	1		Csg scraper	1596	233.00	60.00	1.10	REG	4.5REG	4.5REG
4	50	2450	1		Bit Sub	554	170.00	67.00	1.07	IF	4.5IF	4.5REG
4	50	2450	30		HWDP	Akita	166.00	72.00	275.87	IF	4.5IF	4.5IF
4	50	2450	1		Crossover	10788	168.00	67.00	0.29	H90	4.5IF	5H90
4	50	2450	3		Drill collar	Akita	170.00	57.00	27.43	H90	5H90	5H90
4	50	2450	1		Crossover		170.00	60.00	1.31	IF	4.5H90	4.5IF
									=======			
									307.32			
4	51	2304	1		Whipstock	95009C	203.00	0.00	5.52			
4	51	2304	1		Mill	TM9506	215.90	59.00	1.98	IF	4.5IF	
4	51	2304	1		Crossover	Smith	159.00	72.00	0.41	IF	4.5XH	4.5IF
4	51	2304	1		UBHO Sub	Scientific	160.00	84.00	0.56	XH	4.5XH	4.5XH
4	51	2304	1		Crossover	X003	156.00	73.00	0.36	IF	4.5IF	4.5XH
4	51	2304	1		SS95 DP	Akita	127.00	76.00	9.71	IF	5.4IF	4.5IF
									=======			
									18.54			
4	51	2304	1		Bit GT-S1	NZ34ZF	215.90	0.00	0.25			4.5REG
4	51	2304	1		MOTOR 2.12	24-62188	160.00	0.00	6.13		4.5REG	4.5H90
4	51	2304	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	51	2304	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	51	2304	1		MWD	2116508	161.00	73.00	9.15		4.5H90	4.5H90
4	51	2304	1		FLEX COLLAR	2216535	163.00	72.00	9.35		4.5H90	4.5H90

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A		AFE: 004009	SPUD DATE: 00/08/04
LOCATION: 300-C31-6040-12330-0	CONTRACTOR: AKITA DRILLING LTD.		RIG: 58E

Mon Nov 05 08:47:15 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	51	2304	1		FLEX COLLAR	2216501R	161.00	71.00	9.13		4.5H90	4.5H90
4	51	2304	1		X/O	1316528	162.00	72.00	0.44		4.5 XH	4.5H90
4	51	2304	1		ORIENT SUB	SCIENTIFIC	160.00	84.00	0.56		4.5 XH	4.5 XH
4	51	2304	1		X/O	X0003	156.00	73.00	0.36		4.5 IF	4.5 XH
4	51	2304	7		HWDP	AKITA	127.00	0.00	65.60		4.5 IF	4.5 IF
4	51	2304	1		JARS	10137	171.00	52.00	5.36		4.5 IF	4.5 IF
4	51	2304	23		HWDP	AKITA	127.00	0.00	210.20		4.5 IF	4.5 IF
									318.03			
4	53	2304	1		DUAL MILL	SMITH	170.00	0.00	1.76		4.5 IF	4.5REG
4	53	2304	1		SS95 D.P.	AKITA	127.00	0.00	9.71		4.5 IF	4.5 IF
4	53	2304	13		HWDP	AKITA	127.00	0.00	119.63		4.5 IF	4.5 IF
4	53	2304	1		JARS	10137	171.00	52.00	5.36		4.5 IF	4.5 IF
4	53	2304	17		HWDP	AKITA	127.00	0.00	156.17		4.5 IF	4.5 IF
									292.63			
4	54	2304	1		GT-SI	N34ZF	215.90	0.00	0.25			4.5 REG
4	54	2304	1		MOTOR 1.83	62008	160.00	0.00	6.21		4.5REG	4.5H90
4	54	2304	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	54	2304	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	54	2304	1		NM FLEX	2216535	163.00	72.00	9.35		4.5H90	4.5H90
4	54	2304	1		NM FLEX	2216501R	161.00	71.00	9.13		4.5H90	4.5H90
4	54	2304	1		X/O	1316528	162.00	72.00	0.44		4.5 XH	4.5H90
4	54	2304	1		ORIENTING S	SCIENTIFIC	160.00	84.00	0.56		4.5 XH	4.5 XH
4	54	2304	1		X/O	SMITH X0003	156.00	73.00	0.36		4.5 IF	4.5 XH
4	54	2304	7		HWDP	AKITA	127.00	0.00	65.60		4.5 IF	4.5 IF
4	54	2304	1		JARS	10135	174.00	65.00	5.43		4.5 IF	4.5 IF
4	54	2304	23		HWDP	AKITA	127.00	0.00	210.20		4.5 IF	4.5 IF
									309.03			
4	55	2311	1		JD-8	TF11226	215.90	0.00	0.25			4.5 REG
4	55	2311	1		MOTOR 1.83	62008	160.00	0.00	6.21		4.5REG	4.5H90
4	55	2311	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	55	2311	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	55	2311	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5H90	4.5H90
4	55	2311	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5H90	4.5H90
4	55	2311	1		NM FLEX	2216535	163.00	72.00	9.35		4.5H90	4.5H90
4	55	2311	1		NM FLEX	2216501R	161.00	71.00	9.13		4.5H90	4.5H90
4	55	2311	1		X/O	1316528	162.00	72.00	0.44		4.5 XH	4.5H90
4	55	2311	1		ORIENTING S	SCIENTIFIC	160.00	84.00	0.56		4.5 XH	4.5 XH
4	55	2311	1		X/O	SMITH X0003	156.00	73.00	0.36		4.5 IF	4.5 XH
4	55	2311	7		HWDP	AKITA	127.00	0.00	65.60		4.5 IF	4.5 IF
4	55	2311	1		JARS	10698	172.00	65.00	5.67		4.5 IF	4.5 IF
4	55	2311	23		HWDP	AKITA	127.00	0.00	210.20		4.5 IF	4.5 IF
									320.51			
4	55	2311	1		RTTS PACKER		209.50	0.00	1.97		4.5 IF	4.5 IF
4	55	2311	30		HWDP	AKITA	127.00	0.00	275.80		4.5 IF	4.5 IF
									277.77			
4	57	2311	1		BIT GTSI	NZ34ZF	215.90	0.00	0.25			4.5REG
4	57	2311	1		BITSUB FLOAT	46727	127.00	66.00	1.19		4.5H90	4.5REG
4	57	2311	1		DRILL COLLAR	502340	158.00	59.00	9.47		4.5H90	4.5H90
4	57	2311	1		DRILL COLLAR	502343	161.00	59.00	9.44		4.5H90	4.5H90
4	57	2311	1		DRILL COLLAR	502344	159.00	59.00	9.47		4.5H90	4.5H90
4	57	2311	1		X/O	502497	159.00	71.00	0.65		4.5 IF	4.5H90
4	57	2311	7		HWDP	AKITA	127.00	77.00	65.60		4.5 IF	4.5 IF
4	57	2311	1		JARS	10698	172.00	65.00	5.67		4.5 IF	4.5 IF
4	57	2311	23		HWDP	AKITA	127.00	77.00	210.20		4.5 IF	4.5 IF
									311.94			

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A		AFE: 004009	SPUD DATE: 00/08/04
LOCATION: 300-C31-6040-12330-0	CONTRACTOR: AKITA DRILLING LTD.		RIG. 58E

Mon Nov 05 08:47.16 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	58	2330	20		Drill Pipe		88.90	66.06	189.27		3.5 IF	3.5 IF
4	58	2330	1		X/O		159.00	67.00	0.57		4.5 IF	3.5 IF

									191.70			
4	59	2330	1		BIT JD8	TF11226	215.90	0.00	0.25			4.5REG
4	59	2330	1		BITSUB FLOAT	46727	158.00	66.00	1.19		4.5H90	4.5REG
4	59	2330	3		DRILLCOLLARS	502344	159.00	59.00	28.38		4.5H90	4.5H90
4	59	2330	1		X/O	502497	159.00	71.00	0.65		4.5 IF	4.5H90
4	59	2330	7		HWDP	AKITA	127.00	77.00	65.60		4.5 IF	4.5 IF
4	59	2330	1		JARS	10698	172.00	65.00	5.67		4.5 IF	4.5 IF
4	59	2330	23		HWDP	AKITA	127.00	77.00	210.20		4.5 IF	4.5 IF

									311.94			
4	60	2302	1		BIT XV	133054	215.90	0.00	0.25			4.5REG
4	60	2302	1		MOTOR 1.83	4016535	160.00	0.00	6.29		4.5H90	4.5REG
4	60	2302	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	60	2302	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	60	2302	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5H90	4.5H90
4	60	2302	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5H90	4.5H90
4	60	2302	1		NM FLEX	2216523	163.00	72.00	9.25		4.5H90	4.5H90
4	60	2302	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5H90	4.5H90
4	60	2302	1		X/O	1316528	161.00	71.00	0.44		4.5 XH	4.5H90
4	60	2302	1		ORIENTING	SCIENTIFIC	160.00	84.00	0.56		4.5 XH	4 XH
4	60	2302	1		X/O	SMITH X003	156.00	73.00	0.36		4.5 IF	4.5 XH
4	60	2302	7		HWDP	AKITA	127.00	77.00	65.60		4.5 IF	4.5 IF
4	60	2302	1		JARS	10698	174.00	65.00	5.67		4.5 IF	4.5 IF
4	60	2302	23		HWDP	AKITA	127.00	77.00	210.20		4.5 IF	4.5 IF

									320.49			
4	61	2362	1		BIT MF1P	YE9528	215.90	0.00	0.25			4.5REG
4	61	2362	1		MOTOR 1.83	4016535	160.00	0.00	6.29		4.5H90	4.5REG
4	61	2362	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	61	2362	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	61	2362	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5H90	4.5H90
4	61	2362	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5H90	4.5H90
4	61	2362	1		NM FLEX	2216523	163.00	72.00	9.25		4.5H90	4.5H90
4	61	2362	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5H90	4.5H90
4	61	2362	1		X/O	1316528	161.00	71.00	0.48		4.5 IF	4.5H90
4	61	2362	7		HWDP	AKITA	127.00	77.00	65.60		4.5 IF	4.5 IF
4	61	2362	1		JARS	10698	174.00	65.00	5.67		4.5 IF	4.5 IF
4	61	2362	23		HWDP	AKITA	127.00	77.00	210.20		4.5 IF	4.5 IF

									319.61			
4	61	2362	1		SCREW IN SUB	CANFISH	159.00	70.00	1.10		4.5 IF	4.5 IF
4	61	2362	1		BUMPER SUB	CANFISH	160.00	58.00	2.52		4.5 IF	4.5 IF
4	61	2362	1		JARS	CANFISH	159.00	57.00	2.48		4.5 IF	4.5 IF
4	61	2362	1		X/O	CANFISH	160.00	70.00	0.51		4.5H90	4.5 IF
4	61	2362	6		DRILL COLLAR	WEATHERFORD	159.00	59.00	56.75		4.5H90	4.5H90
4	61	2362	1		INTENSIFYER	CANFISH	154.00	51.00	2.73		4.5H90	4.5H90
4	61	2362	1		X/O	CANFISH	160.00	66.00	0.49		4.5 IF	4.5H90

									66.58			
4	62	2362	1		Bit GT-S18	R21DF	215.90	0.00	0.25			4.5 REG
4	62	2362	1		ABH MOTOR	4016520	165.00	0.00	6.20		4.5 REG	4.5 H90
4	62	2362	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	62	2362	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	62	2362	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	62	2362	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	62	2362	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	62	2362	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A AFE: 004009 SPUD DATE: 00/08/04

LOCATION: 300-131-6040-12330-0 CONTRACTOR: AKITA DRILLING LTD. RIG: 58E

Mon Nov 05 08:47:16 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	62	2362	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	62	2362	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	62	2362	1		JARS	10135	174.00	65.00	5.43		4.5 IF	4.5 IF
4	62	2362	21		HWDP	AKITA	127.00	77.00	192.48		4.5 IF	4.5 IF
									300.52			
4	63	2363	1		Bit ETD14MS	152189	215.90	0.00	0.25			4.5 REG
4	63	2363	1		ABH MOTOR	2416511	160.00	0.00	6.64		4.5 REG	4.5 H90
4	63	2363	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	63	2363	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	63	2363	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	63	2363	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	63	2363	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	63	2363	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	63	2363	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	63	2363	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	63	2363	1		JARS	10135	174.00	65.00	5.43		4.5 IF	4.5 IF
4	63	2363	21		HWDP	AKITA	127.00	77.00	192.48		4.5 IF	4.5 IF
									300.96			
4	64	2400	1		Bit GT-S18	R17DL	215.90	0.00	0.25			4.5 REG
4	64	2400	1		ABH MOTOR	2416511	160.00	0.00	6.64		4.5 REG	4.5 H90
4	64	2400	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	64	2400	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	64	2400	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	64	2400	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	64	2400	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	64	2400	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	64	2400	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	64	2400	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	64	2400	1		JARS	10135	174.00	65.00	5.43		4.5 IF	4.5 IF
4	64	2400	21		HWDP	AKITA	127.00	77.00	192.48		4.5 IF	4.5 IF
									300.96			
4	65	2436	1		Bit GT-S03	P55CF	215.90	0.00	0.25			4.5 REG
4	65	2436	1		ABH MOTOR	2416511	160.00	0.00	6.64		4.5 REG	4.5 H90
4	65	2436	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	65	2436	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	65	2436	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	65	2436	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	65	2436	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	65	2436	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	65	2436	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	65	2436	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	65	2436	1		JARS	10135	174.00	65.00	5.43		4.5 IF	4.5 IF
4	65	2436	21		HWDP	AKITA	127.00	77.00	192.48		4.5 IF	4.5 IF
									300.96			
4	66	2505	1		Bit GT-S03	P63DA	215.90	0.00	0.25			4.5 REG
4	66	2505	1		ABH MOTOR	4016535	159.00	0.00	6.29		4.5 REG	4.5 H90
4	66	2505	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	66	2505	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	66	2505	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	66	2505	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	66	2505	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	66	2505	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	66	2505	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	66	2505	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	66	2505	1		JARS	10137	174.00	65.00	5.36		4.5 IF	4.5 IF
4	66	2505	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.57			

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME. CDN FOREST ET AL NORTH LIARD C-31-A   AFE: 004009   SPUD DATE: 00/08/04

LOCATION: 300-C31-6040-12330-0   CONTRACTOR: AKITA DRILLING LTD.   RIG: 58E

Mon Nov 05 08:47:16 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	67	2505	1		ABH MOTOR	4016501	161.00	0.00	6.49		4.5 REG	4.5 H90
4	67	2505	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	67	2505	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	67	2505	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	67	2505	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	67	2505	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	67	2505	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	67	2505	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	67	2505	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	67	2505	1		JARS	10137	174.00	65.00	5.36		4.5 IF	4.5 IF
4	67	2505	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.77			

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	68	2655	1		Bit GT-S03	P65DA	215.90	0.00	0.25			4.5 REG
4	68	2655	1		ABH MOTOR	4016510	161.00	0.00	6.49		4.5 REG	4.5 H90
4	68	2655	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	68	2655	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	68	2655	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	68	2655	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	68	2655	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	68	2655	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	68	2655	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	68	2655	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	68	2655	1		JARS	10137	174.00	65.00	5.36		4.5 IF	4.5 IF
4	68	2655	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.77			

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	69	2689	1		Bit GT-09	R16DD	215.90	0.00	0.25			4.5 REG
4	69	2689	1		ABH MOTOR	4016505	161.00	0.00	6.11		4.5 REG	4.5 H90
4	69	2689	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	69	2689	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	69	2689	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	69	2689	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	69	2689	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	69	2689	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	69	2689	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	69	2689	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	69	2689	1		JARS	10709	174.00	65.00	5.83		4.5 IF	4.5 IF
4	69	2689	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.86			

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	70	2695	1		Bit GT-09	R1[illegible]	215.90	0.00	0.25			4.5 REG
4	70	2695	1		BIT SUB	46727	161.00	60.00	1.47		4.5 REG	4.5 H90
4	70	2695	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	70	2695	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	70	2695	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	70	2695	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	70	2695	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	70	2695	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	70	2695	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	70	2695	1		JARS	10709	174.00	65.00	5.83		4.5 IF	4.5 IF
4	70	2695	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									313.47			

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	70	2695	1		Bit ETD14MS	R16DD	215.90	0.00	0.25			4.5 REG
4	70	2695	1		MOTOR8/2.1.5	46727	162.00	60.00	1.4[illegible]		4.5 REG	4.5 H90
4	70	2695	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	70	2695	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	70	2695	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	70	2695	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	70	2695	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	70	2695	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A   AFE: 004009   SPUD DATE: 00/08/24

LOCATION: 300-C31-6040-12330-0   CONTRACTOR: AKITA DRILLING LTD.   RIG: 58E

Mon Nov 05 08:47:16 2001

HOLE #	BHA #	DEPTH IN (m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	70	2695	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	70	2695	1		JARS	10709	174.00	65.00	5.83		4.5 IF	4.5 IF
4	70	2695	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									313.47			
4	71	2725	1		BIT#22 ETD14	152067	215.90	75.00	0.25			4.5 REG
4	71	2725	1		MTR @ 1.5deg	4016505	161.00	0.00	6.11		4.5 H90	4.5 REG
4	71	2725	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	71	2725	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	71	2725	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	71	2725	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	71	2725	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	71	2725	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	71	2725	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	71	2725	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	71	2725	1		JARS	10709	174.00	65.00	5.83		4.5 IF	4.5 IF
4	71	2725	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.86			
4	72	2791	1		BIT#23 EP487	P31DP7	215.90	75.00	0.25			4.5 REG
4	72	2791	1		MTR @ 1.5deg	4016519A	165.00	0.00	6.20		4.5 H90	4.5 REG
4	72	2791	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5 H90	4.5 H90
4	72	2791	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5 H90	4.5 H90
4	72	2791	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5 H90	4.5 H90
4	72	2791	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5 H90	4.5 H90
4	72	2791	1		NM FLEX	2216523	163.00	72.00	9.25		4.5 H90	4.5 H90
4	72	2791	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5 H90	4.5 H90
4	72	2791	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	72	2791	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	72	2791	1		JARS	10930	174.00	70.00	5.82		4.5 IF	4.5 IF
4	72	2791	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.94			
4	73	2792	1		BIT#24RR 487	P31DP7	215.90	75.00	0.25			4.5 REG
4	73	2792	1		BIT SUB		160.00	60.00	1.47		4.5H90	4.5 REG
4	73	2792	1		DC		160.00	60.00	9.46		4.5H90	4.5H90
4	73	2792	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	73	2792	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	73	2792	1		JARS	10930	174.00	70.00	5.82		4.5 IF	4.5 IF
4	73	2792	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									292.55			
4	74	2811	1		BIT#25M MF1P	YE9527	215.90	75.00	0.25			4.5 REG
4	74	2811	1		MTR @ 1.5deg	4016519A	165.00	0.00	6.20		4.5H90	4.5 REG
4	74	2811	1		FS	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	74	2811	1		RS	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	74	2811	1		MWD NMDC	2116541	157.00	85.00	9.26		4.5H90	4.5H90
4	74	2811	1		ES	2416[illegible]	164.00	84.00	1.98		4.5H90	4.5H90
4	74	2811	1		NM HW	2216[illegible]	163.00	72.00	9.25		4.5H90	4.5H90
4	74	2811	1		NM HW	221650[illegible]	162.00	72.00	9.13		4.5H90	4.5H90
4	74	2811	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5 H90
4	74	2811	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	74	2811	1		JARS	10930	174.00	70.00	5.82		4.5 IF	4.5 IF
4	74	2811	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									318.94			
4	75	2895	1		LOGGING TOOL		0.00	0.00	13.94			
									13.94			
4	76	2895	1		DRILL PIPE	AKITA	127.00	101.00	9.69		4.5 IF	4.5 IF

PROPOSED EXPLORATORY WELL
CDN FOREST et al NORTH LIARD C–31
IN UNIT C, SECTION 31
GRID AREA N.60°40' , W.123°30'

Directionally Drilled from a Surface Location in C–31 To a Bottom Hole Location in B–31

NORTHWEST TERRITORIES

SCALE: 1:250

50 0 50 100 150 200m

NOTE :
Elevations are derived from GPS observations taken from Geodetic bench Marks 83T391 (295.084m) and 83T390 (314.112m) using geoid model GSD 95

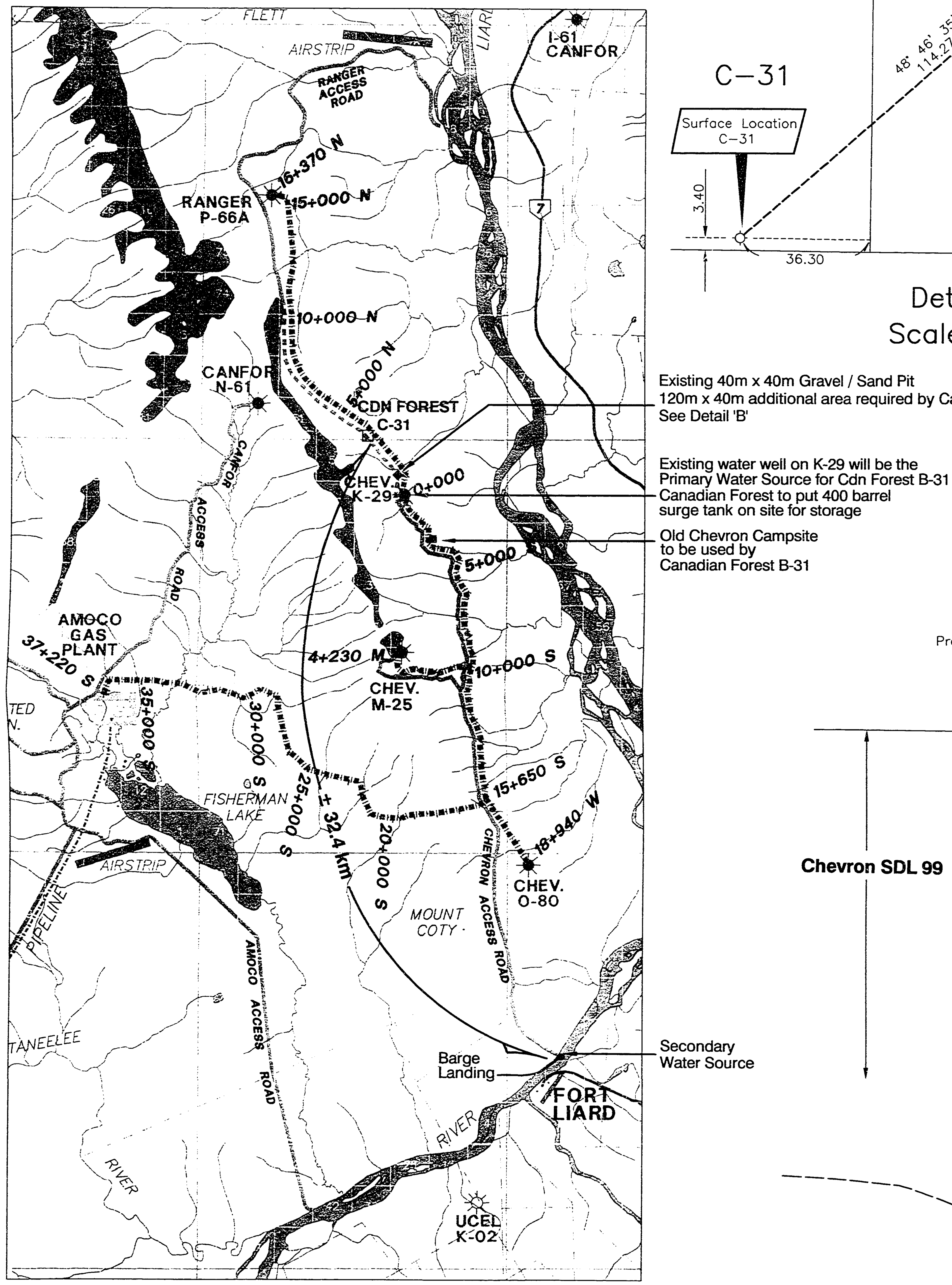
Well Centre Location	Latitude	Longitude	Northings	Eastings
C–31	60°30'00.3158"	123°36'36.1336"	6707056.795	466487.399
Bottom Hole Location	Latitude	Longitude	Northings	Eastings
B–31	60°30'02.77"	123°36'30.55"	6707132.06	466573.32

The co-ordinates shown in this table are NAD 1927 Datum.

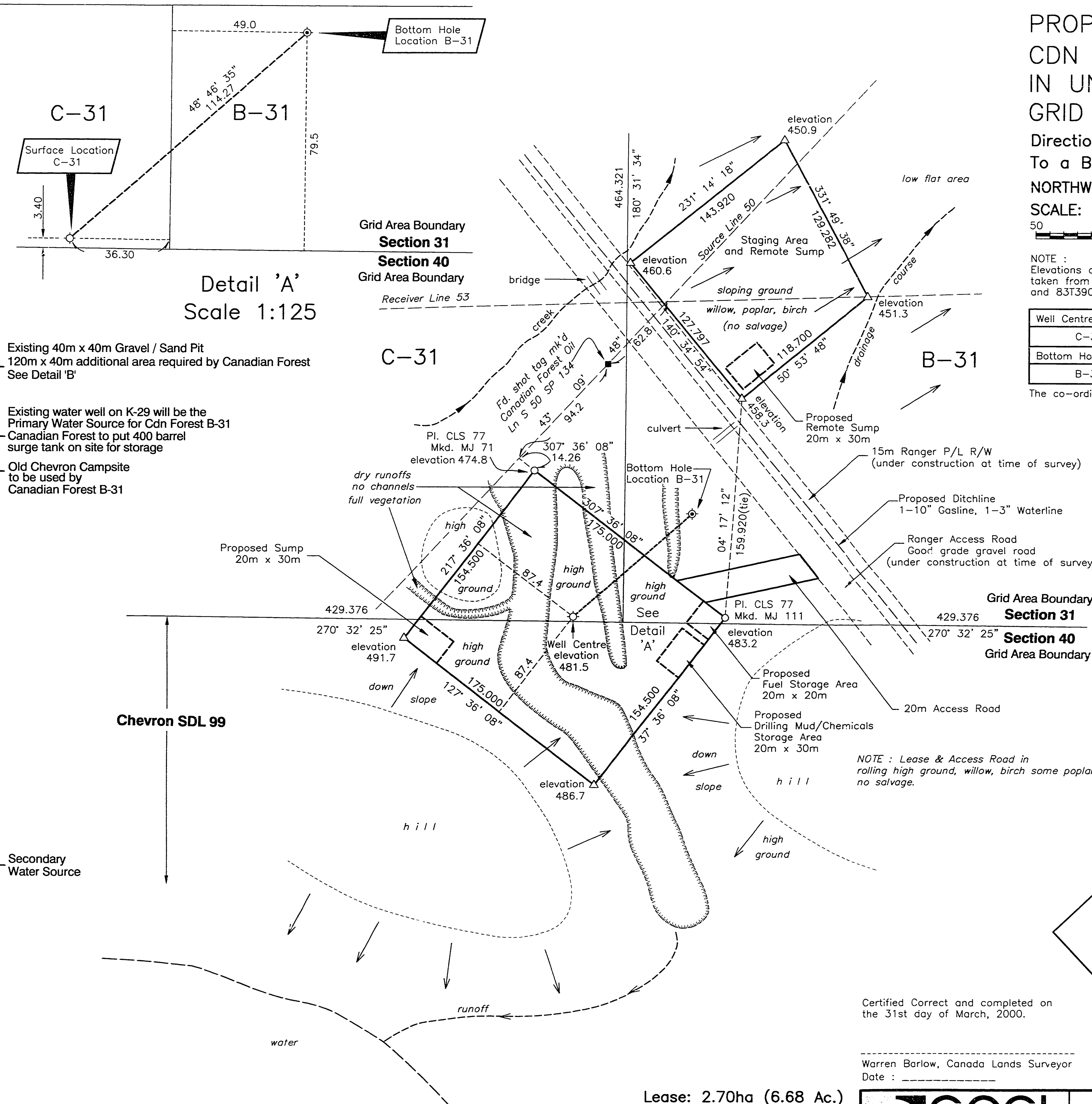
CANADIAN FOREST OIL LTD.

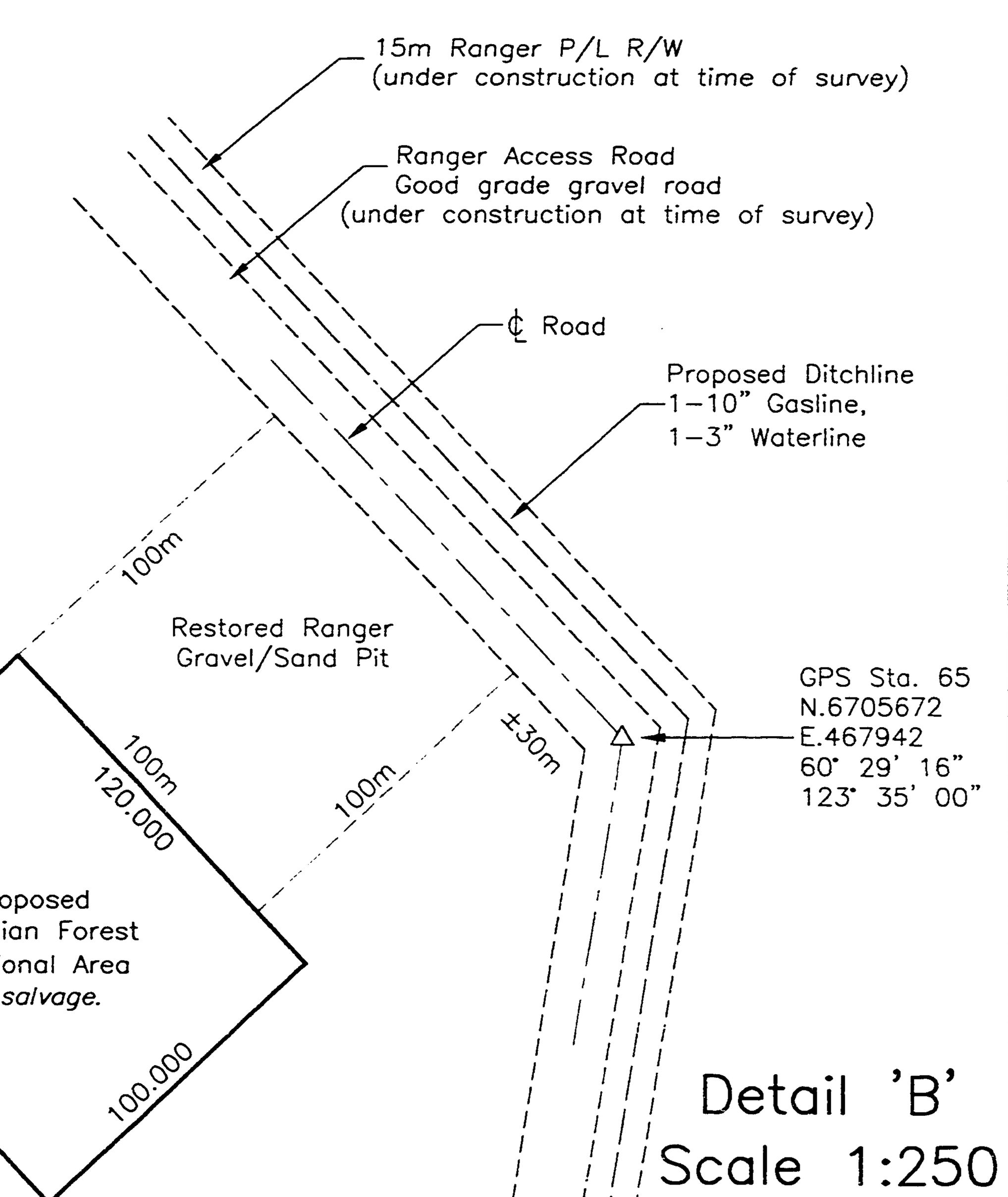
Witness

Date



Location Plan
Scale 1:200000





Detail 'B'
Scale 1:250

Certified Correct and completed on the 31st day of March, 2000.

Warren Barlow, Canada Lands Surveyor
Date : ____________

Lease: 2.70ha (6.68 Ac.)
Access Road: 0.175ha (0.43 Ac.)
Staging Area and Remote Sump: 1.67ha (4.13 Ac.)
Additional Area: 1.20ha (2.96 Ac.)

SESL GEOMATICS
LAND SURVEYING & SURVEY ENGINEERING

Surveyor: RL Calculator: BB
Draftsperson: MEC Chk'd: BB/BA/WB

Job No.: 00N003

TOLL FREE 1 800 565 2389 PH. (403) 234 9018 FAX. (403) 266 2919

No.	Revision	Date
2	Revised Bottom Hole	16-04-2001
1	Additional Area Added	17-04-2000
0	Original Issue	11-04-2000

SHEET 1 of 1

16X

PAJAK ENGINEERING LTD.

BOTTOM HOLE ASSEMBLY RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A AFE: 004009 SPUD DATE: 00/08/04

LOCATION: 300-C31-6040-12330-0 CONTRACTOR: AKITA DRILLING LTD. RIG: 58E

Mon Nov 05 08:47:16 2001

HOLE #	BHA #	DEPTH IN(m)	QTY	CODE	DESCRIPTION	SERIAL #	O.D. (mm)	I.D. (mm)	LENGTH (m)	THREAD TYPE	BOX	PIN
4	76	2895	1		RTTS PACKER	HALLIBURTON	0.00	0.00	1.96		4.5 IF	4.5 IF
4	76	2895	30		HWDP	AKITA	127.00	0.00	275.18		4.5 IF	4.5 IF
									286.83			
4	77	2895	1		BIT EP4876	P32DP	215.90	0.00	0.25			4.5REG
4	77	2895	1		MOTOR 1.5deg	4016530	166.00	0.00	6.62		4.5REG	4.5H90
4	77	2895	1		FLOAT SUB	1016542	163.00	65.00	0.75		4.5H90	4.5H90
4	77	2895	1		RESTRICTOR	1616549	166.00	72.00	0.75		4.5H90	4.5H90
4	77	2895	1		MWD COLLAR	2116541	157.00	85.00	9.26		4.5H90	4.5H90
4	77	2895	1		NM EXT SUB	2416502	164.00	84.00	1.98		4.5H90	4.5H90
4	77	2895	1		NM FLEX	2216523	163.00	72.00	9.25		4.5H90	4.5H90
4	77	2895	1		NM FLEX	2216501R	162.00	72.00	9.13		4.5H90	4.5H90
4	77	2895	1		X/O	CS650-01	164.00	64.00	0.48		4.5 IF	4.5H90
4	77	2895	7		HWDP	AKITA	127.00	77.00	64.56		4.5 IF	4.5 IF
4	77	2895	1		JARS	10930	174.00	70.00	5.82		4.5 IF	4.5 IF
4	77	2895	23		HWDP	AKITA	127.00	77.00	210.51		4.5 IF	4.5 IF
									319.36			
4	78	2941	1		CMT.STINGER		88.90	66.09	143.85		3.5 IF	3.5 IF
4	78	2941	1		X/O		88.90	66.09	0.58		4.5 IF	3.5 IF
									144.43			
4	79	2941	1		BIT FTD14MS	152189	215.90	0.00	0.25			4.5 REG
4	79	2941	1		SCRAPPER		0.00	0.00	1.11		4.5 REG	4.5 REG
4	79	2941	1		BIT SUB	554	0.00	0.00	1.07		4.5 IF	4.5 REG
4	79	2941	30		HWDP	AKITA	127.00	77.00	275.07		4.5 IF	4.5 IF
									277.50			
									0.00			

ATTACHMENT #4

ATTACHMENT #4

End Well Report
Canadian Forest Oil Ltd.
CDN FOREST ET AL NORTH LIARD C-31A

Casing & Cement Record

Casing Size (mm)	Weight (kg/m)	Grade	Make	No. Joints	Thread	Date Set	Depth Set (m)		Cement Volume (tonnes)	Cement Volume (m^3)	Cement Blend
762.0	147.2	A252	Cam	2	PE	00.07.27	25.0		21.0	27.63	0:1:0 "G" + 3.0% $CaCl_2$
508.0	195.0	K-55		15	CVE	00.08.10	190.0		80.0	60.12	0:1:0 "G" + 1.0% $CaCl_2$
339.7	101.19	K-55	Tamsa	55	BT&C	00.08.21	710.3		105.0	80.4	0:1:0 "G" + 0.5% CFR + 0.3% LTR
									5.0	3.8	0:1:0 "G" + 3.0% $CaCl_2$
244.5	80.0	HCL-80	Lonestar	189	BT&C	00.12.20	2630.0	Fill	30.0	22.5	Thermal 40 + 1.0% CFR + 0.35% CFL-2 + 0.35% CFL-H + 0.15% HTR-2, 6L FA-1/m^3
								Tail	53.0	37.51	Thermal 40 + 0.7% CFR + 0.7% CFL-2 + 0.2% LTR

PAJAK ENGINEERING LTD.

CEMENTING REPORT

WELL NAME:	CDN FOREST ET AL NORTH LIARD C-31-A	DATE:	01/04/01	RPT #:	5
LOCATION:	300-C31-6040-12330-0	AFE #:	004009	DFS:	
		CEMENT JOB ID (**):	P		
SUPERVISOR:	LEBEUF/AUBIN	STRING IDENTIFIER (*):			
PHONE #:	(600) 701-3227	CALLING CARD #:			

(*) STRING IDENTIFIERS
C = Conductor
S = Surface
I = Intermediate
P = Production
L = Liner

(**) JOB IDENTIFIERS
P = Primary S = Squeeze

Summary

	CEMENT INTERVAL				ANNULAR VOLUME (m3)
1st STAGE	2941.0	m KB	2841.0	m KB	CALIPER
2nd STAGE		m KB		m KB	GAUGE
3rd STAGE		m KB		m KB	SLURRY (actual)

Job Details

HOLE SIZE: mm
CASING O.D.: mm
SHOE DEPTH: m KB
MAX. RECORDED BHT: 137 deg C

(***) JOB TYPES
1 = Conventional
2 = Foam

JOB TYPE (***): 1
PROPOSED CEMENT TOP: 2841.00 m KB
MAXIMUM DEVIATION: 35.00 deg @ 2941.00 m KB

Comments

Tripped in hole with 88.9mm cement stinger.Once in open hole circulated every 2 stands.Once on bottom circulated hole clean.Held safety meeting with crews and sanjel cementers prior to cementing.Cemented plug#1 on bottom from 2941mKB to 2841mKB.Pulled out of plug #1 and broke circulation just enough to see returns.Continued to trip out of hole to plug #2.

Mud Data (prior to cementing)

TYPE: K MINUS
DENSITY: 1660.00 kg/m3
VISCOSITY: 80.00 sec/l
YIELD POINT: 24.00 Pa
WATER LOSS: 8.50 ml/30 min
P. V. 21.00 mPa - sec
GELS 20.00 / 29.00 Pa

Plug Type

TOP:
BOTTOM:
OTHER:

Cement Head

TYPE:

Pipe Movement

WHILE:	CONDITIONING	CEMENTING
TYPE		
STROKE (m)		
RATE (stks/min)		

Stage Tools

TYPE	
DEPTH (m KB)	

Mix Water

FRESH

Services & Equipment

CEMENT COMPANY: Sanjel
REPRESENTATIVE: Richard Harasen
EQUIPMENT: Twin,pumper

STAGE ONE

A. Cement Blend Description

	CEMENT TYPE	ADDITIVES	PREFLUSH TYPE	PREFLUSH VOL (m3)
SCAVENGER			FRESH WATER	4.00
FILL				
TAIL	Thermal 40	1% CFR .4% LTR .9% CFL-2 1% FWCA-H		
OTHER				

B. Cement Data

	CEMENTED INTERVAL (m) to (m)	ANNULAR VOLUME (m3)	EXCESS USED (%)	SLURRY VOLUME (m3)	BULK WEIGHT (tonnes)	YIELD (m3/t)	SLURRY DENSITY (kg/m3)	THICK TIME (mins)	MIX WATER RATIO (m3/t)	MIX WATER TEMP (deg C)
SCAVENGER	-			0.00						
FILL	-									
TAIL	2841.0 - 2941.0	4.73	50	7.10	9.50	0.750	1885.00	427	0.410	3.00
OTHER	-									

CD 06/97

PAJAK ENGINEERING LTD.

CEMENTING REPORT

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A	DATE: 01/04/01	RPT #: 5	(*) STRING IDENTIFIERS C = Conductor S = Surface I = Intermediate P = Production L = Liner
LOCATION: 300-C31-6040-12330-0	AFE #: 004009	DFS:	
	CEMENT JOB ID (**): P		
SUPERVISOR: LEBEUF/AUBIN	STRING IDENTIFIER (*):		
PHONE #: (600) 701-3227 CALLING CARD #:			(**) JOB IDENTIFIERS P = Primary S = Squeeze

C. Record of Operations

OPERATION DESCRIPTION	START TIME (day / hr:min)	FINISH TIME (day / hr:min)	ELAPSED TIME	VOLUME (m3)	RATE (m3/min)	PRESSURE (kPa) MAX.	MIN.
MUD CONDITIONING	31 / 19 : 45	31 / 21 : 15	1.50	92.0	1.2	8100	8100
POOH W/ DRILL PIPE	/ :	/ :					
RIH W/ CASING	/ :	/ :					
CIRCULATION	/ :	/ :					
CEMENTING - PREFLUSH	31 / 21 : 16	31 / 21 : 23	0.12	4.0	0.8	10000	9000
- SCAVENGER	/ :	/ :					
- FILL	/ :	/ :					
- TAIL	31 / 21 : 27	31 / 21 : 34	0.12	7.1	1.0	11000	8000
- OTHER	/ :	/ :					
RLSE TOP PLUG & PO LINES	/ :	/ :					
DISPLACEMENT	31 / 21 : 34	31 / 21 : 58	0.40	25.2	1.0	11000	10000
BUMP PLUG & BLEED OFF	/ :	/ :					
CEMENT RETURNS	TYPE:		VOLUME:	m3			
FLOAT HELD	YES ☐	NO ☒					

STAGE TWO

A. Cement Blend Description

	CEMENT TYPE	ADDITIVES	PREFLUSH TYPE	PREFLUSH VOL (m3)
SCAVENGER				
FILL				
TAIL				
OTHER				

B. Cement Data

	CEMENTED INTERVAL (m) to (m)	ANNULAR VOLUME (m3)	EXCESS USED (%)	SLURRY VOLUME (m3)	BULK WEIGHT (tonnes)	YIELD (m3/t)	SLURRY DENSITY (kg/m3)	THICK TIME (mins)	MIX WATER RATIO (m3/t)	MIX WATER TEMP (deg C)
SCAVENGER	-									
FILL	-									
TAIL	-									
OTHER	-									

C. Record of Operations

OPERATION DESCRIPTION	START TIME (day / hr:min)	FINISH TIME (day / hr:min)	ELAPSED TIME	VOLUME (m3)	RATE (m3/min)	PRESSURE (kPa) MAX.	MIN.
MUD CONDITIONING	/ :	/ :					
POOH W/ DRILL PIPE	/ :	/ :					
RIH W/ CASING	/ :	/ :					
CIRCULATION	/ :	/ :					
CEMENTING - PREFLUSH	/ :	/ :					
- SCAVENGER	/ :	/ :					
- FILL	/ :	/ :					
- TAIL	/ :	/ :					
- OTHER	/ :	/ :					
RLSE TOP PLUG & PO LINES	/ :	/ :					
DISPLACEMENT	/ :	/ :					
BUMP PLUG & BLEED OFF	/ :	/ :					
CEMENT RETURNS	TYPE:		VOLUME:	m3			
FLOAT HELD	YES ☐	NO ☐					

CD 06/97

PAJAK ENGINEERING LTD.

CEMENTING REPORT

WELL NAME:	CDN FOREST ET AL NORTH LIARD C-31-A	DATE:	01/04/01	RPT #:	6
LOCATION:	300-C31-6040-12330-0	AFE #:	004009	DFS:	
		CEMENT JOB ID (**):	P		
SUPERVISOR:	LEBEUF/AUBIN	STRING IDENTIFIER (*):			
PHONE #:	(600) 701-3227	CALLING CARD #:			

(*) STRING IDENTIFIERS
C = Conductor
S = Surface
I = Intermediate
P = Production
L = Liner

(**) JOB IDENTIFIERS
P = Primary S = Squeeze

Summary

	CEMENT INTERVAL			
1st STAGE	2400.0	m KB	2280.0	m KB
2nd STAGE		m KB		m KB
3rd STAGE		m KB		m KB

ANNULAR VOLUME (m3)
CALIPER
GAUGE
SLURRY (actual)

Job Details

HOLE SIZE: mm
CASING O.D.: mm
SHOE DEPTH: m KB
MAX. RECORDED BHT: 137 deg C

(***) JOB TYPES
1 = Conventional
2 = Foam

JOB TYPE (***): 1
PROPOSED CEMENT TOP: 2280.00 m KB
MAXIMUM DEVIATION: 6.00 deg @ 2400.00 m KB

Comments

Circulated at 2400mKB a full bottoms up prior to cementing plug #2.Held safety meeting with all concerned prior to cementing plug #2.Mixed and cemented plug #2.Tripped out of hole to 2180mKB.Broke circulation and got back 4m3 vis sweep and 1m3 contaminated cement.Continued to circulate casing clean.

Mud Data (prior to cementing)

TYPE:	K-MINUS
DENSITY:	1660.00 kg/m3
VISCOSITY:	80.00 sec/l
YIELD POINT:	24.00 Pa
WATER LOSS:	8.50 ml/30 min
P. V.	21.00 mPa - sec
GELS	20.00 / 29.00 Pa

Plug Type

TOP:
BOTTOM:
OTHER:

Cement Head

TYPE:

Pipe Movement

WHILE:	CONDITIONING	CEMENTING
TYPE	Up and Down	Up and Down
STROKE (m)	18.0	2.0
RATE (stks/min)	90.0	

Stage Tools

TYPE	
DEPTH (m KB)	

Mix Water

FRESH

Services & Equipment

CEMENT COMPANY: Sanjel
REPRESENTATIVE: Richard Harasen
EQUIPMENT: Twin,pumper

STAGE ONE

A. Cement Blend Description

	CEMENT TYPE	ADDITIVES	PREFLUSH TYPE	PREFLUSH VOL (m3)
SCAVENGER			VIS SWEEP	4.00
FILL				
TAIL	THERMAL 40	1% CFR .4%LTR .9%CFL-2 1%FWCA-H		
OTHER				

B. Cement Data

	CEMENTED INTERVAL (m) to (m)	ANNULAR VOLUME (m3)	EXCESS USED (%)	SLURRY VOLUME (m3)	BULK WEIGHT (tonnes)	YIELD (m3/t)	SLURRY DENSITY (kg/m3)	THICK TIME (mins)	MIX WATER RATIO (m3/t)	MIX WATER TEMP (deg C)
SCAVENGER	-									
FILL	-									
TAIL	2280.0 - 2400.0	7.50	100	15.00	20.00	0.750	1885.00	427	0.410	8.00
OTHER	-									

CD 06/97

PAJAK ENGINEERING LTD.

CEMENTING REPORT

WELL NAME:	CDN FOREST ET AL NORTH LIARD C-31-A	DATE:	01/04/01	RPT #:	6
LOCATION:	300-C31-6040-12330-0	AFE #:	004009	DFS:	
		CEMENT JOB ID (**):	P		
SUPERVISOR:	LEBEUF/AUBIN	STRING IDENTIFIER (*):			
PHONE #:	(600) 701-3227	CALLING CARD #:			

(*) STRING IDENTIFIERS
C = Conductor
S = Surface
I = Intermediate
P = Production
L = Liner
(**) JOB IDENTIFIERS
P = Primary S = Squeeze

C. Record of Operations

OPERATION DESCRIPTION	START TIME (day / hr:min)	FINISH TIME (day / hr:min)	ELAPSED TIME	VOLUME (m3)	RATE (m3/min)	PRESSURE (kPa) MAX.	PRESSURE (kPa) MIN.
MUD CONDITIONING	1 / 00 : 15	1 / 1 : 45	1.50	58.4	1.2	6600	6600
POOH W/ DRILL PIPE	/ :	/ :					
RIH W/ CASING	/ :	/ :					
CIRCULATION	/ :	/ :					
CEMENTING - PREFLUSH	1 / 1 : 53	1 / 1 : 59	0.10	4.0	0.8	8000	6000
- SCAVENGER	/ :	/ :					
- FILL	/ :	/ :					
- TAIL	1 / 1 : 59	1 / 2 : 16	0.28	15.0	1.0	8000	7000
- OTHER	/ :	/ :					
RLSE TOP PLUG & PO LINES	/ :	/ :					
DISPLACEMENT	1 / 2 : 16	1 / 2 : 34	0.30	18.1	0.8	8000	7000
BUMP PLUG & BLEED OFF	/ :	/ :					
CEMENT RETURNS	TYPE: CANTAMINATED		VOLUME: 1.00 m3				
FLOAT HELD	YES ☐	NO ☐					

STAGE TWO

A. Cement Blend Description

	CEMENT TYPE	ADDITIVES	PREFLUSH TYPE	PREFLUSH VOL (m3)
SCAVENGER				
FILL				
TAIL				
OTHER				

B. Cement Data

	CEMENTED INTERVAL (m) to (m)	ANNULAR VOLUME (m3)	EXCESS USED (%)	SLURRY VOLUME (m3)	BULK WEIGHT (tonnes)	YIELD (m3/t)	SLURRY DENSITY (kg/m3)	THICK TIME (mins)	MIX WATER RATIO (m3/t)	MIX WATER TEMP (deg C)
SCAVENGER	-									
FILL	-									
TAIL	-									
OTHER	-									

C. Record of Operations

OPERATION DESCRIPTION	START TIME (day / hr:min)	FINISH TIME (day / hr:min)	ELAPSED TIME	VOLUME (m3)	RATE (m3/min)	PRESSURE (kPa) MAX.	PRESSURE (kPa) MIN.
MUD CONDITIONING	/ :	/ :					
POOH W/ DRILL PIPE	/ :	/ :					
RIH W/ CASING	/ :	/ :					
CIRCULATION	/ :	/ :					
CEMENTING - PREFLUSH	/ :	/ :					
- SCAVENGER	/ :	/ :					
- FILL	/ :	/ :					
- TAIL	/ :	/ :					
- OTHER	/ :	/ :					
RLSE TOP PLUG & PO LINES	/ :	/ :					
DISPLACEMENT	/ :	/ :					
BUMP PLUG & BLEED OFF	/ :	/ :					
CEMENT RETURNS	TYPE:		VOLUME: m3				
FLOAT HELD	YES ☐	NO ☐					

ATTACHMENT #5

D R I L L I N G   M U D   P R O P E R T I E S   R E C O R D

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A   AFE: 004009   SPUD DATE: 00/08/04

LOCATION: 300-C31-6040-12330-0   CONTRACTOR: AKITA DRILLING LTD.   RIG: 58E

Mon Nov 05 08:47:22 2001

DAY	DEPTH (m)	MUD TYPE	DENSITY	VIS	GELS	pH	PF/MF	PV	YP	WATER LOSS	FC	TEMP C in/out	SAND kg/m3	SOLIDS kg/m3	TOTAL SOLIDS kg/m3	OIL %	MBT	POLY	BENT	LCM	CA++	CL-	ALKALYDE MPI	ALKALYDE MFO
154	2363	K-Minus	1115/ 0	56	3.0/ 4.0	10.4	0/ 0	18	14	4.8	1.0	0/ 56	0.000	0.00	0.21	0.000	0	0	4	0	420	1200	0.2	0.7
155	2363	K-Minus	1125/ 0	54	4.0/ 7.0	10.5	0/ 0	15	15	6.2	1.0	0/ 56	0.000	0.00	0.50	0.000	0	0	0	0	480	1200	0.2	0.7
156	[illegible]	K-Minus	1125/ 0	57	4.0/10.0	10.8	0/ 0	17	15	5.3	1.5	0/ 32	0.002	0.00	0.05	0.000	0	0	0	0	440	1200	0.2	1.0
156	2370	K-Minus	1125/ 0	58	5.0/ 9.0	10.8	0/ 0	17	15	5.1	1.5	0/ 32	0.002	0.00	0.05	0.000	0	0	0	0	440	1200	0.1	1.0
157	2401	K-Minus	1125/ 0	59	5.0/10.0	10.3	0/ 0	18	16	8.4	1.5	0/ 36	0.002	0.00	0.05	0.000	0	0	0	0	400	1200	0.1	1.0
157	2389	K-Minus	1125/ 0	60	6.0/10.0	10.5	0/ 0	19	16	9.3	1.5	0/ 36	0.002	0.00	0.05	0.000	0	0	0	0	400	1200	0.1	1.0
158	2450	K-Minus	1135/ 0	64	9.0/17.0	10.5	0/ 0	22	17	7.3	1.5	0/ 36	0.002	0.00	0.05	0.000	0	0	0	0	400	1100	0.1	1.0
159	2450	K-Minus	1140/ 0	58	10.0/18.0	10.5	0/ 0	22	15	7.6	1.5	0/ 0	0.008	0.00	0.05	0.000	0	0	15	0	400	1100	0.1	0.8
160	2391	K-Minus	1140/ 0	54	8.0/15.0	10.3	0/ 0	20	15	7.8	1.5	0/ 0	0.010	0.00	0.05	0.000	0	0	15	0	400	1000	0.1	0.6
161	2398	K-Minus	1135/ 0	64	6.0/12.0	10.6	0/ 0	20	14	7.6	1.0	0/ 38	0.005	0.00	0.05	0.000	0	0	17	0	400	1100	0.1	0.7
162	2302	K-Minus	1130/ 0	58	6.0/11.0	10.3	0/ 0	20	14	7.6	1.0	0/ 34	0.005	0.00	0.22	0.000	0	0	16	0	420	1100	0.1	0.7
163	2302	K-Minus	1140/ 0	57	6.0/ 9.0	10.8	0/ 0	18	13	7.4	1.5	0/ 40	0.000	0.00	0.22	0.000	0	0	16	0	420	1100	0.1	0.6
164	2310	K-Minus	1195/ 0	72	10.0/17.0	10.8	0/ 0	16	17	8.8	1.5	0/ 40	0.010	0.00	0.22	0.000	0	0	24	0	460	1100	0.1	0.7
165	2310	K-Minus	1240/ 0	58	8.0/14.0	11.8	0/ 0	15	15	6.2	1.0	0/ 40	0.000	0.00	0.22	0.000	0	0	22	0	460	1100	0.4	0.9
166	2310	K-Minus	1240/ 0	58	8.0/14.0	11.8	0/ 0	15	15	6.2	1.0	0/ 40	0.000	0.00	0.22	0.000	0	0	22	0	460	1100	0.4	0.9
167	2310	K-Minus	1240/ 0	58	8.0/14.0	11.8	0/ 0	15	15	6.2	1.0	0/ 40	0.000	0.00	0.22	0.000	0	0	22	0	460	1100	0.4	0.9
168	2310	K-Minus	1240/ 0	58	8.0/14.0	11.8	0/ 0	15	15	6.2	1.0	0/ 40	0.000	0.00	0.22	0.000	0	0	22	0	460	1100	0.4	0.9
169	2311	K-Minus	1275/ 0	78	12.0/15.0	11.0	0/ 0	17	19	9.0	1.5	0/ 39	0.000	0.00	0.22	0.000	0	0	22	0	460	1100	0.2	0.7
170	2311	K-Minus	1285/ 0	72	11.0/16.0	11.0	0/ 0	16	17	9.6	1.5	0/ 38	0.000	0.00	0.02	0.000	0	0	22	0	420	1100	0.2	0.7
171	2311	K-Minus	1290/ 0	70	13.0/21.0	8.6	0/ 0	16	15	10.2	1.5	0/ 39	0.010	0.00	0.02	0.000	0	0	26	0	480	1100	0.1	0.8
172	2311	K-Minus	1310/ 0	70	17.0/16.0	10.0	0/ 0	16	17	8.4	1.5	0/ 0	0.000	0.00	0.02	0.000	0	0	26	0	480	1100	0.2	0.7
173	2311	K-Minus	1310/ 0	78	14.0/19.0	9.8	0/ 0	20	23	8.8	1.5	0/ 40	0.000	0.00	0.02	0.000	0	0	26	0	400	1100	0.2	0.7
174	2330	K-Minus	1330/ 0	68	10.0/14.0	10.4	0/ 0	20	18	9.6	1.5	0/ 49	0.000	0.00	0.02	0.000	0	0	22	0	340	1100	0.2	0.8
175	2330	K-Minus	1330/1330	68	10.0/14.0	10.4	0/ 0	20	18	9.6	1.5	0/ 49	0.000	0.00	0.02	0.000	0	0	22	0	340	1100	0.2	0.8
176	2301	K-Minus	1345/ 0	65	6.0/10.0	11.7	0/ 0	18	12	8.3	1.5	0/ 45	0.000	0.00	0.02	0.000	0	0	22	0	420	1200	0.6	1.4
177	2308	K-Minus	1370/ 0	60	6.0/10.0	12.2	0/ 0	26	14	10.2	1.5	0/ 49	0.000	0.00	0.02	0.000	0	0	24	0	420	1200	0.6	1.4
178	2327	K-Minus	1345/ 0	62	6.0/ 9.0	11.9	0/ 0	14	12	7.4	1.5	0/ 49	0.003	0.00	0.18	0.000	0	0	26	0	520	1200	0.8	1.6
178	2342	K-Minus	1355/ 0	68	6.0/13.0	11.7	0/ 0	26	14	7.4	1.5	0/ 54	0.003	0.00	0.18	0.000	0	0	26	0	420	1200	0.5	1.3
179	2360	K-Minus	1360/ 0	71	7.0/12.0	11.8	0/ 0	20	15	6.2	1.0	0/ 55	0.003	0.00	0.18	0.000	0	0	28	0	480	1200	0.5	1.2
180	2362	K-Minus	1380/ 0	79	7.0/12.0	11.8	0/ 0	24	14	6.4	1.0	0/ 55	0.003	0.00	0.18	0.000	0	0	28	0	420	1200	0.2	0.9
181	[illegible]	K-Minus	1380/ 0	79	7.0/12.0	11.8	0/ 0	24	14	6.4	1.0	0/ 55	0.003	0.00	0.18	0.000	0	0	28	0	420	1200	0.2	0.9
182	2362	K-Minus	1370/ 0	75	9.0/15.0	11.7	0/ 0	32	16	6.6	1.0	0/ 48	0.003	0.00	0.02	0.000	0	0	26	0	420	1200	0.3	1.0
183	2362	K-Minus	1670/1670	86	11.0/19.0	11.7	0/ 0	42	17	7.6	1.5	0/ 49	0.005	0.00	0.02	0.000	0	0	29	0	560	1200	0.3	0.8
183	2362	K-Minus	1675/ 0	86	10.0/18.0	11.6	0/ 0	44	17	7.4	1.5	0/ 0	0.005	0.00	0.02	0.000	0	0	29	0	580	1200	0.3	0.8
184	2362	K-Minus	1670/1670	86	11.0/19.0	11.7	0/ 0	42	17	7.6	1.5	0/ 49	0.005	0.00	0.02	0.000	0	0	29	0	560	1200	0.3	0.8

[redacted]

184	2362	K-Minus	1675/	0	86	10.0/18.0	11.6	0/	0	44	17	7.4	1.5	0/	0	0.005	0.00	0.02	0.000	0	0	29	0	580	1200	0.3	0.8
185	2362	K-Minus	1655/	0	105	19.0/30.0	11.3	0/	0	46	21	7.4	1.5	0/	52	0.005	0.00	0.02	0.000	0	0	26	0	500	1200	0.3	0.9
185	2362	K-Minus	1680/	0	80	12.0/23.0	11.4	0/	0	48	18	7.4	1.5	0/	0	0.005	0.00	0.02	0.000	0	0	28	0	560	1200	0.3	0.8
186	2363	K-Minus	1665/	0	92	13.0/26.0	11.4	0/	0	46	19	6.6	1.5	0/	42	0.005	0.00	0.02	0.000	0	0	28	0	420	1200	0.3	0.8
186	2362	K-Minus	1650/	0	96	14.0/26.0	11.3	0/	0	49	20	6.6	1.5	0/	50	0.005	0.00	0.02	0.000	0	0	28	0	400	1200	0.3	0.9
187	2363	K-Minus	1660/	0	182	22.0/41.0	11.3	0/	0	42	37	6.4	1.0	0/	50	0.008	0.00	0.02	0.000	0	0	38	0	480	1200	0.2	0.9
187	2366	K-Minus	1650/	0	212	24.0/41.0	11.1	0/	0	48	30	6.6	1.5	0/	50	0.005	0.00	0.02	0.000	0	0	39	0	480	1200	0.3	0.8
188	2388	K-Minus	1650/	0	82	12.0/19.0	10.0	0/	0	34	20	6.2	1.0	0/	59	0.008	0.00	0.02	0.000	0	0	38	0	480	1100	0.2	0.8
188	2375	K-Minus	1650/	0	108	19.0/45.0	11.1	0/	0	42	24	8.4	1.0	0/	54	0.010	0.00	0.02	0.000	0	0	44	0	520	1100	0.2	0.9
189	2397	K-Minus	1650/	0	95	18.0/29.0	11.3	0/	0	46	21	6.0	1.0	0/	60	0.008	0.00	0.02	0.000	0	0	32	0	420	1100	0.2	0.9
190	2404	K-Minus	1670/	0	83	18.0/31.0	10.5	0/	0	36	20	8.4	1.0	0/	50	0.005	0.00	0.02	0.000	0	0	35	0	600	1100	0.2	0.9
191	2423	K-Minus	1660/	0	80	17.0/33.0	10.5	0/	0	34	19	6.5	2.0	0/	52	0.040	0.00	20.00	0.000	0	0	25	0	700	1000	0.1	0.8
191	2404	K-Minus	1670/	0	83	18.0/31.0	10.5	0/	0	36	20	8.4	1.0	0/	50	0.005	0.00	0.02	0.000	0	0	35	0	600	1100	0.2	0.9
192	2433	K-Minus	1665/	0	84	19.0/31.0	10.5	0/	0	36	23	6.7	2.0	0/	54	0.050	0.00	0.02	0.000	0	0	28	0	520	900	0.1	0.8
192	2428	K-Minus	1660/	0	82	18.0/31.0	10.5	0/	0	34	22	6.8	2.0	0/	54	0.065	0.00	0.02	0.000	0	0	26	0	800	800	0.1	0.8
193	2433	K-Minus	1665/	0	84	19.0/31.0	10.5	0/	0	36	23	6.7	2.0	0/	54	0.050	0.00	0.02	0.000	0	0	28	0	520	900	0.1	0.8
193	2428	K-Minus	1660/	0	82	18.0/31.0	10.5	0/	0	34	22	6.8	2.0	0/	54	0.065	0.00	0.02	0.000	0	0	26	0	800	800	0.1	0.8
194	2445	K-Minus	1660/	0	76	13.0/28.0	11.0	0/	0	32	20	6.0	2.0	0/	53	0.030	0.00	0.02	0.000	0	0	26	0	450	900	0.2	0.9
195	2465	K-Minus	1660/	0	84	20.0/35.0	10.5	0/	0	35	24	6.1	2.0	0/	54	0.040	0.00	0.02	0.000	0	0	28	0	45[illegible]	900	0.2	0.9
195	2455	K-Minus	1665/	0	83	18.0/35.0	11.0	0/	0	34	21	6.1	2.0	0/	54	0.030	0.00	0.02	0.000	0	0	27	0	500	900	0.2	0.9
196	2483	K-Minus	1655/	0	92	19.0/36.0	10.5	0/	0	33	26	6.4	2.0	0/	54	0.040	0.00	0.02	0.000	0	0	35	0	500	900	0.3	1.1
197	2497	K-Minus	1655/	0	90	20.0/31.0	10.5	0/	0	32	25	6.8	2.0	0/	54	0.010	0.00	0.02	0.000	0	0	35	0	400	900	0.2	1.0
198	2505	K-Minus	1670/	0	92	21.0/33.0	10.5	0/	0	32	26	6.5	2.0	0/	54	0.015	0.00	0.22	0.000	0	0	38	0	440	900	0.2	1.2
199	2515	K-Minus	1660/	0	86	18.0/30.0	10.5	0/	0	28	24	6.8	2.0	0/	53	0.015	0.00	0.21	0.000	0	0	35	0	400	900	0.2	1.0

D R I L L I N G   M U D   P R O P E R T I E S   R E C O R D

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A	AFE: 004009	SPUD DATE: 00/08/04
LOCATION: 300-C31-6040-12330-0	CONTRACTOR: AKITA DRILLING LTD.	RIG: 58E

Mon Nov 05 08:47:22 2001

DAY	DEPTH (m)	MUD TYPE	DENSITY	VIS	GELS	pH	PF/MF	PV	YP	WATER LOSS	FC	TEMP C in/out	SAND kg/m3	SOLIDS kg/m3	TOTAL SOLIDS kg/m3	OIL %	MBT	POLY	BENT	LCM	CA++	CL-	ALKALYDE MFI	ALKALYDE MFO
200	2536	K-Minus	1660/ 0	95	20.0/35.0	10.5	0/ 0	32	29	6.5	2.0	0/ 64	0.015	0.00	0.21	0.000	0	0	38	0	480	800	0.3	1.5
201	2555	K-Minus	1660/ 0	89	20.0/30.0	10.5	0/ 0	29	27	6.8	2.0	0/ 54	0.020	0.00	0.21	0.000	0	0	38	0	480	800	0.2	1.3
202	2575	K-Minus	1660/ 0	92	20.0/33.0	10.0	0/ 0	29	27	6.5	2.0	0/ 55	0.015	0.00	0.21	0.000	0	0	38	0	500	700	0.2	1.4
203	2586	K-Minus	1660/ 0	104	24.0/43.0	10.6	0/ 0	24	25	6.6	2.0	0/ 55	0.015	0.00	0.21	0.000	0	0	35	0	700	1100	0.2	1.3
204	2586	K-Minus	1665/ 0	97	26.0/44.0	10.4	0/ 0	26	22	6.8	2.0	0/ 57	0.003	0.00	0.21	0.000	0	0	35	0	600	1100	0.2	1.1
204	2592	K-Minus	1665/ 0	90	27.0/42.0	10.8	0/ 0	28	26	6.6	2.0	0/ 57	0.003	0.00	0.21	0.000	0	0	35	0	650	1100	0.2	0.9
205	2610	K-Minus	1665/ 0	87	28.0/37.0	10.5	0/ 0	22	25	7.0	2.0	0/ 61	0.002	0.00	0.02	0.000	0	0	30	0	420	1100	0.2	1.3
206	2610	K-Minus	1665/ 0	87	28.0/37.0	10.5	0/ 0	22	25	7.0	2.0	0/ 61	0.002	0.00	0.02	0.000	0	0	30	0	420	1100	0.2	1.3
207	2643	K-Minus	1665/ 0	87	26.0/34.0	10.6	0/ 0	28	26	6.5	2.0	0/ 64	0.005	0.00	0.02	0.000	0	0	28	0	400	1100	0.2	1.3
208	2654	K-Minus	1660/ 0	84	22.0/28.0	10.6	0/ 0	28	26	6.4	2.0	0/ 64	0.005	0.00	0.02	0.000	0	0	28	0	400	1100	0.2	1.2
209	2654	K-Minus	1665/ 0	96	26.0/31.0	10.7	0/ 0	26	29	6.8	2.0	0/ 60	0.003	0.00	0.02	0.000	0	0	28	0	400	1100	0.2	1.3
210	2654	K-Minus	1665/ 0	96	26.0/31.0	10.7	0/ 0	26	29	6.8	2.0	0/ 60	0.003	0.00	0.02	0.000	0	0	28	0	400	1100	0.2	1.3
211	2654	K-Minus	1665/ 0	96	26.0/31.0	10.7	0/ 0	26	29	6.8	2.0	0/ 60	0.003	0.00	0.02	0.000	0	0	28	0	400	1100	0.2	1.3
212	2689	K-Minus	1665/ 0	97	34.0/40.0	10.3	0/ 0	30	30	7.2	2.0	0/ 60	0.003	0.00	0.02	0.000	0	0	27	0	440	1100	0.2	0.9
213	2695	K-Minus	1660/ 0	97	18.0/26.0	10.1	0/ 0	30	30	7.2	2.0	0/ 62	0.002	0.00	0.02	0.000	0	0	27	0	580	1100	0.1	0.9
214	2701	K-Minus	1650/ 0	99	22.0/36.0	10.5	0/ 0	32	30	6.2	2.0	0/ 59	0.003	0.00	0.02	0.000	0	0	27	0	540	1100	0.1	0.9
215	2714	K-Minus	1660/ 0	88	24.0/33.0	10.8	0/ 0	32	29	6.4	2.0	0/ 64	0.003	0.00	0.02	0.000	0	0	27	0	420	1100	0.2	1.1
216	2725	K-Minus	1665/ 0	85	27.0/32.0	11.0	0/ 0	26	29	6.2	2.0	0/ 62	0.003	0.00	0.02	0.000	0	0	26	0	340	1100	0.2	1.3
217	2730	K-Minus	1665/ 0	82	21.0/27.0	10.8	0/ 0	26	25	6.2	2.0	0/ 62	0.003	0.00	0.02	0.000	0	0	26	0	240	1100	0.2	1.2
218	2737	K-Minus	1665/ 0	72	18.0/24.0	11.0	0/ 0	26	24	6.2	2.0	0/ 63	0.003	0.00	0.02	0.000	0	0	26	0	440	1100	0.3	1.3
219	2755	K-Minus	1660/1660	84	25.0/34.0	10.8	0/ 0	28	28	6.0	2.0	0/ 63	0.003	0.00	0.02	0.000	0	0	27	0	420	1100	0.3	1.4
220	2771	K-Minus	1665/1665	83	22.0/29.0	10.5	0/ 0	28	26	6.2	2.0	0/ 63	0.005	0.00	0.02	0.000	0	0	26	0	420	1100	0.3	1.3
221	2790	K-Minus	1660/1660	90	26.0/33.0	11.0	0/ 0	26	30	5.8	2.0	0/ 62	0.002	0.00	0.02	0.000	0	0	26	0	400	1100	0.4	1.7
222	2791	K-Minus	1665/1665	98	26.0/44.0	11.0	0/ 0	32	30	5.8	2.0	0/ 60	0.003	0.00	0.02	0.000	0	0	28	0	320	1100	0.4	1.8
223	2792	K-Minus	1650/1650	82	16.0/24.0	10.5	0/ 0	20	25	5.5	2.0	0/ 60	0.002	0.00	0.02	0.000	0	0	31	0	360	1100	0.2	1.3
224	2801	K-Minus	1660/1660	100	35.0/50.0	10.5	0/ 0	30	35	7.5	2.0	0/ 58	0.002	0.00	0.21	0.000	0	0	31	0	360	1000	0.2	1.1
225	2808	K-Minus	1650/1650	100	30.0/42.0	10.5	0/ 0	30	32	7.2	2.0	0/ 62	0.005	0.00	0.19	0.000	0	0	40	0	400	1100	0.2	1.2
226	2812	K-Minus	1660/1660	80	25.0/32.0	11.0	0/ 0	23	30	7.4	2.0	0/ 62	0.005	0.00	0.22	0.000	0	0	35	0	400	1000	0.2	1.2
227	2835	K-Minus	1660/1660	78	26.0/36.0	11.0	0/ 0	26	31	6.7	2.0	0/ 62	0.005	0.00	0.22	0.000	0	0	35	0	380	1000	0.2	1.2
228	2857	K-Minus	1660/1660	76	25.0/34.0	11.0	0/ 0	23	30	6.1	2.0	0/ 62	0.005	0.00	0.21	0.000	0	0	39	0	400	1000	0.2	1.2
229	2875	K-Minus	1660/1660	76	25.0/34.0	10.5	0/ 0	23	28	6.4	2.0	0/ 62	0.005	0.00	0.21	0.000	0	0	30	0	380	1000	0.2	1.2
230	2894	K-Minus	1660/1660	74	23.0/31.0	10.5	0/ 0	21	28	7.2	2.0	0/ 62	0.005	0.00	0.21	0.000	0	0	31	0	400	1000	0.2	1.1
231	2895	K-Minus	1660/1660	75	22.0/30.0	10.5	0/ 0	21	28	7.1	2.0	0/ 41	0.005	0.00	0.21	0.000	0	0	32	0	400	1000	0.2	1.2
232	2895	K-Minus	1660/1660	75	22.0/30.0	10.5	0/ 0	21	28	7.1	2.0	0/ 41	0.005	0.00	0.21	0.000	0	0	32	0	400	1000	0.2	1.2
233	2895	K-Minus	1660/1660	82	22.0/33.0	10.0	0/ 0	23	29	8.0	2.0	0/ 42	0.005	0.00	0.21	0.000	0	0	32	0	400	1000	0.1	0.8

[redacted]

234	2895	K-Minus	1660/1660	82	22.0/33.0	10.0	0/ 0	23	29	8.0	2.0	0/ 42	0.005	0.00	0.21	0.000	0	0	32	0	400	1000	0.1	0.8
235	2895	K-Minus	1670/1670	69	22.0/31.0	9.8	0/ 0	24	26	10.1	2.5	0/ 42	0.008	0.00	0.22	0.000	0	0	30	0	360	1000	0.0	0.2
236	2905	K-Minus	1655/1655	81	21.0/32.0	10.5	0/ 0	23	27	10.3	2.5	0/ 51	0.005	0.00	0.21	0.000	0	0	35	0	240	1000	0.3	1.1
237	2919	K-Minus	1670/1670	88	22.0/32.0	10.5	0/ 0	23	30	8.5	2.0	0/ 50	0.005	0.00	0.22	0.000	0	0	35	0	400	1000	0.1	1.4
238	2933	K-Minus	1660/1660	79	20.0/28.0	10.5	0/ 0	22	26	7.8	2.0	0/ 51	0.005	0.00	0.21	0.000	0	0	35	0	400	1000	0.1	1.0
239	2941	K-Minus	1660/1660	81	21.0/29.0	10.5	0/ 0	22	25	7.4	2.0	0/ 46	0.005	0.00	0.21	0.000	0	0	35	0	600	900	0.1	1.1
240	2941	K-Minus	1660/1660	80	20.0/29.0	10.5	0/ 0	21	24	8.5	2.0	0/ 46	0.005	0.00	0.21	0.000	0	0	35	0	400	900	0.0	0.9
242	0	INHIBITED	1005/ 0	32	0.0/ 0.0	10.5	0/ 0	0	0	0.0	0.0	0/ 0	0.000	0.00	0.00	0.000	0	0	0	0	280	700	0.0	0.0

PAJAK ENGINEERING LTD.

MUD ADDITIVES BY HOLE SECTION

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A
AFE: 004009
RIG: 58E
LOCATION: 300-C31-6040-12330-0
CONTRACTOR: AKITA DRILLING LTD.

Mon Nov 05 08:47:21 2001

MUD ADDITIVE	NO. OF SACKS	INVENT ADJUST	KG/ SACK	KG TOT. WEIGHT	$COST/ SACK	% DISCOUNT	$TOTAL COST
Hole Section: MAIN							
Alcomer	2	0	0.0	0	185.16	0.00	370.32
Alcomer	1	0	0.0	0	35.12	0.00	35.12
Alcomer	2	0	0.0	0	185.16	0.00	370.32
Alcomer	2	0	0.0	0	297.04	0.00	594.08
Alcomer	4	0	0.0	0	185.16	0.00	740.64
Alcomer	4	0	0.0	0	297.04	0.00	1188.16
Alcomer	8	0	0.0	0	185.16	0.00	1481.28
Alcomer	3	0	0.0	0	297.04	0.00	891.12
Alcomer110	68	0	0.0	0	297.04	0.00	20198.72
Barite	11198	0	0.0	0	21.88	0.00	245012.24
Biocide	110	0	0.0	0	320.92	0.00	35301.20
Cal Carb	150	0	0.0	0	16.28	0.00	2442.00
Cal Carb	27	0	0.0	0	18.56	0.00	501.12
Caustic	53	0	0.0	0	55.68	0.00	2951.04
Corinox	87	0	0.0	0	179.80	0.00	15642.60
Desco	42	0	0.0	0	91.20	0.00	3830.40
Drispac	95	0	0.0	0	308.36	0.00	29294.20
Gel	291	0	0.0	0	20.00	0.00	5820.00
Gypsum	11	0	0.0	0	18.60	0.00	204.60
Kelzan	12	0	0.0	0	668.80	0.00	8025.60
Lignite	192	0	0.0	0	18.56	0.00	3563.52
Lime	5	0	0.0	0	13.92	0.00	69.60
Lime	6	0	0.0	0	20.56	0.00	123.36
Lime	23	0	0.0	0	13.92	0.00	320.16
Lime	1	0	0.0	0	20.56	0.00	20.56
Percol 728	16	0	0.0	0	462.64	0.00	7402.24
Pot Sulf	1874	0	0.0	0	30.16	0.00	56519.84
Saf-Kote	15	0	0.0	0	244.20	0.00	3663.00
Sawdust	30	0	0.0	0	7.60	0.00	228.00
Sil Defoam	2	0	0.0	0	191.60	0.00	383.20
Sod Sulf	150	0	0.0	0	68.52	0.00	10278.00
Soda Ash	30	0	0.0	0	25.00	0.00	750.00
Starpak	92	0	0.0	0	158.96	0.00	14624.32
Sulf-Acid	13	0	0.0	0	72.40	0.00	941.20
Sulf-Acid	2	0	0.0	0	91.20	0.00	182.40
Torq 2000	11	0	0.0	0	183.40	0.00	2017.40
Ultra Seal	35	0	0.0	0	106.20	0.00	3717.00
Walnut	15	0	0.0	0	38.60	0.00	579.00
	14682	0					480277.56

PAJAK ENGINEERING LTD.

MUD ADDITIVES SUMMARY

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A | AFE: 004009 | RIG: 58E

LOCATION: 300-C31-6040-12330-0 | CONTRACTOR: AKITA DRILLING LTD.

Mon Nov 05 08:47:21 2001

MUD ADDITIVE	NO. OF SACKS	INVENT ADJUST	KG/ SACK	KG TOT. WEIGHT	$COST/ SACK	% DISCOUNT	$TOTAL COST
Alcomer	2	0	0.0	0	185.16	0.00	370.32
Alcomer	1	0	0.0	0	35.12	0.00	35.12
Alcomer	2	0	0.0	0	185.16	0.00	370.32
Alcomer	2	0	0.0	0	297.04	0.00	594.08
Alcomer	4	0	0.0	0	185.16	0.00	740.64
Alcomer	4	0	0.0	0	297.04	0.00	1188.16
Alcomer	8	0	0.0	0	185.16	0.00	1481.28
Alcomer	3	0	0.0	0	297.04	0.00	891.12
Alcomer110	68	0	0.0	0	297.04	0.00	20198.72
Barite	11198	0	0.0	0	21.88	0.00	245012.24
Biocide	110	0	0.0	0	320.92	0.00	35301.20
Cal Carb	150	0	0.0	0	16.28	0.00	2442.00
Cal Carb	27	0	0.0	0	18.56	0.00	501.12
Caustic	53	0	0.0	0	55.68	0.00	2951.04
Corinox	87	0	0.0	0	179.80	0.00	15642.60
Desco	42	0	0.0	0	91.20	0.00	3830.40
Drispac	95	0	0.0	0	308.36	0.00	29294.20
Gel	291	0	0.0	0	20.00	0.00	5820.00
Gypsum	11	0	0.0	0	18.60	0.00	204.60
Kelzan	12	0	0.0	0	668.80	0.00	8025.60
Lignite	192	0	0.0	0	18.56	0.00	3563.52
Lime	5	0	0.0	0	13.92	0.00	69.60
Lime	6	0	0.0	0	20.56	0.00	123.36
Lime	23	0	0.0	0	13.92	0.00	320.16
Lime	1	0	0.0	0	20.56	0.00	20.56
Percol 728	16	0	0.0	0	462.64	0.00	7402.24
Pot Sulf	1874	0	0.0	0	30.16	0.00	56519.84
Saf-Kote	15	0	0.0	0	244.20	0.00	3663.00
Sawdust	30	0	0.0	0	7.60	0.00	228.00
Sil Defoam	2	0	0.0	0	191.60	0.00	383.20
Sod Sulf	150	0	0.0	0	68.52	0.00	10278.00
Soda Ash	30	0	0.0	0	25.00	0.00	750.00
Starpak	92	0	0.0	0	158.96	0.00	14624.32
Sulf-Acid	13	0	0.0	0	72.40	0.00	941.20
Sulf-Acid	2	0	0.0	0	91.20	0.00	182.40
Torq 2000	11	0	0.0	0	183.40	0.00	2017.40
Ultra Seal	35	0	0.0	0	106.20	0.00	3717.00
Walnut	15	0	0.0	0	38.60	0.00	579.00
	14682	0					480277.56

ATTACHMENT #6

ATTACHMENT #6

END WELL REPORT
Canadian Forest Oil Ltd.
CDN FOREST ET AL NORTH LIARD C-31A

Formation Leak-Off Test (FLOT):

Test No.	Depth (mKB)	Fluid Density (kg/m^3)	Applied Pressure (kPa)	Leak-Off Gradient (kPa/m)	Mud Weight Equivalent (kg/m^3)	Last Casing Depth (mKB)
1	2365	1125	8000	14.4	1469	710

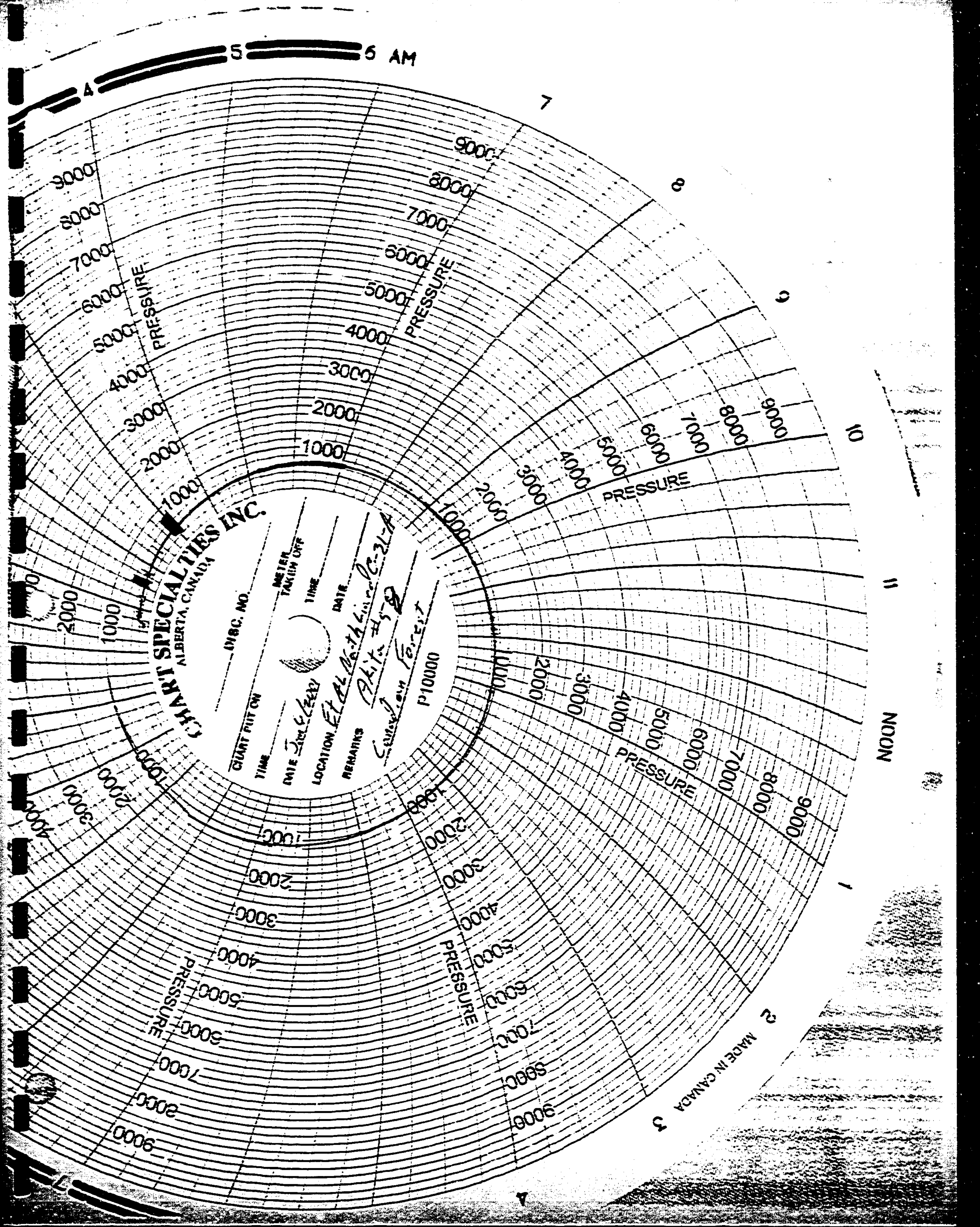


CHART SPECIALTIES INC.
ALBERTA, CANADA
DISC. NO.
METER TAKEN OFF
TIME
DATE
CHART PUT ON
TIME
DATE
LOCATION
REMARKS
P10000
PRESSURE
4
5
6 AM
7
8
9
10
11
NOON
1
2
3
MADE IN CANADA

FORMATION PRESSURE TEST

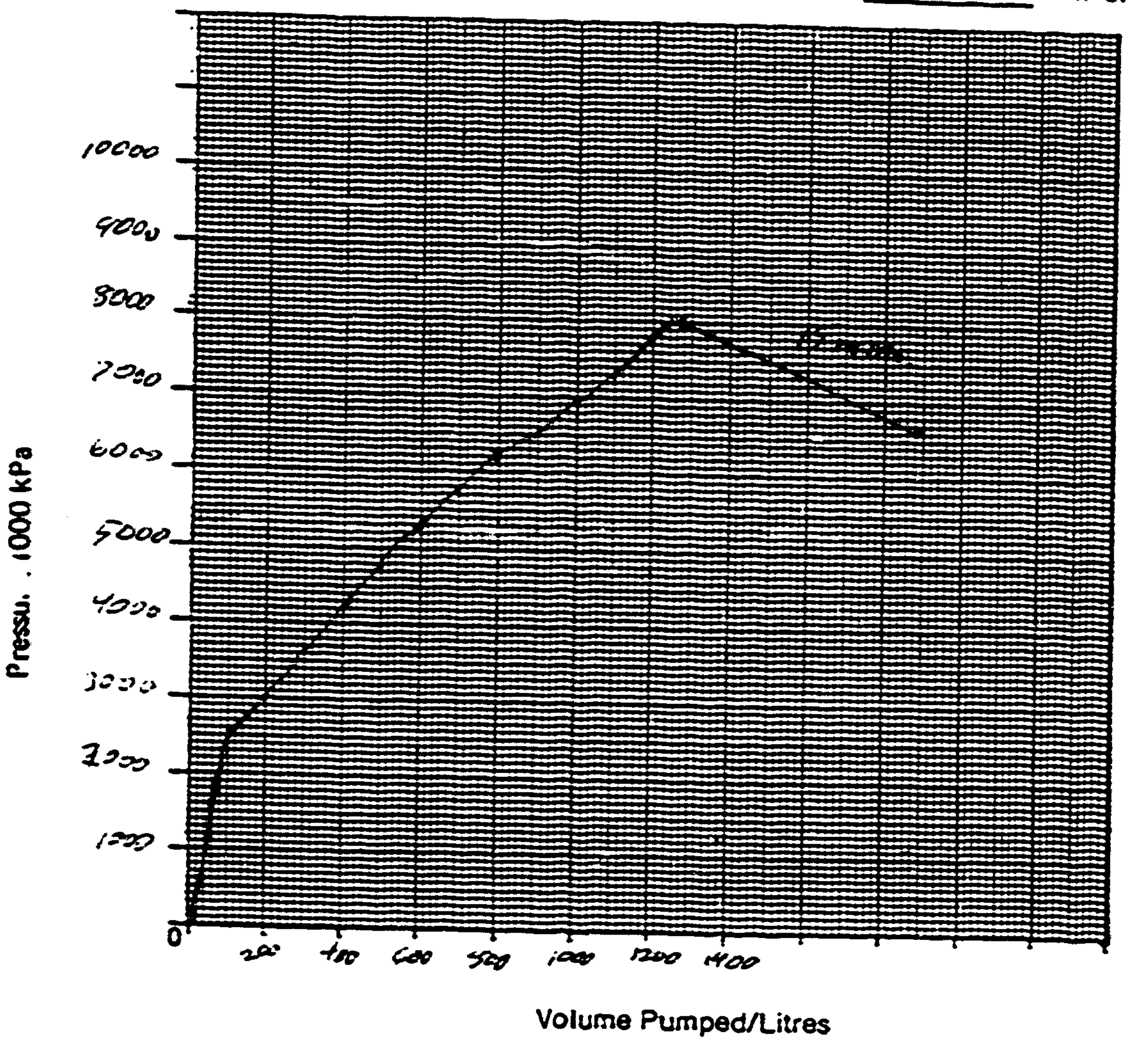
WELL: CDN Forest Et Al North Liard C-31-A DATE: (y-m-d) 2001_01_06

MAXIMUM TEST PRESSURE – LESSER OF

(1) B.O.P. Rating ______ 35000 kPa (1)

(2) Weakest Casing: 244.5 mm 80 kg/m HCL Grade

Burst Rating (kPa) 55000 x 0.75 = 41250 kPa (2)



VOL PUMPED Litres	PRESSURE kPa
100	2500
200	3000
300	3650
400	4200
500	4800
600	5250
700	5750
800	6200
900	6500
1000	6950
1100	7300
1200	7500
1340	8000
1270	9000

Depth of casing	a)		2365	m
Mud gradient	b) (mud density x 0.00981)	1125 kg/m³	11.04	kPa/m
Hydrostatic pressure	c)	(a x b)	26100	kPa
Leak-off pressure	d)	(see note below)	8000	kPa
Total pressure (at shoe)	e)	(c + d)	34100	kPa
Formation gradient	f)	(e ÷ a)	14.41	kPa/m
Maximum allowable mud density with no annulus pressure	g)	(f ÷ 0.00981)	1469	kg/m³

Note: The last point ON the straight line plotted above is the leak-off pressure that you enter in line (d)

ATTACHMENT #7

Attachment #7

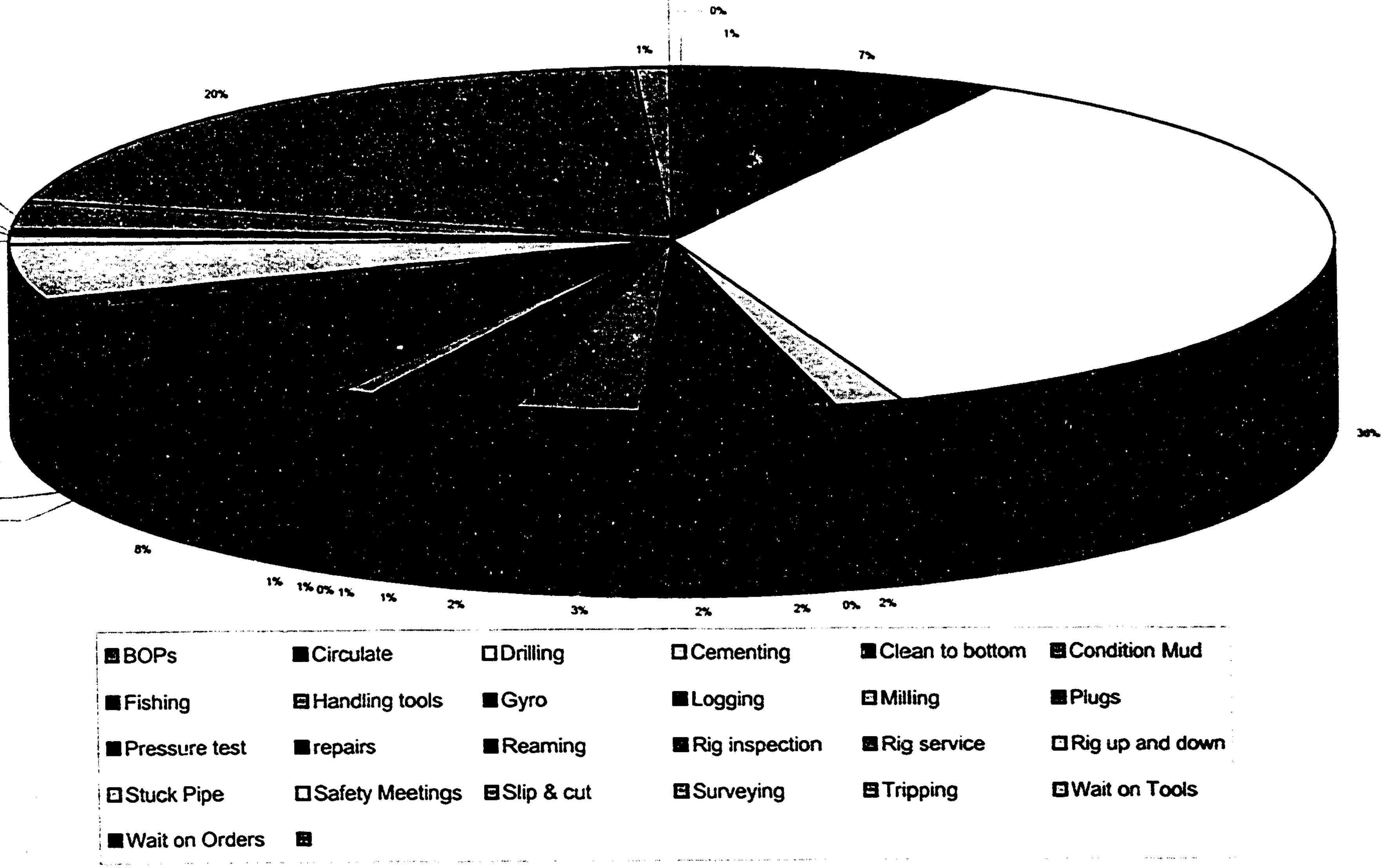
End Well Report
Canadian Forest Oil Ltd.
CDN Forest et al North Liard C-31-A

Time Distribution

Operation Type	Hours	Percentage
BOPs	21.50	0.95%
Circulate	161.50	7.16%
Drilling	819.25	36.31%
Cementing	36.25	1.61%
Clean to bottom	7.25	0.32%
Condition Mud	46.25	2.05%
Fishing	53.00	2.35%
Handling tools	73.25	3.25%
Gyro	45.50	2.02%
Logging	33.50	1.48%
Milling	17.75	0.79%
Plugs	8.25	0.37%
Pressure test	17.00	0.75%
repairs	14.50	0.64%
Reaming	173.50	7.69%
Rig inspection	14.25	0.63%
Rig service	33.00	1.46%
Rig up and down	114.00	5.05%
Stuck Pipe	23.25	1.03%
Safety Meetings	3.50	0.16%
Slip & cut	8.75	0.39%
Surveying	52.25	2.32%
Tripping	460.00	20.39%
Wait on Tools	17.00	0.75%
Wait on Orders	1.75	0.08%
Total Hours	2256.00	100.00%

Attachment #8

Time Distribution



PAJAK ENGINEERING LTD.

RIG ACTIVITY SUMMARY

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A

AFE: 004009

RIG: 58E

LOCATION: 300-C31-6040-12330-0

CONTRACTOR: AKITA DRILLING LTD.

Mon Jul 16 14:39:13 2001

HOLE SECTION	ACTIVITY	HOURS	PERCENTAGE
MAIN	BLOW T.D.	0.25	0.0
	BOP CHECK	0.50	0.0
	BOP DRILL	1.50	0.1
	BOP TEST	5.00	0.2
	CEMENTING	1.25	0.1
	CIRCULATE	153.00	6.8
	CLEAN TANK	3.75	0.2
	CLN TO BTM	3.25	0.1
	COND MUD	46.25	2.1
	DIR WORK	11.00	0.5
	DIR.WORK	1.25	0.1
	DRILLING	807.00	35.8
	FIND PLUG	2.00	0.1
	FISHING	53.00	2.3
	FLOW CHECK	3.25	0.1
	GAMMA	4.25	0.2
	GAMMA LOG	1.75	0.1
	GYRO	45.50	2.0
	H2S DRILL	0.50	0.0
	HNDL TOOLS	69.50	3.1
	INSPECTION	14.25	0.6
	JARING	47.25	2.1
	JARRING	3.75	0.2
	L/D TOOLS	1.75	0.1
	LOGGING	26.75	1.2
	LOST CIRC	2.00	0.1
	MILLING	17.75	0.8
	MWD	0.25	0.0
	MWD SCREEN	1.00	0.0
	N/D BOPS	11.75	0.5
	ORIENTATE	0.25	0.0
	PIPESCREEN	0.25	0.0
	PLUGGEDMWD	4.75	0.2
	PRESS TEST	17.00	0.8
	PU/LD PIPE	25.00	1.1
	RE-LOG	0.75	0.0
	REAMING	120.25	5.3
	REPAIRS	14.50	0.6
	RIG SERV	33.00	1.5
	RIG UP/DN	114.00	5.1
	SAFETY MTG	2.75	0.1
	SAFTEY MTG	0.25	0.0
	SCREEN	0.25	0.0
	SET B PLUG	0.25	0.0
	SLIP & CUT	8.75	0.4
	STUCK PIPE	22.00	1.0
	STUCKPIPE	1.25	0.1
	SURVEYING	30.50	1.4
	TAG CEMENT	2.50	0.1

PAJAK ENGINEERING LTD.

RIG ACTIVITY SUMMARY

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A — AFE: 004009 — RIG: 58E

LOCATION: 300-C31-6040-12330-0 — CONTRACTOR: AKITA DRILLING LTD.

Mon Jul 16 14:39:13 2001

HOLE SECTION	ACTIVITY	HOURS	PERCENTAGE	
	Try circ.	3.00	0.1	
	W.O.C.	32.50	1.4	
	W.O.O.	1.75	0.1	
	W.O.T.	17.00	0.8	
	WASH	0.25	0.0	
	WELL HEAD	2.75	0.1	
	WIRE LINE	12.75	0.6	
	WIRELINE	9.00	0.4	
	WORKPACKER	1.25	0.1	
		2256.00	100.0	100.0%
TOTAL	BLOW T.D.	0.25	0.0	
	BOP CHECK	0.50	0.0	
	BOP DRILL	1.50	0.1	
	BOP TEST	5.00	0.2	
	CEMENTING	1.25	0.1	
	CIRCULATE	153.00	6.8	
	CLEAN TANK	3.75	0.2	
	CLN TO BTM	3.25	0.1	
	COND MUD	46.25	2.1	
	DIR WORK	11.00	0.5	
	DIR.WORK	1.25	0.1	
	DRILLING	807.00	35.8	
	FIND PLUG	2.00	0.1	
	FISHING	53.00	2.3	
	FLOW CHECK	3.25	0.1	
	GAMMA	4.25	0.2	
	GAMMA LOG	1.75	0.1	
	GYRO	45.50	2.0	
	H2S DRILL	0.50	0.0	
	HNDL TOOLS	69.50	3.1	
	INSPECTION	14.25	0.6	
	JARING	47.25	2.1	
	JARRING	3.75	0.2	
	L/D TOOLS	1.75	0.1	
	LOGGING	26.75	1.2	
	LOST CIRC	2.00	0.1	
	MILLING	17.75	0.8	
	MWD	0.25	0.0	
	MWD SCREEN	1.00	0.0	
	N/D BOPS	11.75	0.5	
	ORIENTATE	0.25	0.0	
	PIPESCREEN	0.25	0.0	
	PLUGGEDMWD	4.75	0.2	
	PRESS TEST	17.00	0.8	
	PU/LD PIPE	25.00	1.1	
	RE-LOG	0.75	0.0	

PAJAK ENGINEERING LTD.

R I G   A C T I V I T Y   S U M M A R Y

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A — AFE: 004009

RIG: 58E

LOCATION: 300-C31-6040-12330-0 — CONTRACTOR: AKITA DRILLING LTD.

Mon Jul 16 14:39:13 2001

HOLE SECTION	ACTIVITY	HOURS	PERCENTAGE	
	REAMING	120.25	5.3	
	REPAIRS	14.50	0.6	
	RIG SERV	33.00	1.5	
	RIG UP/DN	114.00	5.1	
	SAFETY MTG	2.75	0.1	
	SAFTEY MTG	0.25	0.0	
	SCREEN	0.25	0.0	
	SET B PLUG	0.25	0.0	
	SLIP & CUT	8.75	0.4	
	STUCK PIPE	22.00	1.0	
	STUCKPIPE	1.25	0.1	
	SURVEYING	30.50	1.4	
	TAG CEMENT	2.50	0.1	
	TIGHT HOLE	2.25	0.1	
	TRIPPING	435.00	19.3	
	Try circ.	3.00	0.1	
	W.O.C.	32.50	1.4	
	W.O.O.	1.75	0.1	
	W.O.T.	17.00	0.8	
	WASH	0.25	0.0	
	WELL HEAD	2.75	0.1	
	WIRE LINE	12.75	0.6	
	WIRELINE	9.00	0.4	
	WORKPACKER	1.25	0.4	
		2256.00	100.0	100.0%

TOTAL ESTIMATED: 2640.00 Hours

VARIANCE: 384.00 Hours

PAJAK ENGINEERING LTD.

S U R V E Y   R E C O R D (Minimum curvature method)

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A	AFE: 004009 RIG: 58E
LOCATION: 300-C31-6040-12330-0	CONTRACTOR: AKITA DRILLING LTD.

Mon Nov 05 08:47:23 2001

Target not specified.

#	DEPTH (m)	DRIFT(m)	TRUE BEARING (deg)	V.SECT. (m)	--DEFLECTION (m)- N+ S-	E+ W-	TRUE DEPTH (m)	DLS (d/30m)
271	2561.70	28.80	264.00	253.69	-35.69	-251.17	2539.30	0.876
272	2571.60	29.50	264.90	258.51	-36.16	-255.97	2547.95	2.503
273	2581.40	29.50	265.00	263.33	-36.58	-260.77	2556.48	0.151
274	2591.00	29.60	264.70	268.06	-37.01	-265.49	2564.83	0.558
275	2601.50	29.40	266.60	273.22	-37.40	-270.64	2573.97	2.733
276	2610.00	29.00	268.20	277.35	-37.59	-274.79	2581.39	3.096
277	2619.70	28.90	268.60	282.01	-37.72	-279.48	2589.87	0.674
278	2629.16	29.00	269.10	286.56	-37.81	-284.06	2598.15	0.830
279	2638.70	29.10	269.10	291.16	-37.88	-288.69	2606.49	0.314
281	2648.28	29.20	268.20	295.80	-37.99	-293.35	2614.86	1.408
281	2654.00	29.50	267.50	298.60	-38.10	-296.16	2619.84	2.390
282	2657.50	29.60	267.20	300.32	-38.18	-297.88	2622.89	1.531
283	2666.90	30.10	267.00	304.98	-38.42	-302.55	2631.04	1.627
285	2676.68	30.00	266.60	309.87	-38.69	-307.44	2639.51	0.837
286	2689.00	30.80	270.10	316.07	-38.87	-313.67	2650.13	4.732
286	2696.30	30.00	270.10	319.74	-38.86	-317.37	2656.43	3.288
287	2705.77	29.70	272.30	324.40	-38.76	-322.08	2664.64	3.597
288	2717.10	28.70	271.40	329.87	-38.58	-327.60	2674.53	2.892
290	2723.90	28.30	276.30	333.05	-38.37	-330.84	2680.51	10.452
291	2733.50	28.80	277.90	337.51	-37.80	-335.39	2688.94	2.855
291	2743.10	29.70	277.50	342.06	-37.17	-340.04	2697.32	2.878
292	2752.80	30.90						
293	2762.40	32.40						
294	2772.10	33.00	273.00	356.86	-35.82	-355.05	2722.09	4.184
299	2781.20	33.80	271.90	361.81	-35.61	-360.06	2729.68	3.308
296	2790.90	33.90	271.70	367.17	-35.44	-365.46	2737.74	0.463
297	2800.60	33.10	272.30	372.48	-35.25	-370.81	2745.83	2.678
298	2810.30	32.50	271.40	377.69	-35.08	-376.06	2753.98	2.391
299	2820.00	32.50	270.90	382.87	-34.97	-381.27	2762.16	0.831
300	2829.70	33.20	270.30	388.11	-34.92	-386.53	2770.31	2.387
301	2839.40	34.00	270.00	393.45	-34.91	-391.90	2778.39	2.527
302	2849.10	34.70	267.90	398.91	-35.01	-397.37	2786.40	4.256
303	2858.80	35.30	269.30	404.46	-35.14	-402.93	2794.34	3.100
304	2868.50	36.00	269.30	410.10	-35.21	-408.59	2802.23	2.165
305	2878.20	36.20	269.40	415.80	-35.28	-414.30	2810.06	0.645
311	2888.29	36.00	270.50	421.72	-35.28	-420.25	2818.22	2.017
312	2898.00	36.00	272.40	427.40	-35.14	-425.95	2826.07	3.450
308	2907.75	36.00	271.50	433.09	-34.94	-431.68	2833.96	1.628
309	2917.40	35.20	273.30	438.67	-34.71	-437.29	2841.81	4.098
310	2927.13	35.10	272.80	444.22	-34.41	-442.88	2849.76	0.940

PAJAK ENGINEERING LTD.

FORMATION TOPS RECORD

WELL NAME: CDN FOREST ET AL NORTH LIARD C-31-A

AFE: 004009

RIG: 58E

LOCATION: 300-C31-6040-12330-0

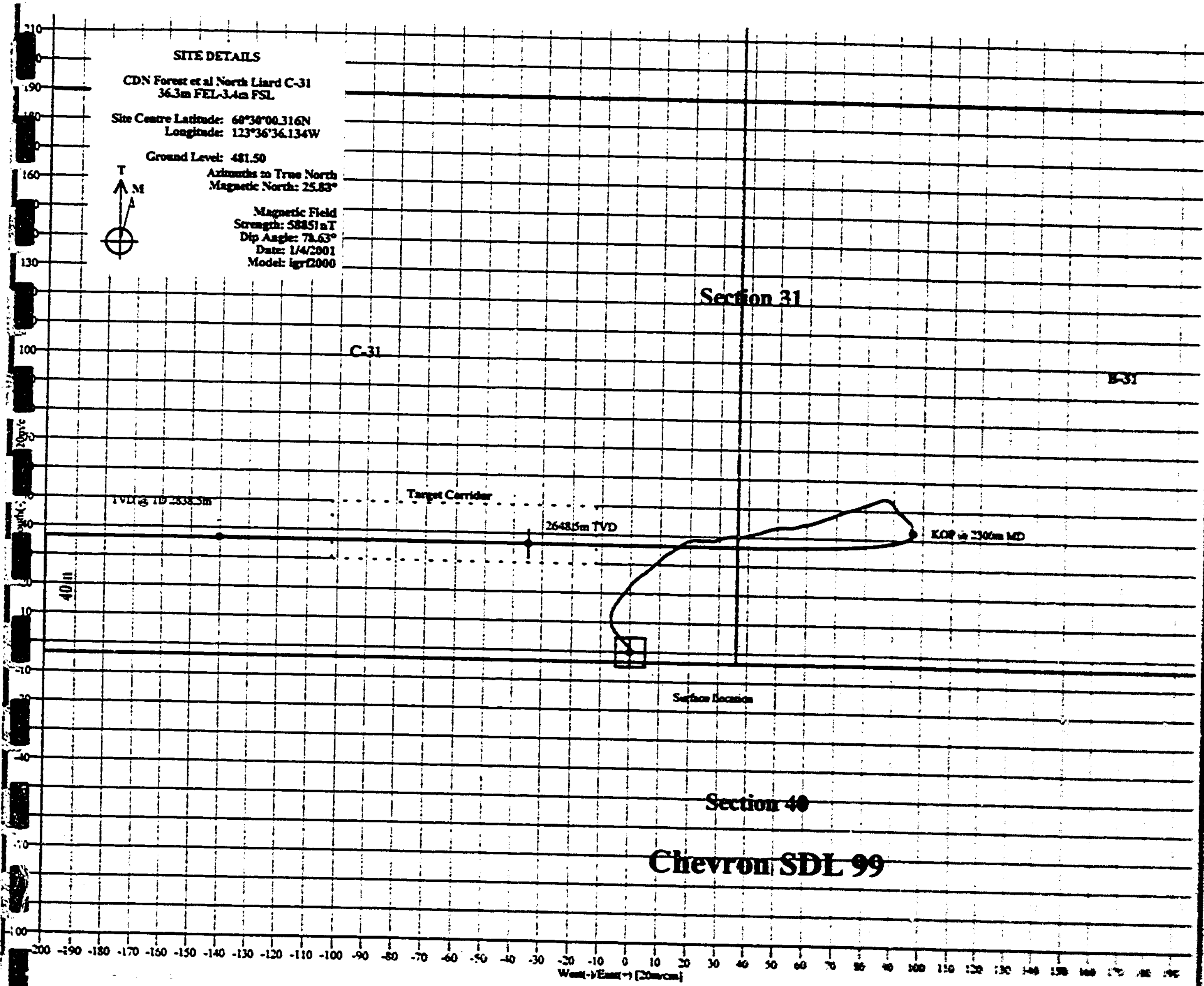
CONTRACTOR: AKITA DRILLING LTD.

Mon Nov 05 08:47:23 2001

DAY	FORMATION	TOP (MD M)	TOP (TVD M)
154	Horn River	2367.8	0.0

Canadian Forest Oil Ltd.

Field: North Liard
Site: CDN Forest et al North Liard C-31
Well: Grid Area N60/40 W123/30
Wellpath: 3134 ST
Plan: Plan #3



Plan: Plan #3 (Grid Area N60/40 W123/30/3134 ST)

Created By: Jason Sullivan

Date: 2/6/2001

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Site Centre CDN Forest et al North Liard C-31, True North
Vertical (TVD) Reference: RKB 485.00
Section (VS) Reference: Site Centre (0.00N,0.00E)
Measured Depth Reference: RKB 485.00
Calculation Method: Minimum Curvature

Ryan Energy Technologies Inc.
Suite 700, 505 - 2nd Street SW

Ryan Energy Technologies Inc
Planning Report

Company: Canadian Forest Oil Ltd		**Date:** 2/6/2001	**Time:** 08:46:06 **Page:** 1
Field: North Liard		**Co-ordinate(NE) Reference:**	Site: CDN Forest et al North Liard C-31
Site: CDN Forest et al North Liard C-31		**Vertical (TVD) Reference:**	RKB 485.0
Well: Grid Area N60/40 W123/30		**Section (VS) Reference:**	Site (0.00N,0.00E,316.28Azi)
Wellpath: 3134 ST		**Survey Calculation Method:**	Minimum Curvature **Db:** Sybase

Survey: **Start Date:**

Company: **Engineer:**
Tool: **Tied-to:**

Site: CDN Forest et al North Liard C-31

36.3m FEL-3.4m FSL

Site Position: **Northing:** 6707262.22 m **Latitude:** 60 30 0.316 N
From: Geographic **Easting:** 486488.71 m **Longitude:** 123 36 36.134 W
Position Uncertainty: 0.00 m **North Reference:** True
Ground Level: 481.50 m **Grid Convergence:** -0.53 deg

Wellpath: 3134 ST **Drilled From:** 3134 OH
Tie-on Depth: 2300.00 m
Current Datum: RKB **Height** 485.00 m **Above System Datum:** Mean Sea Level
Magnetic Data: 1/4/2001 **Declination:** 25.88 deg
Field Strength: 58851 nT **Mag Dip Angle:** 78.83 deg

Vertical Section: Depth From (TVD) m	+N/-S m	+E/-W m	Direction deg
2648.50	0.00	0.00	316.28

Plan: Plan #3 **Date Composed:** 1/4/2001
Version: 1
Principal: Yes **Tied-to:** From: Definitive Path

Plan Section Information

MD m	Incl deg	Azim deg	TVD m	+N/-S m	+E/-W m	DLS deg/30m	Build deg/30m	Turn deg/30m	TFO deg	Target
2300.00	3.19	167.63	2294.32	42.62	96.65	0.000	0.000	0.000	0.00	
2523.90	29.02	270.09	2508.87	36.48	42.45	4.000	3.460	13.728	107.92	
2683.57	29.02	270.09	2648.50	36.60	-35.00	0.000	0.000	0.000	0.00	2648.5m TVD
2900.84	29.02	270.09	2838.50	36.76	-140.39	0.000	0.000	0.000	0.00	

Survey

MD m	Incl deg	Azim deg	TVD m	VS m	N/S m	E/W m	DLS deg/30m	Build deg/30m	Turn deg/30m	Sys TVD m	Comment
2300.00	3.19	167.63	2294.32	-36.00	42.62	96.65	0.000	0.000	0.000	1809.32	KOP @ 2300m MD
2320.00	3.47	214.62	2314.29	-36.55	41.58	96.43	4.000	0.421	70.485	1829.29	
2350.00	6.44	247.56	2344.18	-36.17	40.19	94.35	4.000	2.971	32.943	1859.18	
2380.00	10.14	258.34	2373.86	-34.15	39.01	90.21	4.000	3.703	10.773	1888.86	
2410.00	14.01	263.31	2403.19	-30.56	38.05	84.01	4.000	3.866	4.969	1918.19	
2440.00	17.93	266.15	2432.03	-25.41	37.32	75.79	4.000	3.924	2.840	1947.03	
2470.00	21.86	267.99	2460.23	-18.73	36.81	65.59	4.000	3.951	1.844	1975.23	
2500.00	25.86	269.29	2487.66	-10.54	36.54	53.46	4.000	3.965	1.302	2002.66	
2523.90	29.02	270.09	2508.87	-2.97	36.48	42.45	4.005	3.978	1.002	2023.87	
2530.00	29.02	270.09	2514.20	-0.93	36.48	39.49	0.017	-0.017	-0.005	2029.20	
2560.00	29.02	270.09	2540.44	9.25	36.51	24.94	0.000	0.000	0.000	2055.44	
2590.00	29.02	270.09	2566.67	19.22	36.53	10.39	0.003	0.000	0.000	2081.67	
2620.00	29.02	270.09	2592.91	29.30	36.55	-4.16	0.000	0.000	0.000	2107.91	
2650.00	29.02	270.09	2619.14	39.37	36.57	-18.72	0.010	0.000	0.000	2134.14	
2680.00	29.02	270.09	2645.38	49.44	36.60	-33.27	0.010	0.000	0.000	2160.38	
2683.57	29.02	270.09	2648.50	50.64	36.60	-35.00	0.039	0.029	0.008	2163.50	2648.5m TVD
2710.00	29.02	270.09	2671.61	59.52	36.62	-47.82	0.004	-0.004	-0.001	2186.61	
2740.00	29.02	270.09	2697.85	69.59	36.64	-62.37	0.000	0.000	0.000	2212.85	
2770.00	29.02	270.09	2724.08	79.66	36.67	-76.92	0.000	0.000	0.000	2239.08	
2800.00	29.02	270.09	2750.31	89.74	36.69	-91.48	0.000	0.000	0.000	2265.31	
2830.00	29.02	270.09	2776.55	99.81	36.71	-106.03	0.000	0.000	0.000	2291.55	
2860.00	29.02	270.09	2802.78	109.88	36.73	-120.58	0.000	0.000	0.000	2317.78	
2890.00	29.02	270.09	2829.02	119.95	36.76	-135.13	0.000	0.000	0.000	2344.02	
2900.84	29.02	270.09	2838.50	123.60	36.76	-140.39	0.010	0.010	0.003	2353.50	

Ryan Energy Technologies Inc
Planning Report

Company: Canadian Forest Oil Ltd.	**Date:** 2/6/2001	**Time:** 08:46:06	**Page:** 2
Field: North Liard	**Co-ordinate(NE) Reference:**	Site: CDN Forest et al North Liard C-31	
Site: CDN Forest et al North Liard C-31	**Vertical (TVD) Reference:**	RKB 485.0	
Well: Grid Area N60/40 W123/30	**Section (VS) Reference:**	Site (0.00N,0.00E,316.28Azi)	
Wellpath: 3134 ST	**Survey Calculation Method:**	Minimum Curvature	**Db:** Sybase

Targets

Name	Description	TVD m	+N/-S m	+E/-W m	Map Northing m	Map Easting m	Latitude Deg	Latitude Min	Latitude Sec	Longitude Deg	Longitude Min	Longitude Sec
2648.5m TVD -Plan hit target		2648.50	36.60	-35.00	6707299.14	466454.05	60	30	1.499 N	123	36	38.428 W

Formations

MD	TVD	Formations	Lithology	Dip Angle	Dip Direction

ATTACHMENT #11

(Previously submitted on September 17, 2001 with Final Well Report for

CDN FOREST et al NORTH LIARD C-31).

ATTACHMENT #12

ATTACHMENT #12

OPEN HOLE LOGS

COPIES OF THE LOGS ARE IN ONLY ONE COPY OF THE FINAL WELL REPORT
SHOULD YOU REQUIRE ADDITIONAL COPIES, PLEASE CONTACT
CANADIAN FOREST OIL LTD.

ATTACHMENT #13

ATTACHMENT #13

NONE

ATTACHMENT #14

ATTACHMENT #14

VSP & SURVEYS/OTHER LOGS

SUBMITTED UNDER SEPARATE COVER

ATTACHMENT #15

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**January 12, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 159 thru 165

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**CNRL** 2500, 855 – 2nd Street SW Calgary, Alberta T2P 4J8
Attn:	**Tony Sabelli**
Date:	

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 166 thru 172

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM Canadian Forest Oil Ltd. 600, 800 – 6th Avenue SW Calgary, Alberta T2P 3G3 (403) 292-8000	
To:	N.E.B. 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	Andy Graw
Date:	January 22, 2001

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 173 thru 179

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**January 30, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 180 thru 186

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**February 5, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 185 thru 193

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**February 16, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 194 thru' 200

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**February 21, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 201 thru 207

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM

Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	Andy Graw
Date:	February 27, 2001

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 208 thru' 214

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM

Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**March 5, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 215 thru 221

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM

Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**March 12, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 222 thru 228

A copy of this transmittal is on file at our office.

Please call Susan Jones at 292-8151 if you have any problems.

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**March 23, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 229 thru 235

Please sign and return fax to 292-8145 attention Susan Jones.

Signature:________________________ **Date:**______________

DATA TRANSMITTAL FORM
Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**March 29, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 236 thru 241

Please sign and return fax to 292-8145 attention Susan Jones.

Signature:______________________ **Date:**____________

DATA TRANSMITTAL FORM

Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**April 4, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

Cdn Forest et al North Liard C-31
Geological Reports 242

Please sign and return fax to 292-8145 attention Susan Jones.

Signature:_________________________ **Date:**______________

DATA TRANSMITTAL FORM

Canadian Forest Oil Ltd.
600, 800 – 6th Avenue SW
Calgary, Alberta
T2P 3G3
(403) 292-8000

To:	**N.E.B.** 444 – Seventh Avenue SW Calgary, Alberta T2P 0X8
Attn:	**Andy Graw**
Date:	**April 11, 2001**

Enclosed please find the following information pertaining to the captioned well(s):

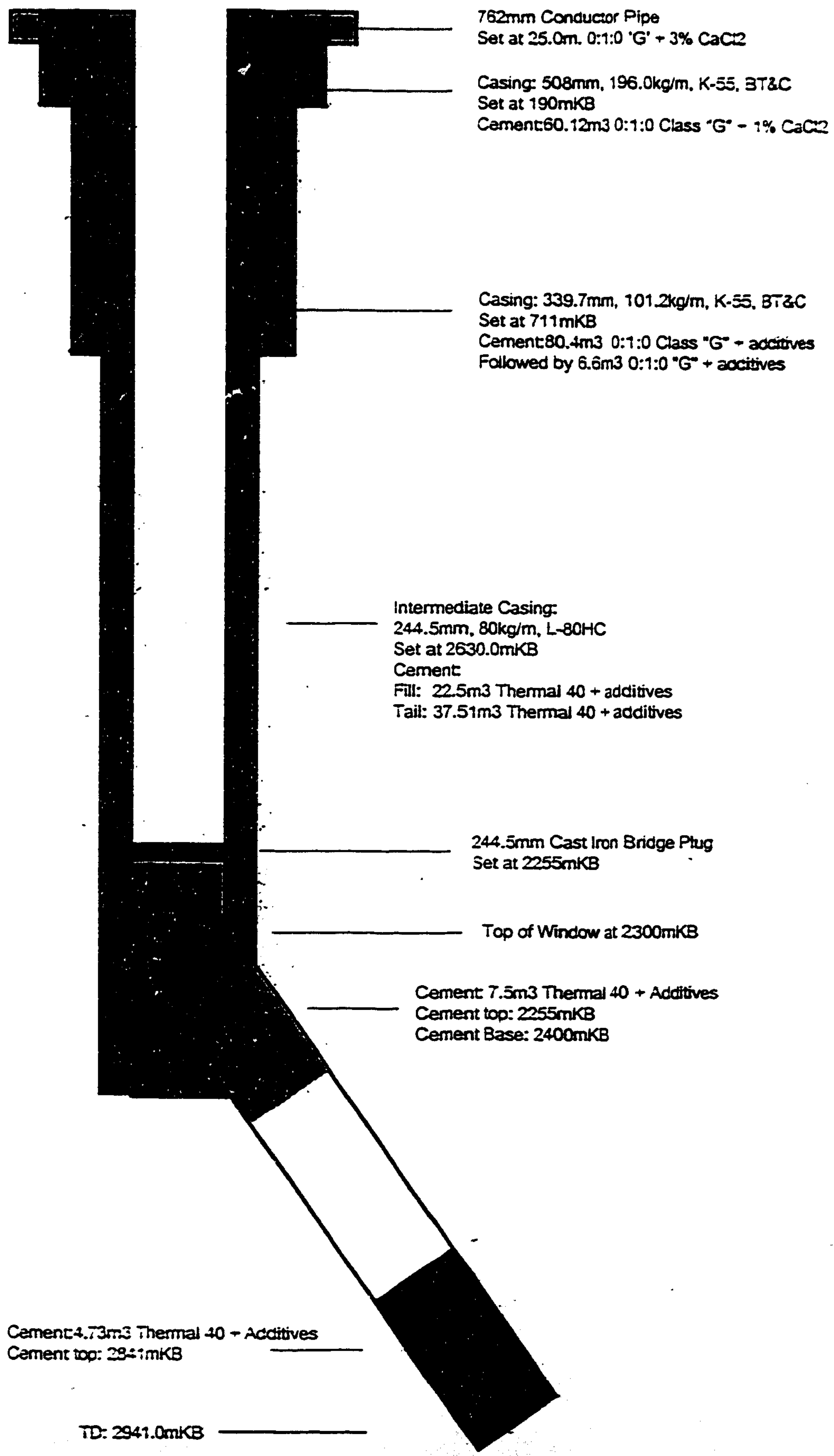
Cdn Forest et al North Liard C-31
Geological Well Report x 2

Please sign and return fax to 292-8145 attention Susan Jones.

Signature:______________________ **Date:**____________

ATTACHMENT #17

WELLBORE SCHEMATIC
CDN Forest et al North Liard C-31-A



ATTACHMENT #18

ABB

ABB Vetco Gray Canada Inc.
Quotation 00-8410

2000, 520 - 5th Avenue S.W. • Calgary, Alberta • T2P 3R7
Phone: (403) 264-4146 • Fax: (403) 269-4224
1-800-925-6024

Date: May 4, 2000

To: Canadian Forest Oil Ltd. c/o Pajak Engineering

Attention: Mr. Gerard Geib

Reference: North Liard "C-31"

F.O.B.Point: Edmonton, Alberta.

Delivery: Casing Head Assembly – 1 week

Well Head Assembly – 10 weeks

Payment Terms: Net 30 Days

Quotation Validity: 90 Days

Account Representative: Mr. Bill Rathgeber

Per Standard ABB Vetco Gray Canada Terms And Conditions Attached

Item	Qty	Description	Unit	Total
1.	1	ABB VG-100 casing bowl: 13 5/8" 5000# x 13 3/8" ODSO c/w 2- 2 1/16" 5000# SSO & 2 lockdown screws L, DD, PR-1, PSL-2	4613.40	4613.40
2.	1	ABB VG-100A automatic slips: 13 5/8" x 9 5/8" L, DD, PR-1, PSL-2	2459.16	2459.16
3.	2	ABB VGC gate valve: 2 1/16" 5000# flanged full opening, L, DD, PR-1, PSL-2	2380.28	4760.56
4.	2	Companion flange: 2 1/16" 5000# x 2" LP L, DD, PR-1, PSL-2	131.67	263.34
5.	2	Bull plug: 2" LP XXH solid	22.50	45.00

ABB

Quotation 00-8410
Page 2

Item	Qty.	Description	Unit	Total
6.	2	L7 studs c/w 2- 2H nuts: 7/8" x 6" long, set of 8	38.70	77.40
7.	4	R-24 stainless steel ring gaskets	44.10	176.40
8.	1	BX-160 stainless steel ring gasket	349.20	349.20
9.	1	ABB VG-100 wear bushing: 13 5/8" Nom.	1166.40	1166.40
		Casing Subtotal:		**$13,910.86**
10.	1	ABB VG-OF tubing head: 13 5/8" 5000# x 11" 5000# c/w 2- 2 1/16" 5000# SSO L, DD, PR-1, PSL-3	6630.00	6630.00
11.	1	ABB GRF secondary seal: 13 5/8" x 9 5/8" c/w snap ring, L, DD, PR-1, PSL-2 c/w HSN rubber	845.00	845.00
12.	1	ABB XP-1 tubing hanger: 11" x 3 ½" NSCT extended neck up c/w 3 ½" NSCT suspension threads & 3" B.P.V threads L, DD, PR-1, PSL-3	2356.00	2356.00
13.	1	ABB XP-1 adapter flange: 11" 5000# x 3 1/8" 5000# SSU c/w seal pocket & test ports L, DD, PR-1, PSL-3	2537.35	2537.35
14.	1	ABB VG-230 gate valve: 3 1/8" 5000# flanged, full opening, P-U, EE1, PR-2, PSL-3 c/w S.S gate & seats, carbide coated, 718 Inconell stem, Eligioly seat springs, CT stem packing	8082.00	8082.00
15.	4	ABB VG-230 gate valve: 3 1/8" 5000# flanged, full opening, L, EE1, PR-2, PSL-2 c/w S.S gate & seats, carbide coated, 718 Inconell stem, Eligioly seat springs, CT stem packing	4856.00	19424.00

ABB

Quotation 00-8410
Page 3

Item	Qty.	Description	Unit	Total
16.	1	ABB SC studded cross: 3 1/8" 5000# x 3 1/8" 5000# x 3 1/8" 5000# x 3 1/8" 5000# L, DD, PR-1, PSL-2, 4130 material	1851.88	1851.88
17.	1	ABB B.H.T.A bottom hole test adapter: 3 1/8" 5000# flanged c/w top cap ½" NPT tap & 3 ½" EUE internal lift threads L, DD, PR-1, PSL-2	777.48	777.48
18.	2	Companion flange: 3 1/8" 5000# x 3" LP L, DD, PR-1, PSL-2	474.30	948.60
19.	2	ABB VGC gate valve: 2 1/16" 5000# flanged, full opening L, DD, PR-1, PSL-2	2380.28	4760.56
20.	2	Companion flange: 2 1/16" 5000# x 2" LP PSL-2, L, DD, PR-1, PSL-2	131.67	263.34
21.	1	Bull plug: 2" LP XXH c/w ½" NPT tap	29.70	29.70
22.	1	Bull plug: 2" LP XXH solid	22.50	22.50
23.	2	Needle valve: ½" NPT straight , sour trim	121.50	243.00
24.	2	Pressure gauge: 0-5000# PSI sour trim	96.30	192.60
25.	4	R-24 stainless steel ring gasket	44.10	176.40
26.	9	R-35 stainless steel ring gasket	64.80	583.20
27.	1	R-54 stainless steel ring gasket	222.30	222.30
28.	1	BX-160 stainless steel ring gasket	349.20	349.20
29.	2	L7 studs c/w 2- 2H nuts: 7/8" x 6" long, set of 8	38.70	77.40
30.	4	L7 studs c/w 2- 2H nuts: 1 1/8" x 8" long, set of 8	80.10	320.40
31.	1	L7 studs c/w 2- 2H nuts: 1 7/8" x 13 ¾" long, set of 12	610.20	610.20
32.	1	L7 studs c/w 2- 2H nuts: 1 5/8" x 12 ½" long, set of 16	551.70	551.70
33.	1	Casing vent assembly, complete	214.20	214.20
		Wellhead Subtotal:		**$52,069.01**
		Assembly Total:		**$65,979.87**

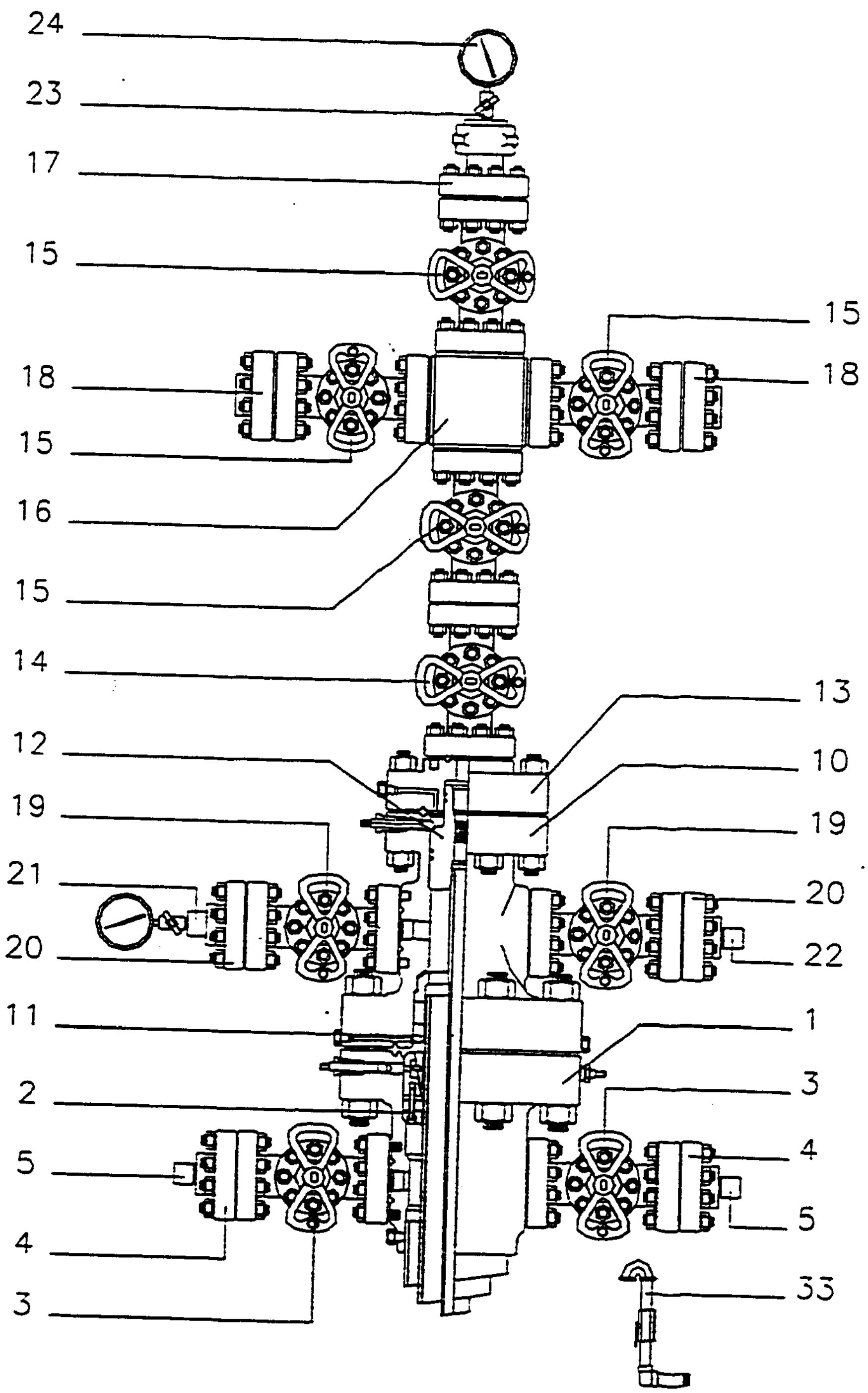
ABB	Quotation 00-8410 Page 4

Item	Qty.	Description	Unit	Total
		Optional Gate Valve:		
34.	1	ABB VG-231 gate valve: 3 1/8" 5000# flanged, full opening, P-U, EE1, PR-2, PSL-3 PR-2, c/w S.S gate & seat, carbide coated, 718 Inconell stem, Eligioly seat springs, CT stem packing fitted with hydraulic actuator, fail - closed, remote station, enclosed system		

Add GST

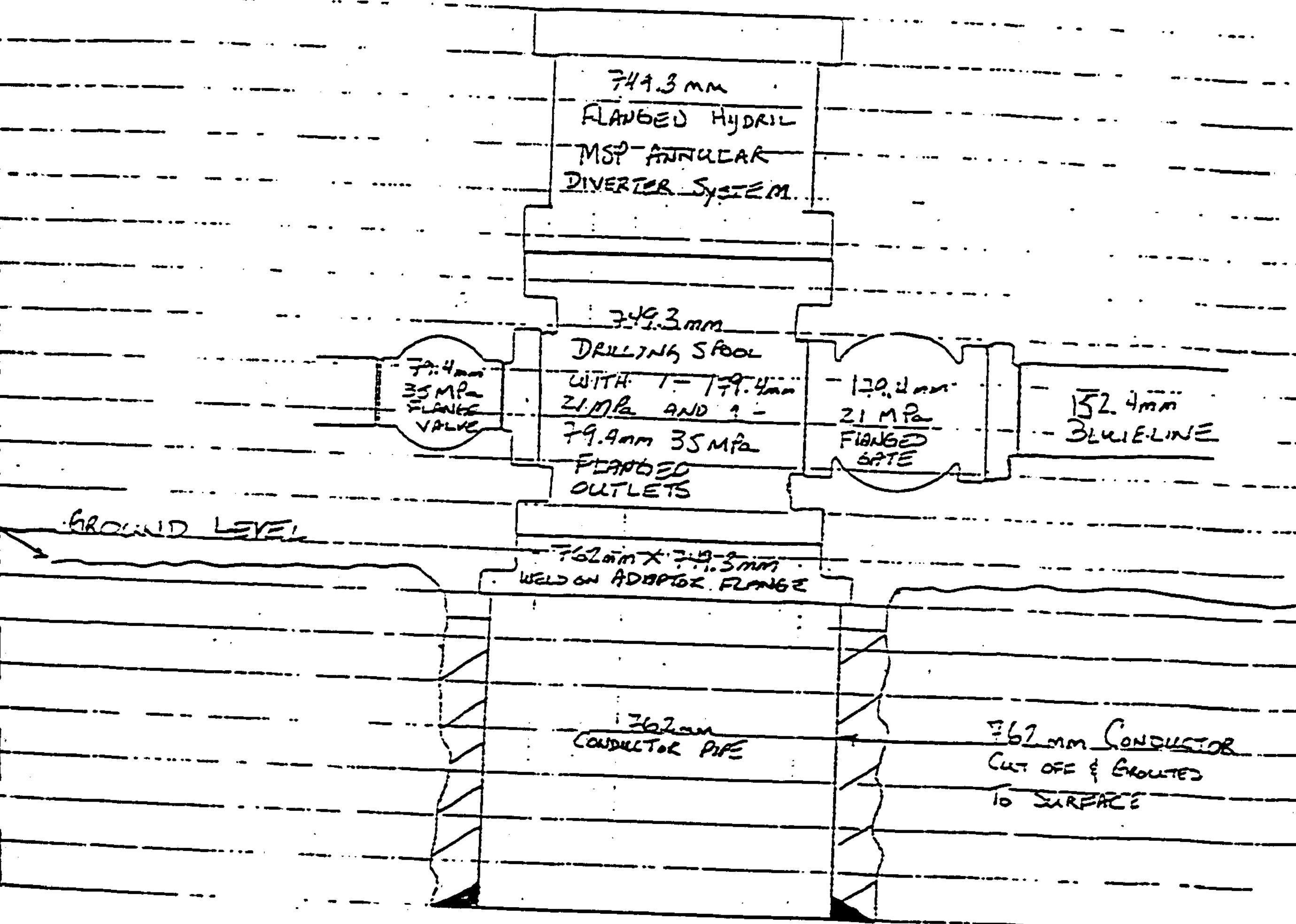
Additional Information: Kelly Hryniw 264-4146

Authorization:

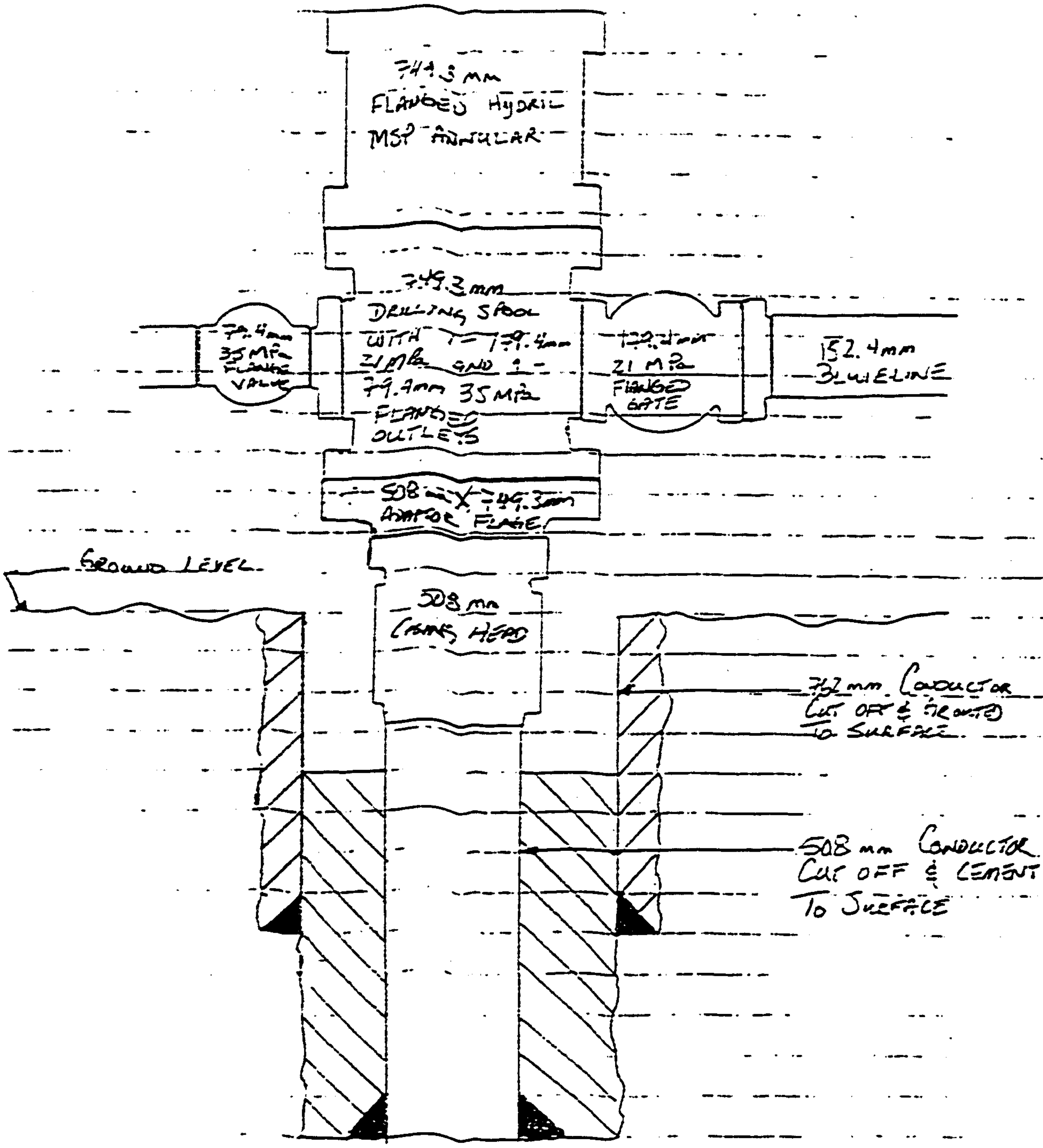


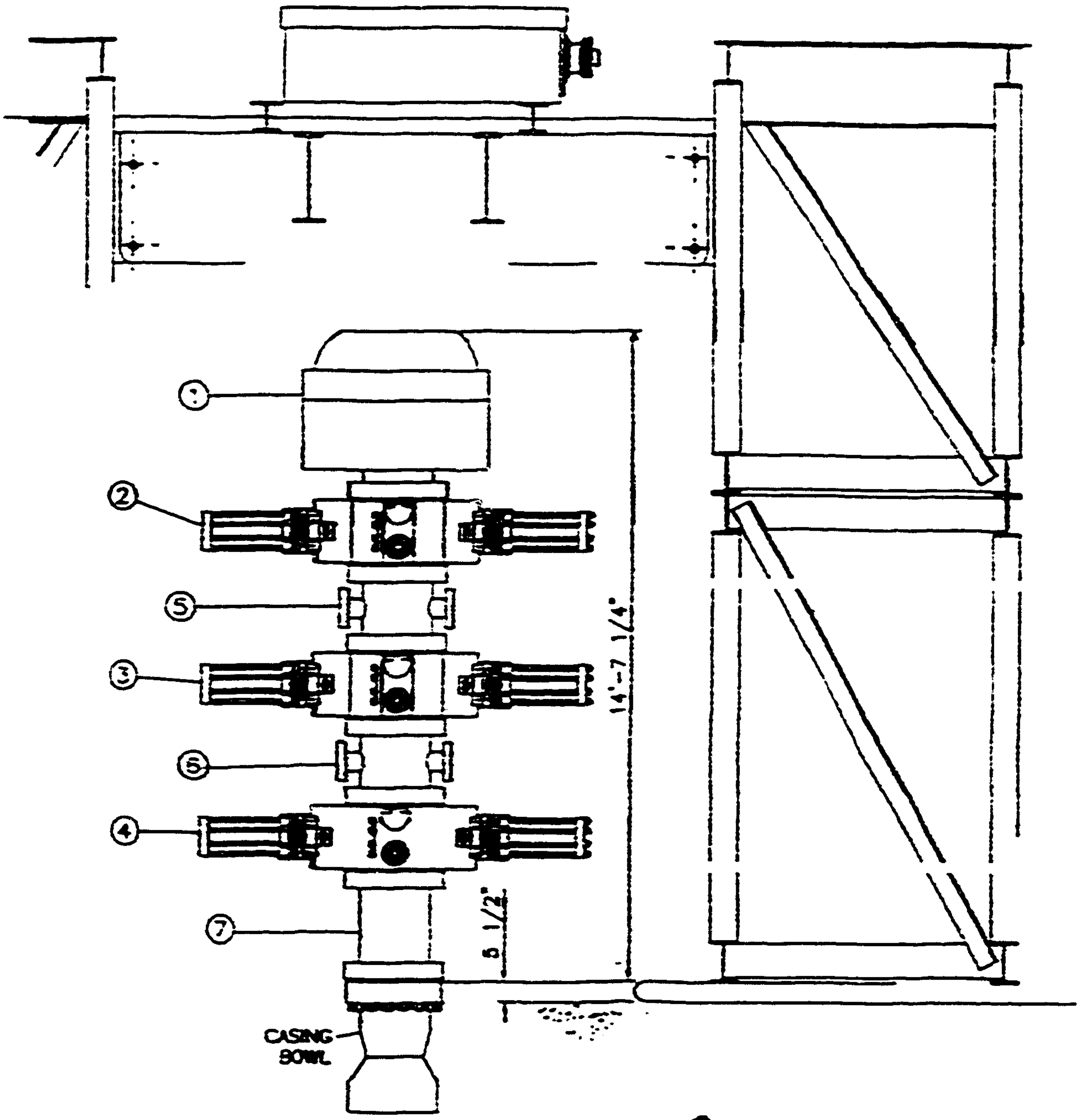
Vetco Gray Canada Inc.

Quotation 00-8410
For: Canadian Forest Oil c/o Pajak Eng.
Attn: Mr. Gerard Geib
Re: North Liard "C-31"



744.3 mm
FLANGED HYDRIL
MSP ANNULAR
DIVERTER SYSTEM
749.3 mm
DRILLING SPOOL
WITH 1 - 179.4mm
21 MPa AND 1 -
79.4mm 35 MPa
FLANGED
OUTLETS
79.4mm
35 MPa
FLANGE
VALVE
179.4mm
21 MPa
FLANGED
GATE
152.4mm
BLUIE-LINE
GROUND LEVEL
762mm X 749.3mm
WELD ON ADAPTOR FLANGE
762mm
CONDUCTOR PIPE
762 mm CONDUCTOR
CUT OFF & GROUTED
TO SURFACE


749.3 mm
FLANGED HYDRIL
MSP ANNULAR
749.3 mm
DRILLING SPOOL
WITH 1 - 179.4mm
21 MPa AND 1 -
79.4mm 35 MPa
FLANGED
OUTLETS
79.4mm
35 MPa
FLANGE
VALVE
179.4mm
21 MPa
FLANGED
GATE
152.4mm
BLUELINE
508 mm X 749.3mm
ADAPTOR FLANGE
GROUND LEVEL
508 mm
CASING HEAD
762 mm CONDUCTOR
CUT OFF & GROUTED
TO SURFACE
508 mm CONDUCTOR
CUT OFF & CEMENT
TO SURFACE



ITEM	DESCRIPTION
1	13-5/8" 5000# SHAFFER ANNULAR
2	13 5/8" 5000# SHAFFER SL PIPE RAM
3	13 5/8" 5000# SHAFFER SL BLIND RAM
4	13 5/8" 5000# SHAFFER SL PIPE RAM
5	13 5/8" 5000# DRILLING SPOOL x 23" HIGH
6	13 5/8" 5000# DRILLING SPOOL x 23" HIGH
7	13 5/8" x 11" 5000# X-OVER SPOOL x 29" HIGH

AKITA DRILLING LTD.

RIG 58

SUB SECTION AT WELL

OCTOBER, 1998

ATTACHMENT #19

FINAL SURVEY PLAN TO FOLLOW

GEOLOGICAL REPORT

DAX CONSULTING LTD.
4215 Dalhart Road N.W.
Calgary, AB T3A 1B6
Phone: 403-288-9388

GEOLOGICAL WELL REPORT

PREPARED FOR

CANADIAN FOREST OIL LTD.

CDN FOREST et al NORTH LIARD C-31 / C-31A

SURFACE LOCATION: Unit C, Section 31

GRID AREA North 60 degrees 40 seconds // West 123 degrees 30 seconds

UTM Zone 10

<u>DIRECTIONAL WELL</u>

Report prepared by: Bryan Bellman, P.Geol.
Robert Kelly
David Murray
William Godwin, P. Geol.

Report approved by: William Godwin, P. Geol.

Phone: (403) 288-9388 Fax: (403) 288-8499
E-mail daxwg@telusplanet.net or daxdac@telusplanet.net

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

TABLE OF CONTENTS

ADDENDUM

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

OPERATOR: CANADIAN FOREST OIL LTD.

WELL NAME: CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

C-31 SURFACE LOCATION: Unit C Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31 SURFACE COORDINATES: 3.4 metres North; 36.3 metres West
as measured from the southeast corner
of Unit C Section 31

C-31 FINAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31 FINAL COORDINATES: 75.6 metres North; 85.2 metres East
as calculated from well head centre

79.0 metres North; 48.9 metres East
as calculated from the southeast corner of
Unit C Section 31

LICENCE No.: API 1900

ELEVATIONS: **Ground:** 481.3 metres **K.B.:** 488.0 metres

ZONE(S) OF INTEREST: Primary: Devonian - Nahanni

WELLSITE CONSULTANTS / GEOLOGISTS: Bryan Bellman / Robert Kelly /
David Murray / Bill Godwin

COMPANY GEOLOGIST: James R. Taylor / Gary Winter

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

DRILLING CONTRACTOR: Akita Drilling Ltd. Rig No. 58

C-31 SPUD DATE: August 04, 2000 at 12:20 hour

C-31 TOTAL DEPTH DATE: December 27, 2000 at 05:00 hour

C-31 TOTAL DEPTH: 2730.75 metres K.B. / 2722.2 metres T.V.D.

C-31 TERMINATING FORMATION: Devonian – Horn River

VERTICAL SECTION AZIMUTH: 77.00 degrees

FINAL CLOSURE AND AZIMUTH: 114.0metres K.B. at 48.42 degrees

VERTICAL SECTION: 100.1 metres at 77.0 degrees

COMMENTS: Milled casing window, bottom of window at 2366.8 m K.B.
Top of whipstock ramp set at 2361.8 metres K.B. .
for commencement of Sidetrack No. 1 Drilling Operations
Well Name changed from C-31 to C-31A

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

C-31A SIDETRACK NO. 1

C-31A SIDETRACK NO. 1 START DATE: January 05, 2001 at 10:00 hour

MILLED CASING WINDOW BOTTOM: 2366.8 metres K.B. // 2361.0 metres T.V.D.

TOP OF WHIPSTOCK RAMP DEPTH: 2361.8 metres K.B. Set at 82.80 degrees

START FORMATION: Devonian – Ft. Simpson

C-31A SIDETRACK NO. 1 TOTAL DEPTH DATE: January 08, 2001 at 08:55 hour

C-31A SIDETRACK NO. 1 TOTAL DEPTH: 2450.0 metres K.B. // 2444.1 metres T.V.D.

TERMINATING FORMATION: Devonian – Horn River

C-31A INITIAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31A INITIAL COORDINATES: 39.4 metres North; 97.6 metres East
As calculated from well head centre
42.8 metres North; 61.3 metres East
as calculated from the southeast corner of
Unit C Section 31

C-31A FINAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31A FINAL COORDINATES: 42.0 metres North; 96.6 metres East
As calculated from well head centre
45.4 metres North; 60.3 metres East
as calculated from the southeast corner of
Unit C Section 31

WELL DATA SUMMARY

C-31A SIDETRACK NO. 1

VERTICAL SECTION AZIMUTH: 77.00 degrees

FINAL CLOSURE AND AZIMUTH: 105.3 metres K.B. at 66.50 degrees

VERTICAL SECTION: 103.6 metres at 77.00 degrees

C31A SIDETRACK NO. 1 STATUS: Abandoned

Note: Milled casing window, bottom of window at 2300.0 m K.B. Top of whipstock ramp set at 2395.0 metres K.B. . for commencement of Sidetrack No. 2 Drilling Operations

WELL DATA SUMMARY

C-31A SIDETRACK NO. 2

C-31A SIDETRACK NO. 2 START DATE: January 12, 2001 at 12:45 hour

MILLED CASING WINDOW BOTTOM: 2300.0 metres K.B. //
2294.3 metres K.B.

TOP OF WHIPSTOCK RAMP DEPTH: 2295.0 metres K.B. //
2289.3 metres T.V.D.
set at 77.00 degrees

START FORMATION: Devonian – Fort Simpson

C-31 A SIDETRACK NO. 2 TOTAL DEPTH DATE: January 24, 2001 at 06:15 hour

C-31 A SIDETRACK NO. 2 TOTAL DEPTH: 2330.0 metres K.B. // 2324.3 metres T.V.D.

TERMINATING FORMATION: Devonian – Fort Simpson

C-31A INITIAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31A INITIAL COORDINATES: 42.4 metres North; 96.6 metres East
As calculated from well head centre
45.8 metres North; 60.3 metres East
As calculated from the southeast corner
Of Unit C Section 31

C-31A FINAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds
MAP ZONE: UTM Zone 10

C-31A FINAL COORDINATES: 40.7 metres North; 97.0 metres East
As calculated from well head centre
44.1 metres North; 60.7 metres East
As calculated from the southeast corner
Of Unit C Section 31

WELL DATA SUMMARY

C31A SIDETRACK NO. 2

VERTICAL SECTION AZIMUTH: 77.00 degrees

FINAL CLOSURE AND AZIMUTH: 105.2 metres K.B. at 67.25 degrees

VERTICAL SECTION: 103.7 metres at 77.00 degrees

C31A SIDETRACK NO. 3 STATUS: Abandoned

Note: Plugged back to 2301.0 m K.B.for commencement of Sidetrack No. 3 Drilling Operations

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

C-31A SIDETRACK NO. 3

C-31A SIDETRACK NO. 3 START DATE: January 27, 2001 at 00:40 hour

MILLED CASING WINDOW BOTTOM: 2300.0 metres K.B. // 2294.3 metres T.V.D.

TOP OF WHIPSTOCK RAMP DEPTH: 2295.0 metres K.B. // 2289.3 metres T.V.D. Set at 234.00 degrees

CEMENT PLUG DEPTH: 2301.0 metres K.B. // 2295.2 metres T.V.D.

START FORMATION: Devonian – Fort Simpson

C-31A SIDETRACK NO. 3 TOTAL DEPTH DATE: March 30, 2001 at 09:30 hour

C-31A SIDETRACK NO. 3 TOTAL DEPTH: 2941.5 metres K.B. // 2865.3 metres .V.D.

TERMINATING FORMATION: Devonian – Horn River

C-31A INITIAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds

C-31A INITIAL COORDINATES: 42.3 metres North; 96.6 metres East
As calculated from well head centre
45.7 metres North; 60.3 metres East
As calculated from the southeast corner of
Unit C Section 31

C-31A FINAL LOCATION: Unit B Section 31
GRID AREA North 60 degrees 40 seconds
West 123 degrees 30 seconds

C-31A FINAL COORDINATES: 43.7 metres North; 177.0 metres West
As calculated from well head centre
47.1 metres North; 213.3 metres West
As calculated from the southeast corner of
Unit C Section 31

WELL DATA SUMMARY

C-31A SIDETRACK NO. 3

VERTICAL SECTION AZIMUTH: 316.28 degrees

FINAL CLOSURE AND AZIMUTH: 182.3 metres K.B. at 283.86 degrees

VERTICAL SECTION: 153.9 metres at 316.28 degrees

C31A SIDETRACK NO. 3 STATUS: Abandoned

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

CASING RECORD:

Upper Conductor Hole: Hole Size: 914.5 mm Casing Size: 762.0 mm
Landing Depth: 17.9 metres K.B

Lower Conductor Hole: Hole Size: 660.4 mm Casing Size: 508.0 mm
Weight and Type: 139.9 kg/m, K-55, BT&C
Landing Depth: 190.0 metres K.B

Surface Hole: Hole Size: 444.5 mm Casing Size: 339.7 mm
Weight and Type: 101.2 kg/m, K-55, BT&C, IPSCO
Surface Casing Landing Depth: 710.3 metres K.B

First Intermediate Hole: Hole Size: 311.2 mm Casing Size: 244.5 mm
Weight and Type: 79.6 kg/m, HCL-80, BT&C, IPSCO
First Intermediate Casing Landing Depth: 2629.5 metres K.B

Second Intermediate Hole: Hole Size: 215.9 mm

MUD COMPANY: Dynamic Drilling Fluids

MUD PARAMETERS:

Interval	Mud System
0 m to 190.0 m	K2SO4
190.0 m to 711.0 m	K2SO4
711.0 m to 2629.5 m	K2SO4
2629.5 m to 2730.75 m	K2SO4
2366.8 m to 2450.0 m	K2SO4
2302.2 m to 2330.0 m	K2SO4
2301.2 m to 2895.4 m	K2SO4
2895.4 m to 2941.5 m	K2SO4

WELL DATA SUMMARY

SAMPLES: Operator: CANADIAN FOREST OIL LTD.

Interval:
0 m to 2570.0 m at 5.0 m intervals
2570.0 m to 2730.75 m at 2.5 m intervals
2366.8 m to 2450.0 m at 2.5 m intervals
2302.2 m to 2330.0 m at 2.5 m intervals
2301.2 m to 2895.4 m at 2.5 m intervals
2895.4 m to 2941.5 m at 2.5 m intervals

Two (2) sets of washed sample vials and trays

Government: NATIONAL ENERGY BOARD // GEOLOGICAL SURVEY of CANADA

Interval:
0 m to 2570.0 m at 5.0 m intervals
2570.0 m to 730.75 m at 2.5 m intervals
2366.8 m to 2450.0 m at 2.5 m intervals
2302.2 m to 2330.0 m at 2.5 m intervals
2301.2 m to 2895.4 m at 2.5 m intervals
2895.4 m to 2941.5 m at 2.5 m intervals

Two (2) sets of washed sample vials and trays
One (1) set of dried unwashed sample bags

CORES: None

DRILL STEM TESTS: None on penetration

WELL DATA SUMMARY

LOGGING PROGRAM:

Company: Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 2016

Logging Engineer: S. Kirstine / T. Maksymchuk

Date: August 19, 2000

Run No. 1

Service No. 1	Logging Device	Logged Interval	Time
	AIT-BHCS-SP-GR-CAL	708.6 m to 190.0 m	5.75 hours

Company: Scientific Drilling Ltd.
Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 3025

Logging Engineer: G. Stewart

Date: August 19, 2000

Service No. 2	GYRO SURVEY	705.2 m to 0.0 m	3.0 hours

Comments: Logs run in combination, two runs made - one centralized, one E centralized , due to large hole diameter.

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

LOGGING PROGRAM:

Company: Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 3025

Logging Engineer: G. Stewart

Date: December 14, 2000

Run No. 2

Service No. 1	Logging Device	Logged Interval	Time
	FMI-DSI-GR-CAL	2613.5 m to 710.0 m	12.0 hours
	ARI-CNL-LDT-GR-XYCAL	2619.0 m to 710.0 m	8.5 hours

Company: Scientific Drilling Ltd.
Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 3025

Logging Engineer: G. Stewart

Date: December 15, 2000

Service No. 2	GYRO SURVEY	2629.0 m to 710.0 m	3.0 hours

Comments: Caliper stuck open on first run, problems encountered with wireline fraying – lost time 2.0 hours. Hole severely washed out resulting in poor quality logs

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

LOGGING PROGRAM: Company: Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 2039

Logging Engineer: G. Robbins

Date: December 23, 2000

Run No. 3

Service No. 1	Logging Device	Logged Interval	Time
	USIT / CBT	2625.0 m to 1700.0 m	6.5 hours

Comments: Standardized and pressurized runs.

DAX Consulting Ltd.
CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

LOGGING PROGRAM:

Company: Schlumberger of Canada Ltd.

District: Grande Prairie Unit No.: 2028

Logging Engineer: G. Stewart

Date: December 29, 2000

Run No. 4

Service No. 1	Logging Device	Logged Interval	Time
	FMI-DSI-GR-CAL	2671.0 m to 2100.0 m	4.5 hours

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

LOGGING PROGRAM: Company: Schlumberger of Canada Ltd.

District: Nisku / Grande Prairie Unit No.: 2028

Date: March 21- 25, 2001

Run No. 5

Service No. 1	Logging Device	Logged Interval	Time
	CSAT-SGTL	160 m, 234 m, 160 m	5.25 hours

Comments: Logging operations conducted via wireline inside to intermediate casing. One (1) shot taken at 160 metres, three (3) shots taken at 234 metres, two (2) shots taken at 1320 metres.

Service No. 2	Logging Device	Logged Interval	Time
	CSAT-SGTL TLC Pipe Conveyed	2882 m, 2696, 2359 m	31.25 hours

Comments: Driller Total Depth – 2895.4 metres K.B., Logger stopped descent into hole at 2885 metres K.B. Two (2) shots taken at 2882 metres, one (1) shot taken at 2696 metres, three (3) shots taken at 2359 metres. Twelve shot holes drilled at closure distance of 50 m at 200 degrees Azimuth from well head centre.

Service No. 3	Logging Device	Logged Interval	Time
	MESTB(FMS) TLC Pipe Conveyed	2863.6 m to 2310.0 m	25.00 hours

Comments: Driller Total Depth – 2895.4 metres K.B., Logger stopped descent into hole at 2874.2 metres K.B.

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

DIRECTIONAL DRILLING SERVICES:

Company: Ryan Energy Technologies Inc.

Directional Drillers: William Baskin
Shane Matthews
Steven Walker
Brad Sandquist

Date: August 04, 2000 to March 30, 2001

Interval: 0.0 metres K.B. to 2629.5 metres K.B.
2629.5 metres K.B. to 2730.75 metres K.B.
2366.8 metres K.B. to 2450.0 metres K.B.
2300.0 metres K.B. to 2330.0 metres K.B.
2300.0 metres K.B. to 2895.4 metres K.B.
2895.4 metres K.B. to 2941.5 metres K.B.

MWD GAMMA RAY RECORD SERVICES:

Company: Ryan Energy Technologies Inc.

MWD Technicians: Wray Burch
James Harrison
Frank Seelagar
James Harrison
Scott Florence
Phil Cann

Date: September 28, 2000 to March 30, 2001

Interval: 1760.0 metres K.B. to 2616.75 metres K.B.
2616.75 metres K.B to 2718.0 metres K.B.
2366.8 metres K.B. to 2437.25 metres K.B.
2300.0 metres K.B. to 2317.25 metres K.B.
2300.0 metres K.B. to 2885.0 metres K.B.
2885.0 metres K.B. to 2931.1 metres K.B.

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

WELL DATA SUMMARY

TOTAL GAS and CHROMATOGRAPHY SERVICES:

Company: Datalog Technology (Calgary) Inc.

Technicians:
Adrian Pristol
Pavel Alksne
Timour Chayipov
Ben Miller
Dan Stefanescu
Aliarcid Rodriguiz
Doug Haugen
Kurtis Coonfer
Todd King
Phill Penney
Gordon Bennett

Date: August 04, 2000 to March 30, 2001

Interval:
275.0 metres K.B. to 2629.5 metres K.B.
2629.5 metres K.B. to 2730.75 metres K.B.
2366.8 metres K.B. to 2450.0 metres K.B.
2302.2 metres K.B. to 2330.0 metres K.B.
2302.2 metres K.B. to 2895.4 metres K.B.
2895.4 metres K.B. to 2941.5 metres K.B.

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

GEOLOGICAL MARKERS

K.B. ELEVATION: 488.0 metres

FORMATION		PROGNOSIS SUBSEA (metres)	MEASURED LOG / MWD DEPTH (metres)	T.V.D. LOG / MWD (metres)	T.V.D SUBSEA (metres)
LOWER MISSISSIPPIAN					
Flett		-	0.0	0.0	+ 488.0
Yohin (?)		-	94.0	94.0	+ 394.0
Clausen (?)		-	234.0	234.0	+ 254.0
Yohin (?)		-	273.0	273.0	+ 215.0
Besa River Fault		-	301.0	301.0	+ 187.0
Besa River		+ 461.0	352.2	352.1	+ 135.9
Banff		- 840.0	1318.8	1314.5	- 826.5
UPPER DEVONIAN					
Exshaw		- 1030.0	1542.0	1537.4	- 1049.4
MIDDLE DEVONIAN					
Ft.Simpson		- 1080.0	1598.0	1593.9	- 1105.9
Horn River		- 1780.0	2355.4	2349.6	- 1861.6
First Intermediate Casing			2629.5	2622.6	- 2134.6
Muskwa		- 1930.0	Not penetrated		
Nahanni		- 2190.0	Not penetrated		
Total Depth C31	Driller	- 2600.0	2730.7	2722.2	- 2234.2
	Logger	- 2600.0	2672.0	2664.9	- 2176.9

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

GEOLOGICAL MARKERS

K.B. ELEVATION: 488.0 metres

FORMATION		PROGNOSIS SUBSEA (metres)	MEASURED LOG / MWD DEPTH (metres)	T.V.D. LOG / MWD (metres)	T.V.D SUBSEA (metres)
MIDDLE DEVONIAN					
Ft.Simpson		- 1080.0	1598.0	1593.9	- 1105.9
Horn River (?)		- 1780.0	2355.4	2349.6	- 1861.6
C-31A Sidetrack No. 1 Base of Intermediate casing Window			2366.8	2361.0	- 1873.0
Muskwa		- 1930.0	Not penetrated		
Nahanni		- 2190.0	Not penetrated		
Total Depth C-31A Sidetrack No. 1	Driller	- 2600.0	2450.0	2444.1	- 1956.1
MIDDLE DEVONIAN					
Ft.Simpson		- 1080.0	1598.0	1593.9	- 1105.9
C-31A Sidetrack No. 2 Base of Intermediate Casing Windows			2300.0	2294.3	- 1806.3
Horn River (?)		- 1780.0	Not penetrated		
Muskwa		- 1930.0	Not penetrated		
Nahanni		- 2190.0	Not penetrated		
Total Depth C-31A Sidetrack No. 2	Driller	- 2600.0	2330.0	2324.3	- 1836.3
MIDDLE DEVONIAN					
Ft.Simpson		- 1080.0	1598.0	1593.9	- 1105.9
C-31A Sidetrack No. 3 Base of Intermediate Casing Window			2300.0	2294.3	- 1806.3
Top of Cement Plug			2301.0	2295.2	- 1807.2
Horn River (?)		- 1780.0	2336.8	2330.4	- 1842.4
Muskwa		- 1930.0	Not penetrated		
Nahanni		- 2190.0	Not penetrated		
Total Depth C-31A Sidetrack No. 3	Driller	- 2600.0	2941.5	2865.3	- 2377.3

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CDN FOREST et al NORTH LIARD C31 / C31A 60-40-123-30

BIT RECORD

BIT No.	TYPE	SIZE (mm)	DEPTH OUT (metres)	METRES DRILLED	TOTAL HOURS
1A	J7	215	190.0	190.0	25.00
2A	R3	660	117.0	117.0	30.75
3A	DGJ	215	190.0	73.0	6.25
1B	SS33SG	444.5	229.0	39.0	37.00
2B	MS51AM	444.5	336.0	107.0	26.25
3B	FM2864	444.5	395.0	59.0	11.50
4B	I5JSL	444.5	612.0	217.0	41.00
5BRR	I5JSL	444.5	711.0	99.0	21.00
1C	ATJ-15	311.2	722.0	11.0	2.75
2C	FM-2763	311.2	1474.0	752.0	121.0
3C	ATJ-15	311.2	1474.0	REAMING	70.25
4C	EHP44H	311.2	1626.0	152.0 REAMING	43.50 19.75
5CRR	ATJ-15	311.2	1221.0	REAMING	52.25
6C	HP13G	311.2	1226.0	REAMING	18.50
7CRR	HP13G	311.2	1272.0	REAMING	43.75
8C	GT-CS1	311.2	1274.0	REAMING	26.50
9CRR	GT-CS1	311.2	1385.0	REAMING	12.75
10CRR	GT-CS1	311.2	1392.0	REAMING	13.00
11C	J-4	311.2	1626.0	REAMING	19.25

DAX Consulting Ltd.

CDN FOREST et al NORTH LIARD C31 / C31A 60-40-123-30

BIT RECORD

BIT No.	TYPE	SIZE (mm)	DEPTH OUT (metres)	METRES DRILLED	TOTAL HOURS
12C	F2P	311.2	1748.0	122.0	55.50
13C	HP51H	311.2	1766.0	18.0	13.25
14C	FM2743	311.2	1770.0	4.0	3.75
15C	HP43H	311.2	1773.0	3.0	7.75
16C	FM2627	311.2	1791.0	18.0	25.25
17C	GT – 1	311.2	1819.0	28.0	24.25
18C	ATM 00XP	311.2	1893.0	74.0	71.25
19C	ATM 503	311.2	1967.0	74.0	53.00
20CRR	EHP43H	311.2	2020.0	53.0	61.75
21C	F10TP	311.2	2111.0	91.0	70.00
22C	F10TP	311.2	2197.0	86.0	83.00
23C	FM 2743	311.2	2214.0	17.0	12.75
24C	C1	311.2	2273.0	59.0	36.00
25C	EHP42H	311.2	2273.0	REAMING	11.25
26CRR	EHP42H	311.2	2326.0	53.0	49.75
27C	F2	311.2	2349.0	23.0	24.25
28C	EHP53A	311.2	2387.0	38.0	60.25
29C	EHP53A	311.2	2406.0	19.0	28.25
30C	EHP53A	311.2	2443.0	37.0	46.75

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CDN FOREST et al NORTH LIARD C31 / C31A 60-40-123-30

BIT RECORD

BIT No.	TYPE	SIZE (mm)	DEPTH OUT (metres)	METRES DRILLED	TOTAL HOURS
31C	EHP53A	311.2	2475.0	32.0	48.00
32C	F3	311.2	2517.0	42.0	69.00
33CRR	C3 ALRGSP	311.2	2537.0	20.0	27.75
34C	HP61A	311.2	2566.0	29.0	49.50
35C	ATJ 44XP	311.2	2577.0	11.0	26.00
36C	HP62A	311.2	2607.0	70.0	76.00
37C	HP62A	311.2	2629.5	22.5	43.50
38CRR	HP62A	311.2	2629.5	REAMING	11.50
39D	JD8	215.9	2629.5	DRILL FLOAT	
40D	H530	215.9	2637.0	7.5	13.00
41DRR	H530	215.9	2730.75	93.0	32.00
42D	JD8	215.9	2730.75	REAMING	
43D	JD8	215.9	2730.75	CLEANING	
44D	CSG MILL	215.9	2367.70	4.0	32.00
45D	EHP53A	215.9	2450.00	82.3	11.75
46DRR	JD8	215.9	2450.00	CLEANING	
47D	CSG MILL	215.9	2302.0	4.0	10.00
48D	GT51	215.9	2302.0	CLEANING	
49DRR	CSG MILL	215.9	2303.00	1.0	15.00
50DRR	GT51	215.9	2311.00	8.0	2.75

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CDN FOREST et al NORTH LIARD C31 / C31A 60-40-123-30

BIT RECORD

BIT No.	TYPE	SIZE (mm)	DEPTH OUT (metres)	METRES DRILLED	TOTAL HOURS
51DRR	JD8	215.9	2311.00	CLEANING	
52DRR	GT51	215.9	2330.00	19.0	3.00
53DRR	JD8	215.9	2330.00	CLEANING	
54D	XV	215.9	2362.00	62.0	43.50
55D	MF1P	215.9	2362.0	0.0	0.00
56D	GT18	215.9	2362.0	REAMING	
57D	ETD14	215.9	2400.0	38.0	36.50
58D	GT18	215.9	2436.5	36.5	63.75
59D	GT503	215.9	2505.0	68.5	77.75
60D	GT503	215.9	2586.0	81.0	84.25
61D	GT503	215.9	2655.0	69.0	81.00
62D	GT503	215.9	2689.0	34.0	43.00
63D	GT09	215.9	2725.0	36.0	52.50
64D	ETD14MS	215.9	2791.0	66.0	78.00
65D	EP4876	215.9	2792.0	1.0	1.25
66DRR	EP4976	215.9	2811.0	19.0	33.50
67D	MFIP	215.9	2895.4	84.4	82.00
68D	EDP4876	215.9	2941.5	46.1	67.00

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
12 – 15	100	CEMENT - white with black specks, soft, limy, chalky.
15 – 17.9	100	CEMENT - white with black specks, soft, limy, chalky.
17.9		**TOTAL DEPTH – 914.5 mm / 762.0 mm O.D. UPPER CONDUCTOR HOLE / CASING**
17.9 - 25	40	CEMENT - white with black specks, soft, limy, chalky.
	40	LIMESTONE - light brown to tan color, microcrystalline to cryptocrystalline, medium hard, silty, sandy, dense
	10	SHALE - medium brownish grey, sub-fissile, medium soft to hard, calcareous.
	10	SANDSTONE - medium brownish grey color, clear quartz with trace light colored chert, fine to medium grains, subrounded, moderate sorted, friable to firm, calcareous cement, poor intergranular porosity, no hydrocarbon shows.
25 - 30	20	CEMENT
	30	SHALE - medium dark brownish grey, sub-fissile, medium soft to medium hard, lightly waxy, calcareous, part slightly carbonaceous , trace calcite veining, trace pyrite.
	50	LIMESTONE - light brown to tan, microcrystalline to cryptocrystalline, medium hard to hard, slightly argillaceous, cherty, dense, no visible hydrocarbon shows.
30 - 35	10	CEMENT
	30	SHALE - medium dark brownish grey, sub-fissile, medium soft to medium hard, calcareous, part slightly siliceous.
	60	LIMESTONE - cream to buff and light brown colored, crypto-crystalline, medium hard, slightly blocky trace argillaceous, cherty streaks, trace pellets and fossil fragments, dense, no visible hydrocarbons.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
35 - 40	10	CEMENT
	50	SHALE - medium dark brownish grey colored, sub-fissile, waxy lustre, calcareous, slightly carbonaceous, trace calcite veining, trace marly stringers.
	40	LIMESTONE - light brown to buff, cryptocrystalline to microcrystalline, medium hard, chert stringers, trace argillaceous, dense, rare pyrobitumen, no oil shows.
40 - 45	50	SHALE - dark to occasionally very dark grey colored, medium soft medium hard, waxy lustre, part carbonaceous, calcareous, trace calcite veins, trace pyrite, rare Ostracod.
	50	LIMESTONE - cream to buff and light brown, cryptocrystalline with trace pellets and fossil fragments, medium hard, presence chert streaks, rare pyrobitumen, dense, no oil shows.
45 - 50	80	LIMESTONE - medium brown colored, microcrystalline to very fine crystalline, blocky, hard, argillaceous, presence fossil fragments - pellets, common calcite veins, trace to presence pyrite veins, rare clear quartz prism, trace dark pyrobitumen, trace poor intercrystalline and organic porosity, no fluorescence or cut
	20	SHALE - dark to very dark grey, slightly carbonaceous to carbonaceous.
50 - 60	60	MARLSTONE - medium to medium dark brown colored, very fine crystalline to microcrystalline, blocky, hard, extremely argillaceous, silty, trace bitumen partings, no hydrocarbon shows noted.
	40	LIMESTONE - medium dark brownish grey to greyish brown color, microcrystalline, blocky, hard, very argillaceous, trace pellet ghosts, trace to presence very dark brown pyrobitumen partings, dense, no oil shows.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
60 - 70	80	MARLSTONE - dark brown colored, very fine crystalline, blocky, hard, very argillaceous, very silty, siliceous, trace pellet ghosts, presence white calcite veins, dense to trace fracture porosity, no visible shows.
	10	SHALE - dark grey, sub-fissile to fissile, medium soft to medium hard, calcareous, trace calcite veins.
	10	LIMESTONE - buff to light brown colored, fine to medium sized pellets and fossil fragments, medium hard, rare chert, slightly argillaceous, dense, no shows.
70 - 85	50	LIMESTONE - buff to slightly mottled light and medium brown, pelletal packstone, medium hard to hard, slightly argillaceous, presence fossil fragments, trace calcite veins, rare glauconite, trace to poor organic porosity, no fluorescence, trace very faint ring on cut.
	40	MARLSTONE - dark brownish grey colored, very fine crystalline / grainstone, blocky, hard, very argillaceous, very silaceous, silty, presence calcite veins, rare glauconite, presence dark colored pyrobituminous partings, dense to trace fracture porosity, no oil shows.
	10	SHALE - dark grey, sub-fissile to fissile, medium soft to medium hard, calcareous, trace calcite veins.
85 - 90	60	MARLSTONE - dark grey to brownish grey, very fine crystalline / grained, blocky, hard, very argillaceous, silty, silaceous, trace Brachiopod remains, trace black bitumen partings / veins, trace calcite veins, trace white calcareous specks, dense, no hydrocarbon shows.
	40	LIMESTONE - as above, trace euhedral calcite crystals and over-growths, rare loose clear quartz, trace to poor organic porosity.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
90 - 100	30	SANDSTONE - light brown, quartz with chert and light colored lithic grains, fine to coarse grains, rounded, moderate to poorly sorted, loose in sample, presence potassium feldspar and chert, clay calcareous cement in part, poor intergranular porosity, trace pyrobitumen partings, no hydrocarbon shows.
	30	LIMESTONE - medium light brown colored, wackestone, fine to very fine fossil fragments / clasts, sand grains, cherty streaks, trace to poor intergranular and organic porosity, trace pyrobitumen partings, no visible shows.
	20	SHALE - dark to medium dark grey, sub-fissile to fissile, medium hard to medium soft, calcareous, presence medium brown colored soft bentonitic partings.
	20	MARLSTONE - as above.
100 - 105	60	LIMESTONE - medium light brown, packstone to wackestone, medium hard to hard, abundant medium to fine sized Crinoid ossicles and fossil fragments, trace pyrite veins, trace to poor organic porosity, no oil shows.
	20	MARLSTONE - dark brown grey, very fine crystalline to microcrystalline, common fossil / pellet ghosts, hard, very silty and argillaceous, dense.
	10	MARLSTONE - as above; trace fossil fragments.
	10	SANDSTONE - as above; loosely consolidated, frosted quartz with common arkose type grains, calcareous cement, poor to fair porosity.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
105 - 110	80	SANDSTONE - light brownish grey to reddish grey colored, frosted quartz with 25% - 30% potassium / microcline feldspars and 10% - 15% dark mafic / lithic grains, fine to very coarse grained, well rounded, poorly sorted, loose to unconsolidated in sample, rare clay / calcareous cement, rare to trace mica and chlorite, trace pyrite, rare chert, rare quartz overgrowths, trace faceted quartz, trace pyrobitumen, poor to fair intergranular porosity, no hydrocarbon shows.
	20	LIMESTONE - as above.
110 - 115	100	SANDSTONE - as above; predominantly medium to coarse with fine and very coarse grains in part, granitic composition - 30% arkosic grains, trace limestone stringers.
115 - 125	80	SANDSTONE - medium light speckled reddish grey, 50% frosted quartz with 25% arkose and 25% lithic grains, fine to very coarse grain size, well rounded, medium to high sphericity, poorly sorted, loosely consolidated, trace mica chlorite and pyrite, trace calcareous cement, fair to good? intergranular porosity, no oil shows.
	10	SHALE - medium grey to slightly greenish grey colored, sub-fissile to fissile, medium soft, calcareous.
	10	MARLSTONE - dark grey, very fine crystalline / grained, hard, very argillaceous. silty, dense.
125 - 130	100	SANDSTONE - medium light speckled pinkish grey, 50% clear frosted quartz, 30% feldspar, 20% dark lithic / mafic grains, medium to very coarse grains with granules and small pebbles, rounded to well rounded, poorly sorted, unconsolidated in sample, trace calcareous, trace mica pyrite and chlorite, rare pyrobitumen flakes, good porosity?, no oil shows.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
130 - 135	100	SANDSTONE - as above; trace coarse grain to granule and rare medium pebble Granite, rare Siltstone to very fine Sandstone grains.
135 - 145	90	SANDSTONE - medium light pinkish grey, most medium to coarse with some very coarse grains, presence tan colored rounded chert and Dolostone grains, granitic to sub-granitic composition, good? porosity.
	10	SANDSTONE - light grey salt and pepper, quartzitic, very fine grained, sub-angular to sub-rounded, moderately well sorted, medium hard to firm, calcareous cement, silty, poor intergranular porosity.
145 - 165	100	SANDSTONE - medium light speckled reddish grey, 40 - 50% quartz with 25% - 30% feldspar and 25% - 30% lithic / mafic grains, most medium to coarse grain size with presence up to small size pebble, well rounded, high sphericity, poorly sorted, unconsolidated, trace mica pyrite and chlorite, good? porosity, no visible shows.
165 - 175	100	SANDSTONE - as above; becoming predominantly coarse to very coarse grained, over half arkose / lithic composite Sandstone and carbonaceous composition.
175 - 185	70	SANDSTONE - as above; less quartz - more common lithic chert and Dolostone grains.
	20	LIMESTONE - medium greyish brown, microcrystalline, hard, argillaceous, trace fossil - Crinoid fragments, dense to poor porosity.
	10	SILTSTONE - light grey slightly salt and pepper, quartzitic, sub-angular, sandy, calcareous, glauconitic in part, micaceous in part, poor porosity, no hydrocarbon shows.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
185 - 190	100	SANDSTONE - medium light speckled reddish grey, medium to very coarse granitic grains with granules and small pebbles, common very coarse composite and Dolostone grains, well rounded, poorly sorted, unconsolidated, good? porosity, no visible oil shows.
190		**TOTAL DEPTH – 660.4 mm / 508.0 mm O.D. LOWER CONDUCTOR HOLE / CASING**
190 - 195	100	SANDSTONE - medium light speckled pinkish grey, frosted quartz (60%) feldspar (20%) rock fragments (20%), fine to very coarse grain with occasional granules, well rounded, poorly sorted, good porosity, no shows.
195 - 200	100	SANDSTONE - as above, fine to medium grains, well rounded to rounded, medium to high sphericity, loosely consolidated, rare Ostracod and rounded carbonate grains.
200 - 210	100	SANDSTONE - medium light speckled pinkish grey, predominantly medium to coarse grains with common very coarse grain and granules, well rounded, high sphericity, poorly sorted, unconsolidated in sample, frosted quartz (50%) arkose grains (20%) lithic grains / carbonate grains (20%) granitic grains (10%), trace chlorite pyrite and heavy minerals, trace biotite mica, good porosity, no hydrocarbons.
210 - 220	100	SANDSTONE - as above; sub-arkosic, fine to coarse grains with numerous lithic / argillite / arenite / granitic / carbonate granules and small pebbles, no visible cement, trace pyrite and chlorite, trace to presence biotite mica flakes.
220 - 230	100	SANDSTONE - as above; fine to coarse quartz and feldspar with very coarse to granule and small pebble rounded lithic materials, abundant (40%) buff to tan colored microcrystalline rounded cherty fossiliferous limy Dolostone grains, trace pyrite chlorite heavy minerals and mica, good porosity, no fluorescence or cut.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
230 - 235	100	SANDSTONE - speckled medium grey, sub-arkose - greywacke detritial gravel sand, medium to coarse sand rains with common lithic and tan colored rounded microcrystaiine, hard limy cherty fossiliferous Dolostone granules, well rounded, poorly sorted, unconsolidated, trace mica and pyrite, good porosity, no oil shows.
235 - 245	90	SANDSTONE - rudaceous type 'pea gravel', medium grained sub-arkose sand with abundant granule to small pebble sized, well rounded, high sphericity, unconsolidated, multicolored, multitype, igneous materials, presence heavy minerals mica and pyrite, good intergranular porosity, no fluorescence or cut.
	10	SILTSTONE - dark grey, argillaceous, calcareous, hard, tight.
245 - 255	100	SHALE - dark to very dark grey, blocky to sub-fissile, medium hard, very slightly calcareous, trace micro-micaceous, trace dark brown hard marly partings, some black waxy bituminous partings.
255 - 260	20	LIMESTONE - light to medium brown, wackestone, fine sized fossil fragments, hard, dolomitic, argillaceous, dense to trace porosity.
	70	SHALE - dark to very dark grey as above.
	10	SANDSTONE - medium grey, loose fine to coarse sized quartz feldspar and lithic grains.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
260 - 265	40	LIMESTONE - light brown, fine to medium sized bioclastic wackestone, hard, dolomitic, silty, argillaceous, micritic, silty, trace organic porosity, no shows.
	20	SHALE - dark to very dark grey colored, blocky to sub-fissile, medium hard, very slightly calcareous, trace medium brown hard marly streaks with calcite veining, trace to presence black carbonaceous streaks.
	20	SILTSTONE - dark grey color, hard, very argillaceous, calcareous, micro-micaceous, tight.
	20	SANDSTONE - medium light grey, clear frosted quartz with Feldspar and lithic grains, fine to medium size, rounded, moderately sorted, unconsolidated, good porosity.
265 - 275	80	LIMESTONE - buff to light brown colored, predominantly medium sized bioclastic wackestone / packstone, hard, cherty, trace calcite veining, rare pyrite and glauconite, rare pyrobitumen partings, trace organic porosity, no shows.
	20	SILTSTONE - dark grey, hard, very argillaceous, calcareous, tight.
275 - 280	90	SANDSTONE - medium light speckled pinkish grey, frosted quartz (60%) feldspar (20%) lithic (20%), well rounded, moderate sorting, unconsolidated, rare pyrite mica and chlorite, good porosity, no fluorescence or cut. predominantly fine to medium grained, rare pyrite and mica, good porosity, no oil shows.
	10	LIMESTONE - as above.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
280 - 290	80	SANDSTONE - medium multicolored grey, medium quartz with abundant granule and small pebble of igneous argillite and carbonate makeup, well rounded, poorly sorted, unconsolidated, presence heavy minerals micas and pyrite, good porosity, no hydrocarbon shows.
	20	LIMESTONE - as above; light brown, fine to medium sized bioclasts.
290 - 295	60	SANDSTONE - as above, coarser sized, pea gravel, granules to small and medium lithic pebbles.
	30	MARLSTONE - dark brownish grey, hard, blocky, very argillaceous, silty, cherty, dense.
	10	LIMESTONE - as above.
295 - 300	60	SANDSTONE - medium grey with multicolored rounded loose igneous pebbles and granules, good porosity.
	30	MARLSTONE – dark brown to grey brown, hard, blocky, cherty, argillaceous, silty, siliceous.
	10	LIMESTONE - as above.
300 - 305	90	MARLSTONE - dark grey brown to brown grey, mudstone, hard to very hard, very argillaceous, silty, siliceous, trace calcite veins, trace fracture porosity, no hydrocarbon shows.
	10	LIMESTONE - buff to light brown, fine sized bioclasts, medium hard, slightly argillaceous, dense to trace porosity

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
305 - 310	50	MARLSTONE - as above; dark brownish grey, very argillaceous, silty, hard.
	30	LIMESTONE - light brown to buff, fine to medium bioclastic wackestone, medium hard, silty, becoming argillaceous, trace porosity, no oil shows.
	20	SANDSTONE - loose medium grained well-rounded frosted quartz with rare to trace feldspars and lithics, moderate sorting, unconsolidated, good porosity, no shows.
310 - 315	90	MARLSTONE - dark greyish brown color, mudstone, hard, very argillaceous, silty, siliceous, common increasing to abundant (50%) white colored massive crystalline calcite veins, trace black pyrobitumen partings, rare light to medium brown oil stain, rare faint fluorescence, weak slow greenish yellow milky cut.
	10	LIMESTONE - as above.
315 - 325	100	LIMESTONE - white, massive crystalline calcite, medium sized rhombohedral form crystals, soft, 50% dark grey marlstone laminations, trace fracture porosity, rare pin point intercrystalline porosity.
325 - 335	100	LIMESTONE - as above; 60% white crystalline calcite with dark grey marlstone laminations / interbreeds, trace light brown live oil stain on fracture planes.
335 - 340	90	MARLSTONE - dark to medium dark brown grey, blocky, hard, cherty / siliceous, presence (15%) white crystalline calcite spars, extremely argillaceous, very silty, grading to limy Siltstone.
	10	LIMESTONE - as above.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
340 - 350	80	MARLSTONE - as above; becoming lighter colored, more calcareous in part, common (30%) white sparry calcite.
	10	SANDSTONE - loose fine to medium igneous / granite granules and very coarse grains.
	10	LIMESTONE - buff to light brown, medium to fine bioclasts and crystals, medium hard, part argillaceous, no shows.
350 - 355	70	MARLSTONE - as above; becoming lighter colored, up to 30% white sparry calcite.
	30	LIMESTONE - medium to light brown color, very fine to fine wackestone to mudstone, medium hard to hard, very argillaceous, silty, trace pelletal detritus, micritic cement, part slightly chalky texture, trace calcite, dense to trace porosity, no indications of hydrocarbons.
355 - 360	90	SHALE - very dark grey colored, fissile to sub-fissile, medium hard to medium soft, calcareous to slightly calcareous, trace silty in part, trace micro-micaceous, trace marly streaks.
	10	SILTSTONE - medium dark grey, very argillaceous, calcareous, micro-micaceous, tight.
360 - 370	70	SHALE - as above; part silty to very silty.
	10	SILTSTONE - as above.
	10	LIMESTONE - medium grey brown, very fine crystalline with fossil fragments and pellets, hard to medium hard, silty, argillaceous, dense to trace porosity.
	10	MARLSTONE - as above.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
370 - 385	100	SHALE - very dark grey colored, fissile to sub-fissile, medium hard to medium soft, slightly calcareous to calcareous, part silty, part slightly carbonaceous, trace micro-micaceous, trace pelletal calcareous streaks.
385 - 390	100	SHALE - very dark grey, fissile to sub-fissile, medium hard to medium soft, slightly calcareous, trace black soft bituminous partings, trace glauconitic marly streaks, trace medium grey soft waxy bentonitic streaks.
390 - 395	60	SHALE - dark grey, fissile to sub-fissile, platy, medium hard.
	40	MARLSTONE - medium dark brownish grey colored, sub-fissile habit, very fine grain texture in part, medium hard, very argillaceous, silty, slightly micro-micaceous, trace very fine pyrite crystals, dense.
395 - 405	80	MARLSTONE - medium dark brownish grey, blocky, hard, very argillaceous, silty, trace fossiliferous, dense.
	20	SHALE - dark grey, fissile to sub-fissile, medium hard, slightly calcareous, very slightly micro-micaceous, rare pyrite, trace soft black slightly carbonaceous partings
405 - 415	70	SHALE - medium dark grey, fissile to sub-fissile, medium hard, slightly calcareous, very slightly micro-micaceous, trace black partings, trace calcite veins, minor Marlstone.
	30	MARLSTONE - as above.
415 - 430	100	SHALE - dark grey, fissile to sub-fissile, platy, slightly waxy lustre, slightly calcareous, trace very dark grey bituminous partings, trace calcite veins, rare pyrite.
430 - 440	100	SHALE - as above; common black trace carbonaceous partings.
440 - 445	100	MARLSTONE - medium dark brown, blocky, hard, very silty, very argillaceous, trace fossil fragments, trace very fine disseminated pyrite crystals, dense.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
445- 450	80	SHALE - medium dark grey, sub-fissile to slightly blocky habit, medium hard, part silty, slightly calcareous, trace calcite veins, trace marly partings, rare black streaks.
	20	MARLSTONE - medium dark brown, silty, hard.
450 - 460	90	SHALE - medium dark grey sub-fissile, medium hard, slightly micro-micaceous, presence very dark grey to black soft waxy bituminous partings.
	10	MARLSTONE - medium dark brown colored, blocky to sub-fissile, hard, very silty, argillaceous, trace fossil fragments, trace very fine pyrite, dense.
460 - 470	100	SHALE - medium dark grey, sub-fissile to fissile, medium hard, very slightly calcareous, trace pyrite, common (20%) tan colored brittle bentonitic partings.
470 - 475	100	SHALE - medium dark grey to slightly greenish grey colored, fissile to sub-fissile, medium hard to medium soft, platy, very slightly calcareous, slightly micro-micaceous, presence very dark grey to black bituminous streaks.
475 - 480	100	SHALE - as above; more sub-fissile to blocky type habit, presence fine pyrite crystal veins, some marly partings.
480 - 485	80	SHALE - as above, becoming more blocky, harder, silty to very silty.
	20	MARLSTONE - dark grey, blocky, hard, very argillaceous, silty, parts pyritic, trace fossil fragments, dense.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
485 - 495	50	SHALE - becoming sub-fissile to blocky, medium hard to hard, silty, trace pyrite crystals, trace bitumen streaks.
	30	LIMESTONE - light grey colored, very fine crystalline, blocky, medium hard to hard, silty, argillaceous, trace fossil fragments, presence white micritic chalky partings, dense, no fluorescence or cut noted.
	20	MARLSTONE - dark grey, blocky, hard, very argillaceous, silty, parts pyritic, trace fossil fragments, dense.
495 - 500	90	SHALE - dark to medium dark grey, sub-fissile to blocky, medium hard to hard, silty, calcareous, trace pyrite veins.
	10	LIMESTONE - light grey, very fine crystalline wackestone to grainstone, hard, silty, argillaceous, some fossil fragments, presence light colored chalky streaks, dense, no hydrocarbon shows.
500 - 510	100	SHALE - dark grey, sub-fissile, medium hard, calcareous, slightly micro-micaceous, trace calcareous partings, trace medium to light brown marly partings.
510 - 520	100	SHALE - dark grey to slightly brownish grey, sub-fissile to fissile, medium hard, calcareous, trace dark colored waxy bituminous partings.
520 - 530	90	SHALE - dark grey, sub-fissile, medium hard, calcareous, silty in part, trace calcite veins.
	10	MARLSTONE - dark grey colored, grainstone texture in part, blocky, hard, very silty, argillaceous, trace calcite veins, dense.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
530 - 555	70	SHALE - dark grey to slightly brownish grey, sub-fissile to part blocky, medium hard, slightly micro-micaceous, trace light brown bentonitic partings, presence soft dark waxy streaks.
	20	SILTSTONE - dark grey, very argillaceous, calcareous to very calcareous, hard, micro-micaceous, tight.
	10	MARLSTONE - dark grey, blocky, hard, part grainy texture, very silty, argillaceous, trace micro-micaceous, dense
555 - 560	65	SHALE - dark grey colored, sub-fissile, medium hard, calcareous, trace calcite veins, rare Ostracod, rare to trace dark soft waxy streaks.
	20	MARLSTONE - dark grey, grainstone texture, blocky, hard, very argillaceous, trace micro-micaceous, very silty grading to limy Siltstone.
	15	SILTSTONE - as above.
560 - 580	80	SHALE - dark grey, sub-fissile, medium hard, presence dark colored soft bituminous waxy partings.
	20	MARLSTONE - medium dark to dark brownish grey, part grainy, hard, argillaceous, very silty.
580 - 590	70	SHALE - as above; presence very fine pyrite cube clusters
	10	LIMESTONE - medium brownish grey, very fine grainstone, medium hard, argillaceous, trace fossil fragments, dense to trace porosity, no shows.
	10	SILTSTONE - medium to medium dark brownish grey colored, sub-rounded, medium hard, silica cement, very argillaceous, very slightly calcareous, trace very finely disseminated pyrite crystals, tight.
	10	MARLSTONE – as above.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
590 - 610	60	SHALE - dark grey, sub-fissile, medium hard, very slightly calcareous, trace darker colored soft bituminous partings, trace medium brown marly partings.
	40	SILTSTONE - medium dark brownish grey, quartzitic, sub-rounded, medium hard, silica cement, very argillaceous, very slightly calcareous, trace very fine pyrite crystals, tight.
610 - 620	90	SHALE - dark grey colored, sub-fissile to fissile, medium hard, non-calcareous, rarely silty, parts slightly bituminous, trace medium brown colored bentonitic partings.
	10	SILTSTONE - as above.
620 - 645	100	SHALE - dark grey to slightly greenish grey, fissile to sub-fissile, medium hard to medium soft, trace calcite veins, presence medium brown bentonitic partings, presence very dark colored soft waxy bituminous partings.
645 - 655	100	SHALE - dark grey, fissile, platy, splintery, medium hard to medium soft, presence medium brown colored silty streaks with white calcareous specks, presence very dark grey colored soft waxy bituminous partings, rare pyrite crystals.
655 - 660	100	SHALE - as above; presence medium brown marly streaks.
660 - 665	100	SHALE - dark grey to slightly greenish grey, fissile, platy, splintery, medium hard to medium soft, non-calcareous, presence very dark grey colored soft waxy bituminous partings.
665 - 680	90	SHALE - as above, trace pyrite crystals.
	10	SILTSTONE - dark brownish grey, quartzitic, hard, calcareous silica cement, hard, very argillaceous, trace pyritic, tight.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
680 - 685	100	SANDSTONE - light brown colored, quartzose, very fine grained, sub-round to sub-angular, moderately well sorted, hard, silica cement, slightly calcareous, very silty, rare glauconite, trace pyrite, tight to trace intergranular porosity, no hydrocarbon shows noted.
685 - 695	90	SHALE - dark grey, fissile, platy, splintery, medium hard to medium soft, non-calcareous, trace calcite veins.
	10	SANDSTONE - as above; very fine grained, hard, silty, trace porosity, no shows.
695 - 700	100	SHALE - dark grey to slightly greenish grey colored, fissile, platy, medium hard to medium soft, non-calcareous, slightly waxy type lustre, trace medium brown bentonitic streaks, trace very dark colored slightly bituminous streaks, trace very fine to fine pyrite crystals.
700 – 710.3	100	SHALE - as above; less greenish colored, more common darker colored slightly bituminous partings.
710.3		**TOTAL DEPTH – 444.5 mm / 339.7 mm O.D. SURFACE HOLE / CASING**
710.3 - 720	80	SHALE - dark grey, fissile, platy, medium hard to medium soft, common very dark grey soft slightly bituminous partings.
	20	CEMENT
720 - 730	100	SHALE - dark grey, fissile, platy, medium hard to medium soft.
730 - 740	100	SHALE - medium dark grey to slightly greenish grey colored, fissile, platy, medium hard to medium soft, non-calcareous, rarely silty, trace darker colored slightly waxy pyritic very slightly bituminous partings.
740 - 750	100	SHALE - medium dark greenish grey, fissile, platy, slightly flaky, slightly waxy, non-calcareous, rare pyrite, trace calcite veins.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
750 - 770	100	SHALE - as above; presence dark brownish greenish grey colored soft waxy partings.
770 - 780	100	SHALE - medium to medium dark brownish and greenish grey colored, fissile, platy, medium hard, slightly silty, slightly calcareous to calcareous, micro-micaceous, rare pyrite, rare calcite veins.
780 - 785	80	SHALE - medium to medium dark brownish greenish grey, fissile, platy, medium hard, slightly silty, slightly calcareous to calcareous, micro-micaceous, rare pyrite, rare calcite.
	20	MARLSTONE - medium to medium dark brownish grey, hard, very argillaceous, calcareous to slightly calcareous, trace pellets.
785 - 790	30	SILTSTONE - medium brownish grey colored, quartzitic, hard, slightly calcareous clay cement, argillaceous, tight.
	70	SHALE - as above.
790 - 815	10	MARLSTONE - medium to medium dark brownish grey, medium hard, very argillaceous, calcareous to slightly calcareous, trace fossil / pellets.
	90	SHALE - medium to medium dark greenish grey colored, fissile, platy, medium hard, silty, calcareous, micro-micaceous, rare dark colored very slightly bituminous streaks.
815 - 820	90	SHALE - as above.
	10	SILTSTONE - medium brownish grey colored, quartzitic, hard, slightly calcareous clay cement, argillaceous, tight.

DAX Consulting Ltd.

CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
820 - 830	90	SHALE - medium to medium dark greenish grey, fissile, platy, medium hard to medium soft, slightly waxy lustre, very slightly calcareous, trace calcite veins, rare to trace pyrite veins.
	10	SILTSTONE - medium brownish grey colored, quartzitic, hard, slightly calcareous clay cement, argillaceous, tight.
830 - 835	100	SHALE - medium to medium dark greenish grey, fissile, platy, medium hard to medium soft, slightly waxy lustre, very slightly calcareous, trace calcite veins, rare to trace pyrite veins.
835 - 840	100	SHALE - as above; trace darker colored soft waxy partings.
840 - 850	100	SHALE - medium greenish grey, fissile, platy, slightly waxy lustre, medium hard to medium soft, very slightly to slightly calcareous, very slightly micro-micaceous, rare calcite veins, trace dark colored waxy partings, rare medium brown bentonitic clay.
850 - 860	100	SHALE - medium dark brownish greenish grey, platy, slightly waxy, slightly to very slightly calcareous, trace waxy streaks and calcite veins, trace calcite filled microfractures.
860 - 875	100	SHALE - as above; common medium dark to dark olive grey colored slightly waxy to waxy flaky partings, trace to presence bentonitic clay partings.
875 - 895	70	SHALE - medium to medium dark brownish grey colored, fissile, platy, slightly silty, slightly calcareous, very slightly micromicaceous, trace calcite veins.
	30	MARLSTONE - medium brownish grey, very fine crystalline, hard, very argillaceous, silty, presence very fine pyrite.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
895 - 905	50	SHALE - as above; slightly calcareous to calcareous, silty to slightly silty, slightly micro-micaceous.
	40	MARLSTONE - medium brownish grey, pelletal mudstone, hard, very argillaceous, silty, presence very fine pyrite.
	10	SILTSTONE - medium brownish grey, hard, sandy, clay / calcareous cement, very argillaceous, tight.
905 - 915	80	SHALE - medium to medium dark brownish greenish grey, fissile, slightly calcareous, slightly silty, rare calcareous streaks of medium brown wackestone.
	20	MARLSTONE - medium to medium dark brownish grey, blocky habit, hard, argillaceous, silty, trace pellet ghost structures.
915 - 935	100	SHALE - medium to medium dark greenish grey colored, fissile, platy, slightly flaky, slightly waxy, medium hard to medium soft, very slightly calcareous, trace Ostracod remains, rare to trace white calcite veins.
935 - 945	100	SHALE - as above; greenish to brownish grey colored.
945 - 950	10	SILTSTONE: medium brownish grey, slightly salt and pepper, quartzitic, hard, very argillaceous, calcareous clay cement, tight.
	90	SHALE - as above, presence medium to dark colored soft waxy flaky partings
950 - 960	100	SHALE - medium dark greenish grey colored, fissile, platy, medium hard to medium soft, very slightly calcareous, trace calcite veins.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
960 - 975	90	SHALE - medium grey to slightly greenish brownish grey, fissile, platy, very slightly calcareous, rare calcite veins, rare marly laminations.
	10	MARLSTONE - medium brownish grey, sub-fissile to blocky, medium hard to hard, calcareous, silty, very argillaceous, common pellet and fossil fragments, dense.
975 - 985	100	SHALE - medium grey to slightly greenish brownish grey, platy, very slightly calcareous, rare marly laminations
985 - 995	100	SHALE- as above; becoming slightly calcareous, trace clear white calcite veins, trace fossil remains.
995 - 1005	10	MARLSTONE - medium brownish grey, medium hard, very argillaceous, silty, trace very fine pyrite, trace pellets.
	90	SHALE - medium dark greenish brownish grey, fissile, platy, very slightly calcareous, very slightly micro-micaceous, trace darker colored waxy partings, rare light colored bentonitic clay partings.
1005 - 1015	70	SHALE - as above; part becoming slightly silty to silty.
	30	MARLSTONE - medium brownish grey colored, sub-fissile to blocky habit, medium hard to hard, calcareous to slightly calcareous, very argillaceous, silty, trace very fine disseminated pyrite, presence fine sized pellet ghosts, trace calcite veins.
1015 - 1020	80	SHALE - as above, medium dark greenish brownish grey, part marly, trace fossil remains.
	20	MARLSTONE - as above; very argillaceous, silty.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1020 - 1030	100	SHALE - medium to medium dark greenish brownish grey colored, fissile to sub-fissile, medium hard to medium soft, very slightly calcareous, slightly silty in part, very slightly micro-micaceous, rare pyrite, trace fossil fragments / pellets, trace marly partings, rare calcite veining.
1030 - 1040	90	SHALE - as above.
	10	MARLSTONE - medium to medium dark brownish grey, sub-fissile to blocky habit, medium hard to hard, very argillaceous, silty, trace very fine pyrite, trace pyrite veining.
1040 - 1050	100	SHALE - medium dark grey to slightly brownish grey colored, fissile to sub-fissile, medium hard, very slightly calcareous, slightly micro-micaceous, common pellet ghosts, trace marly partings.
1050 - 1055	90	SHALE - as above.
	10	LIMESTONE - medium brown, wackestone, hard, fossiliferous / pelletal, very argillaceous, dense
1055 - 1065	100	SHALE - medium dark grey to brownish grey colored, fissile to sub-fissile, medium hard, slightly calcareous, very slightly micromicaceous, trace very fine pyrite, trace pellet / fossils, some darker colored soft waxy streaks, trace marly laminations.
1065 - 1070	10	MARLSTONE - medium brownish grey, very fine crystalline to mudstone, medium hard to hard, very argillaceous, silty, fossiliferous / pelletal, rare intrafossil porosity.
	90	SHALE - medium dark brownish grey, fissile, trace (5%) clear white crystalline calcite, trace drusy calcite crystals, trace slickensides, trace fracture porosity, rare dead oil stain, no fluorescence or cut.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1070 - 1085	100	SHALE - medium dark grey to slightly brownish grey, fissile, slightly waxy, medium hard, slightly calcareous, trace calcite filled microfractures, some marly streaks, trace darker colored flaky waxy partings, rare pyrite.
1085 - 1090	90	SHALE - medium dark slightly brownish grey, sub-fissile to slightly blocky habit, medium hard to hard, slightly calcareous / marly, trace calcite veins.
	10	MARLSTONE - medium brownish grey, blocky, hard, very argillaceous, silty, trace calcite veins, trace fossils.
1090 - 1095	100	SHALE - becoming medium dark grey, fissile, platy, medium hard, slightly calcareous, rare pyrite and calcite veins.
1095 - 1100	90	SHALE - medium dark grey, fissile, medium hard, slightly calcareous, very slightly micro-micaceous, rare to trace calcite veins, trace marly interlaminae.
	10	MARLSTONE - medium dark brownish grey, sub-fissile to blocky habit, hard, very argillaceous, slightly silty, trace micro-micaceous, trace calcite veins, pellet remains.
1100 - 1105	100	SHALE - as above; slightly more sub-fissile habit, slightly harder, trace clay ironstone nodules, some darker colored soft waxy partings.
1105 - 1120	100	SHALE - as above, becoming more fissile, slightly softer, trace (10%) white crystalline and chalky calcite vein material with pyrobitumen staining.
1120 - 1125	90	SHALE - medium dark grey, fissile, medium hard, slightly calcareous, trace micro-micaceous, rare to trace calcite veins, trace marly streaks.
	10	MARLSTONE - medium dark brownish grey, very fine crystalline, sub-fissile to blocky, hard, silty to very silty, very argillaceous, slightly micro-micaceous, rare pyrite, trace calcite veins, grading to marly Siltstone.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1125 - 1140	40	SILTSTONE - medium dark brownish grey colored, quartzitic, hard, very argillaceous, calcareous clay cement, trace very fine pyrite crystals, tight.
	40	SHALE - medium dark grey to brownish grey, fissile to sub-fissile, medium hard, non-calcareous, common darker colored, flaky soft slightly waxy interbeds, rare medium brown bentonitic clay partings, trace medium grey splintery brittle interbeds.
	20	MARLSTONE - medium dark brownish grey to greyish brown, sub-fissile to blocky, hard, silty to very silty, very argillaceous, trace calcite, rare pyrite, trace intercrystalline porosity.
1140 - 1150	40	MARLSTONE - medium dark brownish grey, blocky to sub-fissile, hard, very argillaceous, silty to very silty, trace very fine pyrite, trace calcite veining, presence fossil and pellet remains.
	40	SHALE - as above.
	20	SILTSTONE - medium brownish grey, quartzitic, hard, calcareous, very argillaceous, trace micro-micaceous, tight.
1150 - 1160	40	MARLSTONE - medium dark brown grey color, blocky to sub-fissile, hard, very argillaceous, silty to very silty, trace very fine pyrite, trace calcite veins, presence pellets / fossils.
	30	SHALE - medium brownish grey colored, fissile, splintery, brittle, medium hard, non-calcareous, very slightly micro-micaceous, part silty.
	30	SILTSTONE - medium grey, quartzitic, hard, calcareous, very argillaceous, tight.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1160 - 1170	50	SHALE - medium dark brown grey and green grey colored, fissile, platy, splintery, medium hard, part calcareous, slightly calcareous, trace very fine pyrite, trace calcite veins, rare pyrite blebs.
	40	MARLSTONE - medium dark grey, sub-fissile to blocky, hard, calcareous to slightly calcareous, silty to slightly silty, very argillaceous, trace very fine pyrite crystals, trace calcite veins, trace darker slightly bituminous partings, trace fossil structures / pellets.
	10	SILTSTONE - medium brownish grey, quartzitic, hard, calcareous clay cement, argillaceous, trace pyritic, tight.
1170 - 1185	70	SHALE - medium dark grey, sub-fissile to fissile, slightly calcareous, part silty, trace micro-micaceous, grading to Marlstone, trace greenish grey splintery interbeds.
	30	MARLSTONE - as above.
1185 - 1190	70	SHALE - medium dark grey to brownish grey, fissile to sub-fissile, medium hard, slightly silty, slightly calcareous, slightly micro-micaceous, trace to presence very fine pyrite crystals, trace calcite veins.
	30	MARLSTONE - as above; presence calcite veining.
1190 - 1195	70	SHALE- medium dark grey to slightly brownish grey, fissile, platy, slightly waxy luster, slightly calcareous, slightly silty, trace calcite veining.
	20	MARLSTONE - as above, trace calcite veining with drusy crystallization and trace fracture porosity.
	10	SILTSTONE - medium brownish grey, quartzitic, hard, calcareous clay cement, argillaceous, trace pyritic, tight.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1195 - 1205	50	MARLSTONE - medium dark grey, sub-fissile to blocky, hard, calcareous to slightly calcareous, silty to slightly silty, very argillaceous, trace very fine pyrite crystals, trace calcite veins, trace darker slightly bituminous partings, trace fossil structures / pellets.
	50	SHALE - as above; part silty and marly, part with waxy streaks.
1205 - 1225	50	SHALE - as above - part silty and very marly.
	30	SILTSTONE - medium brownish grey, quartzitic, hard, calcareous clay cement, argillaceous, trace very fine pyrite crystals, tight.
	20	MARLSTONE - medium dark brown grey color, blocky to sub-fissile, hard, very argillaceous, silty to very silty, trace very fine pyrite, trace calcite veins, presence pellets / fossils.
1225 - 1240	60	SHALE - medium to medium dark brownish grey, fissile, platy, medium hard, slightly waxy lustre, part silty, calcareous, trace very fine pyrite crystals, trace calcite veins, trace medium green grey splintery laminations.
	40	MARLSTONE - as above.
1240 - 1250	60	SHALE - as above.
	40	MARLSTONE - medium dark grey to brownish grey, sub-fissile to blocky, hard, calcareous, silty to slightly silty, very argillaceous, trace very fine pyrite crystals, trace calcite veins, trace darker slightly bituminous partings, trace fossil structures / pellets.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1250 - 1260	50	SHALE - as above; trace silty to very silty.
	40	MARLSTONE - as above; grading to very calcareous silty Shale.
	10	SILTSTONE - medium brownish grey, quartzitic, hard, calcareous cement, argillaceous, trace very fine pyrite crystals, tight.
1260 - 1275	70	SHALE - medium dark to dark grey to brownish grey, fissile to sub-fissile, medium hard, calcareous to slightly calcareous, slightly silty to silty, trace pyrite veins, trace medium green grey splintery partings.
	30	MARLSTONE - as above; silty to slightly silty.
1275 - 1285	80	SHALE - as above; trace silty to very silty, calcareous.
	20	MARLSTONE - medium dark brownish grey to greyish brown, sub-fissile to blocky, hard, calcareous, silty to slightly silty, very argillaceous, trace very fine pyrite crystals, trace calcite veins, trace darker slightly bituminous partings, trace fossil structures / pellets.
1285 - 1290	90	SHALE - dark grey to brownish grey colored, fissile to sub-fissile, medium hard, calcareous, part silty, part with waxy streaks, rare slickensides, rare medium green grey splintery streaks.
	10	MARLSTONE - as above; very silty, very argillaceous, common pellets / fossil fragments.
1290 - 1300	80	SHALE - dark brownish grey, fissile to sub-fissile, medium hard, slightly waxy lustre, slightly silty, calcareous, trace very fine pyrite, trace calcite / dolomite filled micro- fractures.
	20	MARLSTONE - medium dark brown grey to grey brown, blocky mudstone, hard, part silty, very argillaceous, presence very fine pyrite, presence fossil / pellet remains

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1300 - 1305	90	SHALE - as above medium to dark brownish grey, calcareous, silty.
	10	MARLSTONE - as above; silty to very silty, very argillaceous.
1305 - 1310	80	SHALE - as above.
	20	MARLSTONE - medium dark brown grey to grey brown, mudstone to very fine grainstone, hard, silty, argillaceous, trace calcite veins, pelletal
	Trace	SANDSTONE - medium brown, quartzitic, very fine grained, sub-rounded, medium hard, silica cement, silty, argillaceous, trace porosity.
1310 - 1315	90	SHALE - medium dark brown grey to grey brown, fissile to sub-fissile, very slightly waxy, medium hard, calcareous to slightly calcareous, very slightly micro-micaceous, rare pyrite veins.
	10	MARLSTONE - as above.
1315 - 1320	90	SHALE - black to very dark brownish grey colored, fissile, platy, very bituminous / organic, medium soft to medium hard, very slightly calcareous, rare small scale slickensides, rare light grey soft clay partings, rare calcite veins / crystals.
	10	MARLSTONE - as above.
1320 - 1335	100	SHALE - as above, black, very bituminous, becoming slightly silty to silty, trace pyrite nodules, rare light grey colored marlstone
1335 - 1350	100	SHALE - dark to very dark grey, fissile, platy, bituminous, medium hard to hard, silty, micro-micaceous, trace calcite veins, trace pyrite, presence black very bituminous streaks.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1350 - 1355	90	SHALE - as above; silty to very silty, trace marly, rare marcasite crystals.
	10	SILTSTONE - dark grey, slightly salt and pepper, quartzitic, hard, argillaceous, bituminous clay cement, very slightly calcareous, tight.
1355 - 1365	50	SHALE - as above; trace medium to light grey bentonitic shale.
	30	MARLSTONE - medium brownish grey colored, mudstone, blocky, hard, very argillaceous, trace pyritic, trace calcite veins.
	20	SILTSTONE - as above.
1365 - 1375	80	SHALE - very dark grey colored, platy, radioactive organic carbonaceous / bituminous components, black very bituminous streaks, trace light grey bentonite clay partings.
	10	MARLSTONE - as above.
	10	SILTSTONE - as above.
1375 - 1385	90	SHALE - as above; some very dark grey to black streaks.
	10	SILTSTONE - dark grey, quartzitic, bituminous, hard, tight
1385 - 1390	100	SHALE - brownish grey colored, fissile, platy, medium hard, radioactive organic constituents, black very bituminous streaks, trace calcite veins, trace pyrite, trace light grey bentonitic clay .
1390 - 1400	80	SHALE - grey to brownish grey, fissile, platy, bituminous, slightly silty to silty, micro-micaceous, trace pyrite, trace calcite veins, trace bentonite.
	20	SILTSTONE - dark to very dark grey, slightly salt and pepper, quartzitic, hard, bituminous clay cement, trace sandy, medium hard to hard, micro-micaceous, pyritic, tight.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1400 - 1410	80	SHALE - as above; very dark brown grey to grey, silty to slightly silty, part very bituminous.
	20	SILTSTONE - dark to very dark grey, quartzitic, hard, trace sandy, argillaceous, micro-micaceous.
1410 - 1415	100	SHALE - as above; very dark grey to brownish grey, fissile, organic material, silty, trace bentonitic partings, trace Siltstone laminations.
1415 - 1425	100	SHALE - very dark brownish grey to grey, fissile, platy, medium hard, slightly silty to silty, trace pyrite blebs, trace silty interbeds, trace marcasite crystals.
1425 - 1435	100	SHALE - as above; very dark brown grey, platy, radioactive organic bituminous constituents, slightly silty, micro-micaceous, trace pyritic, trace calcite veins, trace light grey bentonitic clay partings.
1435 - 1440	100	SHALE - as above; part slightly silty.
1440 - 1450	90	SHALE - very dark brownish grey to grey, fissile, platy, medium hard, slightly silty to silty, trace pyrite blebs, trace silty interbeds, trace pyrite veins.
	10	SILTSTONE - dark to very dark grey, quartzitic, hard, sandy, very argillaceous, micro-micaceous.
1450 - 1460	100	SHALE - very dark brownish grey to black, fissile to sub-fissile, very organic and bituminous, medium hard to medium soft, slightly silty, slightly micro-micaceous, rare pyrite, trace marly partings, trace light colored bentonitic partings, minor Siltstone interlaminae.
1460 - 1465	100	SHALE - very dark brownish grey, fissile to sub-fissile, silty, micro-micaceous, trace pyrite, presence light to medium brown and grey colored marly and bentonitic laminations.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1465 - 1470	100	SHALE - very dark brownish grey to black, fissile, platy, organic / carbonaceous - bituminous, medium hard to medium soft, slightly silty, very slightly calcareous, micro-micaceous, trace pyrite veins, trace pale grey colored bentonitic clay partings.
1470 – 1480	100	SHALE – predominantly black to dark grey, minor medium brownish grey, sub-fissile, micromicaceous, common carbonaceous to petroliferous, minor silty to thin Siltstone laminae, slightly bentonitic in small part, minor fossil debris, rare disseminated to nodular pyrite, trace sparry calcite fossil fragments to microfacture fill, moderately indurated.
1480 – 1510	100	SHALE – black to dark grey as above, sub-fissile to fissile, slightly earthy to minor waxy, very carbonaceous to common organic material, minor silty, micromicaceous to occasional mica, slight increase in pyrite crystals, occasional slickensides, increase quartz and calcite healed microfractures to rare microbreccia.
1510 – 1530	100	SHALE – generally black, fissile to platy, frequently carbonaceous to bituminous, possibly phosphatic, slightly micromicaceous, minor silty, rare fossil remains, decrease to trace slickensides and microfractures, moderately indurated to slightly brittle.
1530 – 1540	100	SHALE – mainly black as above, occasionally dark grey to minor medium brown, fissile to blocky, abundant organic content, locally silty, occasional dolomitic to sideritic with minor Ironstone concretions, slightly bentonitic in part, rare pyrite nodules, moderately to well indurated.
1540 – 1545		NO SAMPLE (working drill string – encountered tight hole conditions)

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1545 – 1560	100	SHALE – black to occasionally dark grey as above, sub-fissile to tabular, very fine texture to minor earthy, common carbonaceous to slightly petroliferous, possible phosphatic, slightly micromicaceous, minor silty, sparsely fossiliferous, trace disseminated pyrite, moderately indurated.
1560 – 1575	100	SHALE – black to dark grey as above, blocky to sub-fissile, minor flaky, high organic content, micromicaceous, slightly bentonitic, minor siderite and hematite concretions, scattered fossil detritus, trace slickensides, moderately indurated to locally soft.
1575 – 1590	100	SHALE – predominantly black, occasional dark grey, slightly earthy, blocky to platy, micromicaceous, frequently carbonaceous to bituminous, locally silty, occasional bentonitic, indistinct cleavage, minor pyrite nodules, trace calcite filled microfractures, moderately indurated to soft.
1590 – 1605	100	SHALE – black to occasionally dark grey as above, sub-fissile to tabular, very fine texture to minor earthy, common carbonaceous to slightly petroliferous, possible phosphatic, slightly micromicaceous, minor silty, sparsely fossiliferous, trace disseminated pyrite, moderately indurated.
1605 – 1620	90	SHALE – black to dark grey to occasional medium grey, blocky to sub-fissile, generally very carbonaceous, bentonitic in small part, locally silty, numerous slickensides, occasional sparry calcite and quartz lined microfractures, minor fossil debris, moderately indurated.
	10	SILTSTONE – stringers, medium to dark grey to brownish, firm, quartzose to dolomitic to sideritic, common argillaceous, minor arenaceous to loose floating very fine to fine grain subrounded quartz grains, trace disseminated pyrite.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1620 – 1625	100	SHALE – black to dark and medium grey as above, common subvitreous to waxy, black, very carbonaceous, micaceous slickensides, frequent calcite and quartz healed micro to small fractures, occasional pyritic, moderately to well indurated.
1625 – 1650	90	SHALE – medium to dark grey to black, blocky to sub-fissile, slightly to very carbonaceous, minor bentonitic, locally silty, calcareous in part, scattered fossil debris, moderately indurated.
	10	SILTSTONE – light to dark grey to occasionally brownish, quartzose to dolomitic to minor calcareous, occasional very fine grain arenaceous, common argillaceous, minor pyrite nodules.
1650 – 1665	80	SHALE – black to medium grey as above, blocky, poor cleavage development, common organic rich, increasingly silty, part bentonitic, occasionally calcareous to numerous white calcite fossil remains (radiolarian), micromicaceous, rare calcite healed microfractures, moderately indurated to soft.
	20	SILTSTONE – medium to dark grey, generally very argillaceous, occasionally carbonaceous, dolomite to silica cement, occasionally calcareous to rare sideritic, locally grading to very fine grain Sandstone stringers, trace pyrite.
1665 – 1685	100	SHALE – dark grey to black, slightly earthy, blocky, carbonaceous, slightly to very calcareous to marl in part, common calcareous fossil fragments, occasional drusy calcite and quartz filled small scale fractures, soft to moderately indurated.
1685 – 1700	100	SHALE – black to dark grey, blocky, indistinct cleavage, high organic content, micro-micaceous, calcareous in part, minor bentonitic, locally silty to very fine grain arenaceous, decrease to sparse fossil debris, rare microfacture and slickensides, moderately indurated.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1700 – 1715	100	SHALE – black to dark grey as above, blocky to sub-fissile, frequently carbonaceous, micro-micaceous, locally calcareous, slightly bentonitic, occasionally silty, rare fossil remains, minor very fine disseminated pyrite to rare nodule, moderately indurated.
1715 – 1730	100	SHALE – black to dark to occasionally medium grey, blocky, poor cleavage development, common organic rich, increasingly silty, slightly to very calcareous to numerous white calcite fossil remains, micromicaceous, rare calcite healed microfractures, moderately indurated to soft.
1730 – 1745	100	SHALE – black to dark and medium grey, blocky to minor flaky, micro-micaceous, generally carbonaceous, part calcareous grading to marl, locally silty, slightly bentonitic, scattered fossil debris, trace pyrite, moderately indurated to soft.
1745 – 1760	100	SHALE – black to dark to slight increase medium grey, blocky to occasionally sub-fissile, micro-micaceous, carbonaceous in part, increasingly bentonitic, variably calcareous to dolomitic, minor silty, occasionally fossiliferous, minor pyrite nodules, moderately indurated to increasingly soft.
1760 – 1770	100	SHALE – medium to dark to occasionally light grey, part black, blocky to sub-fissile, occasional distinct cleavage, common bentonitic to Claystone, calcareous to dolomitic, locally carbonaceous, silty in part, scattered pyrite nodules, moderately indurated to soft.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1770 – 1775	80	SHALE – dark to occasionally light slightly greenish grey, rare black carbonaceous streaks, blocky to sub-fissile, parts with waxy texture, medium soft to medium hard, slightly silty in part, part bentonitic, slightly calcareous, locally carbonaceous, presence very fine pyrite crystals, abundant lost circulation material containing mica / sawdust / walnut shells in sample.
	20	SANDSTONE – frosted white colored quartz with presence (20-25%) pink to red colored potassium feldspar, predominantly fine with common medium and rare coarse sized grains, moderately well sorted, unconsolidated in sample, good (?) intergranular porosity
1775 – 1780	85	SHALE – dark grey with occasional medium light slightly greenish grey laminations, sub-fissile to blocky, bentonitic with slightly waxy lustre, medium hard to medium soft, part slightly carbonaceous, some slightly calcareous silty streaks, trace to presence very fine disseminated pyrite crystals, trace carbonaceous partings, rare woody plant remains.
	15	SANDSTONE – unconsolidated frosted white quartz with pink potassium feldspar, predominantly fine with presence medium and rare coarse sized grains, moderately well sorted, good (?) intergranular porosity.
1780 – 1785	80	SHALE – medium dark slightly brownish greenish grey colored with frequent light to medium greenish grey colored interbeds, sub-fissile, medium soft to medium hard, slightly waxy luster, parts slightly silty, very slightly calcareous, trace very fine pyrite, trace to presence dark colored earthy carbonaceous partings trace scattered fossil fragments / calcispheres.
	20	SANDSTONE - as above loose fine to medium quartz with k-spar grains.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1785 – 1790	50	SHALE – medium to medium dark grey to greenish grey with common light greenish grey interbeds, sub-fissile, medium hard to medium soft, slightly waxy luster, presence dark carbonaceous streaks, common LCM.
	50	SANDSTONE – clear white frosted quartz with presence (20%) pink colored potassium feldspar, sub rounded, fine with scattered medium and rare coarse sized grains, moderately well sorted, unconsolidated in sample, good intergranular porosity (?), no hydrocarbon shows noted.
1790 – 1795	75	SHALE – medium to medium dark grey to slightly greenish grey in part, sub-fissile, medium hard, parts slightly bentonitic and waxy, trace dark colored carbonaceous partings, very slightly micro-micaceous, trace fine sized pyrite crystals.
	25	SANDSTONE – loose fine to medium sized frosted white quartz with presence (20%) pink k-spar, sub rounded to sub angular, moderately well sorted.
1795 – 1800	65	SHALE – medium to medium dark grey to slightly brownish and greenish grey, sub-fissile, medium hard, slightly bentonite, very slightly to slightly calcareous, presence darker colored partings, trace pyrite crystals, presence LCM.
	35	SANDSTONE – loose mostly fine with some medium and rare coarse quartz grains, as above.
1800 – 1805	90	SHALE – medium slightly brownish to greenish grey colored, sub-fissile, slightly waxy luster, medium hard, very slightly to slightly calcareous, trace very fine pyrite flecks, trace pyrite veins, trace dark grey carbonaceous partings.
	10	SANDSTONE – frosted white quartz with k-spar float.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1805 – 1810	80	SHALE – medium greenish grey colored, sub-fissile, medium hard, slightly calcareous, slightly micro-micaceous, presence very dark grey colored carbonaceous partings, and light brownish grey soft earthy bentonitic claystone interbeds, rare calcareous silty streaks, trace pyrite veins.
	20	SANDSTONE – frosted white quartz with feldspar, fine to medium with trace coarse grains, sub rounded to sub angular, moderately well sorted, unconsolidated in sample, rare clay ironstone grains.
1810 – 1820	80	SHALE – as above; more common light brownish grey colored soft bentonite component.
	20	SANDSTONE – fine to medium loose quartz grains.
1820 – 1825	90	SHALE – medium grey to slightly greenish grey, sub-fissile, medium hard, slightly calcareous, presence dark carbonaceous partings, trace pyrite crystals.
	10	SANDSTONE – frosted quartz, fine to medium grained, sub rounded to sub angular, moderately well sorted, unconsolidated in sample.
1825 – 1835	100	SHALE – medium grey to greenish grey colored, sub-fissile, medium hard, slightly calcareous, slightly silty in part, trace carbonaceous partings, trace pyrite veins, presence fine to medium pyrite crystal aggregations.
1835 – 1840	100	SHALE – medium grey to partly greenish grey colored, sub-fissile, medium hard, slightly silty, slightly calcareous, trace micro-micaceous, trace pyrite crystals and veins, trace to rare very dark grey carbonaceous partings, rare calcite vein with euhedral crystal growth, rare clay ironstone grains.
1840 – 1845	100	SHALE – as above; slightly more carbonaceous laminae, trace white calcite vein material.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1845 – 1850	100	SHALE – medium to medium dark olive grey colored, sub-fissile to fissile, slightly waxy luster, medium hard, slightly to very slightly calcareous, trace micro-micaceous, trace to presence pyrite crystals and veins, trace calcite veins, trace very dark grey to black carbonaceous partings, trace pyritized fossil fragments (Crinoid).
1850 – 1860	100	SHALE – medium to medium dark grey to olive grey colored, sub-fissile to fissile, medium hard, slightly calcareous, part slightly silty, trace calcite veining trace pyrite crystals, trace black carbonaceous partings, trace light brownish grey soft bentonitic claystone.
1860 – 1865	90	SHALE – medium to medium dark grey to brownish grey, sub-fissile to fissile, slightly waxy, medium hard, slightly calcareous, presence medium green grey platy laminations, trace to rare carbonaceous partings, trace calcite veins, trace marly laminations.
	10	LIMESTONE – buff colored, blocky micritic / chalky texture, medium soft, dense.
1865 – 1870	100	SHALE – medium dark grey to brownish / greenish grey, sub-fissile, slightly waxy, medium hard, trace to presence dark grey carbonaceous partings, slightly silty to silty in part, trace pyrite crystals, trace calcite veining, trace indistinct fossil remains.
1870 – 1880	100	SHALE – medium dark grey, sub-fissile to blocky habit, medium hard to hard, presence dark colored carbonaceous partings, silty, slightly calcareous, trace calcite veins, trace pyritized fossil remains.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1880 – 1890	90	SHALE – medium dark grey, silty, slightly carbonaceous, as above
	10	SANDSTONE – frosted white quartz with presence pink to red potassium feldspar, fine to medium with rare coarse grains, sub rounded, moderately well sorted, unconsolidated in sample
1890 – 1895	100	SHALE – medium dark to dark grey colored, sub-fissile, medium hard to hard, silty, carbonaceous / bituminous stained, slightly calcareous, trace calcite veining, trace pyrite crystals, rare green grey platy and light brown grey earthy Claystone laminations.
1895 – 1900	90	SHALE – dark grey colored, sub-fissile to blocky, silty, medium hard to hard, carbonaceous / bitumen stained, slightly calcareous; interbedded Shale, medium greenish grey colored, sub fissile to fissile, slightly platy, medium hard to medium soft, trace micro-micaceous.
	10	LIMESTONE – cream to buff colored, blocky, soft, micritic, chalky texture, argillaceous, trace fossil fragments / pellets, dense
1900 – 1905	70	SHALE – medium dark to dark grey, sub-fissile, medium hard to hard, carbonaceous / bitumen staining, silty, slightly calcareous, trace pyrite, common light grey soft earthy laminations
	30	MARLSTONE – light grey, microcrystalline, medium soft, argillaceous, micritic, soft white chalky veins
1905 – 1910	80	SHALE – dark grey colored, carbonaceous / bituminous stained, silty, trace pyrite crystals, trace calcite veins, trace clay ironstone grains, trace medium greenish grey platy laminations
	20	MARLSTONE – light grey colored, microcrystalline, medium soft, very argillaceous, trace calcite veins

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1910 – 1915	65	SHALE – dark grey, sub-fissile, medium hard to hard, silty to slightly silty, slightly calcareous, common light grey soft earthy Claystone laminations.
	25	SANDSTONE – frosted white colored, quartz with presence k-spar, fine to coarse grains, sub rounded to sub angular, moderately well sorted, unconsolidated in sample.
	10	MARLSTONE – light grey colored, argillaceous, chalky texture, soft.
1915 – 1920	90	SHALE – medium dark brownish grey colored, sub-fissile, medium hard, slightly waxy luster, slightly calcareous to calcareous, part marly, slightly silty, common very fine disseminated pyrite, trace medium grey green platy and light grey soft earthy bentonitic claystone laminations, trace loose quartz float.
	10	MARLSTONE – medium brownish grey, microcrystalline, medium hard, very argillaceous, trace pyrite crystals.
1920 – 1925	100	SHALE – medium dark grey to slightly brownish greenish grey, sub-fissile, medium hard, calcareous, trace dark carbonaceous / bituminous partings, presence clear white part chalky calcite veins, trace euhedral calcite rhombs, trace clear colorless quartz prisms, trace fracture porosity.
1925 – 1930	100	SHALE – medium dark brownish greenish grey colored, sub-fissile, slightly waxy, presence calcite veining, trace bituminous partings, trace fracture porosity.
1930 – 1935	90	SHALE – medium dark brownish greenish grey, as above.
	10	MARLSTONE – light brownish grey colored, micritic, medium hard to medium soft, very argillaceous, chalky texture.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1935 – 1940	90	SHALE – medium dark grey to slightly brownish greenish grey, common dark bituminous partings, common white chalky calcite veins, trace fracture porosity.
	10	MARLSTONE – light brownish grey, chalky.
1940 – 1945	90	SHALE – dark grey to brownish grey colored, sub-fissile, medium hard to hard, carbonaceous / bituminous stained, calcareous, slightly silty, slightly micro-micaceous, trace to presence chalky white calcite veins, rare fracture porosity.
	10	MARLSTONE – light grey, soft, earthy / chalky texture.
1945 – 1950	80	SHALE – dark grey, sub-fissile, medium hard to hard, slightly waxy texture, calcareous, slightly bituminous / carbonaceous stained, trace calcite veins, trace fossil fragments.
	20	MARLSTONE – light to medium grey to brownish grey, soft, earthy / chalky texture, argillaceous.
1950 – 1965	80	SHALE – dark grey, sub-fissile, calcareous, bitumen staining, trace chalky white calcite veins.
	10	MARLSTONE – light grey, soft, chalky, as above.
	10	SANDSTONE – frosted white quartz with pink and red potassium feldspar, fine to coarse grained, sub rounded, moderately well sorted, unconsolidated in sample.
1965 – 1970	100	SHALE – dark grey with very dark grey streaks, sub-fissile, medium hard to hard, slightly calcareous, slightly silty to silty, micro-micaceous, trace pyrite, trace calcite veins, trace marly laminations, common light grey soft earthy argillaceous bentonitic claystone laminations.
1970 – 1980	100	SHALE – becoming medium to medium dark grey, sub-fissile, medium hard to hard, slightly calcareous, slightly silty, presence light grey earthy marly laminations, rare loose quartz grains, rare traces fracture porosity.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
1980 – 1990	85	SHALE – medium dark to dark grey, sub-fissile, medium hard to hard, trace bitumen / carbonaceous stain, slightly calcareous, slightly silty, trace calcite veins with trace clear euhedral calcite rhombs and quartz prisms, trace fracture type porosity.
	15	SANDSTONE – cloudy white quartz with pink to red feldspar, fine to medium grained, sub rounded, moderately well sorted, uncemented.
1990 – 1995	100	SHALE – medium dark grey, sub-fissile to fissile, slightly waxy luster, silty and marly streaks, trace to rare calcite veins, trace pyrite.
1995 – 2000	100	SHALE – medium dark to dark grey, sub fissile to fissile, medium hard, slightly waxy luster, trace black bitumen partings, trace calcite veins – part chalky / part trace drusy crystals, rare medium brown Marlstone laminations.
2000 – 2005	100	SHALE – medium dark grey with dark grey slightly bituminous laminations, sub-fissile to fissile, medium hard, slightly waxy luster and rippled surface, non calcareous to very slightly calcareous, trace very fine disseminated pyrite crystals, trace fossil remains, rare calcite veins, rare clay ironstone grains.
2005 – 2010	100	SHALE – as above; rare medium to coarse quartz grain float, rare pyritohedrons.
2010 – 2015	100	SHALE – medium dark grey with dark grey bituminous streaks, trace calcite veins, rare drusy crystals.
2015 – 2025	100	SHALE – medium dark grey as above; presence light grey colored soft marly bentonitic claystone, trace limy veins.
2025 – 2030	100	SHALE – medium dark grey with darker slightly bituminous laminations, sub-fissile to fissile medium hard, rare silty streaks, very slightly calcareous, trace calcite veins, rare pyrite, rare clay ironstone grains, trace pellet / fossil remains.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2030 – 2035	95	SHALE – medium dark grey, as above; interbedded light grey soft Shale grading to claystone, presence (10%) chalky white soft lime material.
	5	SANDSTONE – clear white quartz, fine to medium grains, sub rounded to sub angular, moderately well sorted, unconsolidated in sample.
2035 – 2045	85	SHALE – medium dark grey, as above; trace white chalky soft calcite with rare clear drusy calcite rhombs and rare quartz prisms, trace fracture – channel porosity abundant light grey colored amorphous to sub fissile soft Shale grading to bentonitic claystone.
	15	SANDSTONE – fine to medium and occasionally coarse quartz as above.
2045 – 2050	95	SHALE – medium dark grey, sub-fissile to fissile, medium hard, trace dark to very dark grey bituminous varved laminations, trace calcite veins, trace scattered sand grains, trace medium grey green colored platy Shale laminations, common light grey colored Shale grading claystone.
	5	SANDSTONE – as above.
2050 – 2060	75	SHALE – medium dark grey, abundant light grey amorphous soft bentonitic claystone with frequent dark bituminous / carbonaceous laminations, trace clear drusy calcite / quartz prisms, trace fracture porosity.
	25	SANDSTONE – clear frosted white quartz with trace k – spar and dark lithic grains, sub rounded, moderately well sorted, unconsolidated to loosely consolidated, trace calcareous clay cement, trace sideritic staining, fair to poor intergranular and tripolitic porosity, no hydrocarbon stain noted.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2060 – 2065	90	CLAYSTONE - light to medium light grey colored, amorphous to finely flaky, soft, slightly calcareous, bentonite, common very dark grey to black carbonaceous / bituminous laminations, trace fossil fragments, rare limy partings, trace pyrite crystals and veins.
	10	SANDSTONE – as above; predominantly medium sized quartz with k-spar, and lithic grains, unconsolidated.
2065 – 2070	70	CLAYSTONE – light to medium light grey with black carbonaceous laminae.
	30	SHALE – medium greenish grey to greyish green, sub-fissile to fissile, medium hard to hard, slightly calcareous.
2070 – 2075	70	CLAYSTONE – light grey colored, soft, bentonite, carbonaceous laminations.
	20	SHALE – medium greenish grey colored.
	10	SANDSTONE – white to clear frosted quartz, very fine to fine grained, sub rounded, moderately well sorted, unconsolidated, silty.
2075 – 2080	80	SHALE – medium to medium dark grey, sub-fissile to fissile, medium hard, non calcareous, micro-micaceous, presence black carbonaceous partings, rare pyrite, rare calcareous streaks, rare calcite, rare pyrite.
	20	CLAYSTONE – light grey as above.
2080 – 2085	80	SHALE – medium dark grey, fissile to sub-fissile, medium hard to hard, non calcareous, presence black carbonaceous / bituminous laminations, presence medium green grey platy interbeds, trace medium brown colored blocky marly laminations.
	20	CLAYSTONE – light grey, as above.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2085 – 2090	100	SHALE – dark grey with very dark grey streaks, fissile, slightly waxy luster, medium hard, non calcareous, presence medium green grey slightly calcareous streaks,
2090 – 2095	100	SHALE – very dark to dark grey, fissile, splintery, medium hard, carbonaceous, non calcareous, slightly micro-micaceous, trace calcite veins, trace pyritohedrons, trace medium grey and greenish grey colored, tabular, slightly calcareous laminae.
2095 – 2100	100	SHALE – black to very dark grey, fissile, platy, medium hard to medium soft, carbonaceous to very carbonaceous, trace pyrite veins and crystals, trace chalky calcite, presence very dark brownish grey soft organic earthy Shale.
2100 – 2105	60	SHALE – black to very dark grey, fissile, platy, carbon-aceous to very carbonaceous, trace pyrite crystals, rare plant remains.
	40	SANDSTONE – cloudy white quartz with light colored feldspars and composite Granite and Igneous grains, fine to coarse and occasionally very coarse grained, sub rounded to rounded, moderately sorted, unconsolidated to trace friable calcareous cement, trace siderite stain, trace pyrite, poor to fair intergranular and tripolitic type porosity, trace black pyrobitumen partings, no visible oil shows.
2105 – 2110	30	SANDSTONE – as above.
	70	SHALE – black, platy, carbonaceous.
2110 – 2115	100	SHALE – dark grey colored, sub-fissile to blocky, medium hard to hard, slightly carbonaceous non calcareous to very slightly calcareous, trace pyrite veins, trace calcite veins, common very dark grey carbonaceous interbeds, trace medium grey to greenish grey medium hard, tabular slightly calcareous Shale interbeds.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2115 – 2120	80	SHALE – dark to very dark grey, sub-fissile, slightly carbonaceous to carbonaceous, medium hard to hard, as above; trace medium greenish grey tabular, trace calcite veins, part chalky.
	20	SANDSTONE – clear white salt and pepper quartz with dark colored lithic and black chert grains, medium to coarse and very coarse grains, rounded to sub rounded, moderate sorting, silica cement, trace pyrite, trace euhedral quartz crystals, fair intergranular, drusy and tripolitic porosity, trace pyrobitumen, no oil shows.
2120 – 2125	100	SHALE – dark grey with half sample very dark grey, part carbonaceous, sub-fissile to fissile, medium hard, trace light and medium grey part marly streaks, rare quartz float.
2125 – 2130	95	SHALE – dark grey, sub-fissile to fissile, medium hard, slightly carbonaceous, trace silty, trace pyrite veins, common very fine pyrite crystals, trace light grey earthy laminations, and medium greenish grey tabular slightly calcareous, interbeds.
	05	SANDSTONE – clear quartz with dark colored lithic and chert grains, fine to medium size, sub rounded, moderately well sorted, uncemented in sample, trace drusy crystal development.
2130 – 2135	90	SHALE – as above; very dark grey to black colored, splintery, carbonaceous, trace black fossiliferous Chert grains, rare Marlstone – dark brown, blocky, hard, very argillaceous.
	10	SANDSTONE – as above; trace black fossiliferous chert grains, becoming coarser sized, silica cement in part, trace siderite stain in part, trace euhedral crystals, fair porosity.
2135 – 2140	100	SHALE – very dark grey, sub-fissile to fissile, slightly splintery, medium hard, slightly carbonaceous, slightly silty, trace bitumen partings, rare to trace pyrite veins, rare slickensides.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2140 – 2145	100	SHALE – as above; slightly lighter colored, less carbonaceous / bituminous, presence light grey colored soft earthy Claystone laminations, presence white colored calcite veins with euhedral crystals in part, trace scattered sand grains.
2145 – 2150	100	SHALE – dark grey, sub-fissile to fissile, slightly splintery, slightly waxy, medium hard, presence to common very dark grey carbonaceous / bituminous laminations, presence medium grey to greenish grey slightly calcareous tabular interbeds, trace light grey and brownish grey earthy interbeds, trace calcite veins, rare quartz crystals.
2150 – 2160	70	SHALE – as above, common light grey colored , amorphous slightly flaky soft slightly calcareous claystone.
	30	LIMESTONE – medium brownish grey colored, very fine to fine Grainstone, medium hard, silty, sandy, argillaceous, trace sideritc staining, trace pyrite crystals, trace fossil remains, trace to poor intergranular porosity, no visible oil shows.
2160 –2165	80	SHALE – medium dark grey color, sub-fissile to fissile, platy, slightly waxy, medium hard, trace pyrite, trace sand grains, trace siderite staining.
	10	SANDSTONE – predominantly fine sized quartz with rare feldspar, rounded to sub rounded, trace siderite stain, calcareous clay cement, trace to poor porosity.
	10	LIMESTONE – medium brown, fine sized grainstone, trace fossil fragments, trace pyrite.
2165 – 2170	100	SHALE – dark to medium dark grey, fissile, slightly platy to slightly splintery, medium hard, trace calcite veins, trace pyrite, rare light grey Claystone, rare light brown Marlstone.
2170 – 2175	100	SHALE – dark grey, fissile, slightly splintery, slightly waxy luster, medium hard, very slightly calcareous, carbonaceous varves, slightly silty in part, slightly micro – micaceous, trace calcite veins, trace small scale fractures.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2175 – 2180	90	SHALE – as above; slightly lighter colored to slightly greenish hue, trace medium brownish grey tabular interbeds.
	10	SANDSTONE – clear quartz with trace light colored orthoclase feldspars / dark lithic grains, predominantly fine sized, moderately well sorted, rounded to sub rounded, loosely consolidate – rare calcareous cement, poor porosity.
2180 – 2185	70	SHALE – medium dark grey, as above.
	30	SANDSTONE – clear and frosted quartz with presence light and red colored othoclase feldspars and dark lithic and carbonate grains, fine to medium with occasional coarse grains, sub rounded to rounded, moderately well sorted, loose to rare calcareous cement, poor intergranular porosity.
2185 – 2190	75	SHALE – medium dark grey, fissile, slightly platy to slightly splintery, slightly waxy luster, very slightly calcareous, trace pyrite / arsenopyrite.
	25	SANDSTONE – loose fine to medium with occasional coarse and rare very coarse quartz and light colored and siderite stained grains.
2190 – 2195	70	SHALE – medium dark steely grey colored, fissile, slightly splintery, slightly waxy, medium hard, trace micro-micaceous, very slightly calcareous, trace calcite veins.
	30	SANDSTONE – frosted white and yellow stained quartz with light and red colored feldspars, fine to coarse with rare very coarse grains, sub rounded to rounded, moderately well sorted, poor to fair porosity, no oil shows.
2195 – 2200	100	SHALE – medium to medium dark steely grey colored, fissile to sub-fissile, slightly waxy luster, medium hard, non calcareous to very slightly calcareous streaks, slightly micro-micaceous, rare calcite veins.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2200 – 2210	100	SHALE – medium to medium dark steely grey with trace darker slightly bituminous laminations.
2210 – 2215	90	SHALE – as above; part becoming medium grey, sub-fissile, medium hard, silty, slightly calcareous to calcareous, trace calcite veining / part chalky texture.
	10	SILTSTONE – medium grey, medium hard, very argillaceous, trace sandy, calcareous cement, slightly micro-micaceous, tight.
	Trace	LIMESTONE – medium grey, microcrystalline, blocky, medium hard to hard, very argillaceous, silty, dense, no visible oil shows.
2215 – 2230	100	SHALE - medium dark steely grey to slightly brownish grey colored, fissile to sub-fissile, medium hard, slightly waxy, non to very slightly calcareous, parts slightly silty, trace very fine disseminated pyrite, trace white crystalline calcite, trace loose sand.
2230 – 2240	100	SHALE - medium to dark grey, trace slightly brownish grey colored, rare dark grey to black, sub-fissile to blocky, medium hard, rare carbonaceous laminations, rare limestone streaks, becoming less waxy than above, predominantly silicious, trace non to very slightly calcareous, trace pyrite grains, rare white crystalline calcite, rare loose sand float.
2240 – 2245	95	SHALE - medium dark grey, blocky to fissile, hard, as above
	05	SILTSTONE - medium brownish grey to greyish brown, quartzitic, medium hard, argillaceous, sandy, slightly calcareous silica cement, tight.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2245 – 2260	100	SHALE - medium dark steely grey, part light brownish grey colored, minor dark grey to black, fissile to sub-fissile, medium hard, slightly waxy, minor carbonaceous, non to very slightly calcareous, occasional sideritic laminae, parts slightly silty, trace very thin limestone to marlstone laminae, trace granular and disseminated pyrite, trace loose sand float.
2260 – 2270	100	SHALE - medium grey colored, sub-fissile to blocky, well indurated, slightly siliceous throughout, slightly calcareous to locally calcareous streaks, grading to marlstone in small part, slightly micro-micaceous, rare white crystalline calcite, rare thin calcite veins.
2270 – 2275	100	SHALE - medium grey colored, trace light greyish brown and dark grey, sub fissile to blocky, well indurated, slightly siliceous throughout, becoming dolomitic, grading to dolo-marlstone in small part, locally slightly silty, rare white crystalline calcite, rare disseminated native copper specks.
2275 – 2290	100	SHALE - medium grey colored, trace dark grey, sub-fissile to blocky, well indurated, slightly siliceous throughout, dolomitic, grading to dolo-marlstone in small part, locally slightly silty, trace limonite stained quartz veins, rare sparry calcite, rare granular pyrite.
2290 – 2295	100	SHALE - medium grey colored, trace dark grey, sub-fissile to fissile in part, well indurated throughout, slightly siliceous throughout, dolomitic throughout, grading to dolo-marlstone in small part, locally slightly silty, trace to occasional creamy white to beige quartz vein fillings, rare light grey claystone stringers, rare disseminated pyrite, rare obscure crinoid fragments.
2295 – 2300	100	SHALE - medium to dark grey colored, sub-fissile to blocky, well indurated throughout, slightly siliceous and dolomitic throughout, grading to dolo-marlstone in small part, rare creamy white quartz vein fillings, rare disseminated pyrite, rare obscure fossil fragments.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2300 - 2310	100	SHALE - light grey to medium grey colored, predominantly blocky, minor amounts sub-fissile, well to very well indurated throughout, slightly siliceous and dolomitic throughout, grading to dolo-marlstone in small part, trace light grey claystone laminae, rare creamy white to sub vitreous quartz vein fillings.
2310 - 2315	100	SHALE - medium grey, minor dark grey to black, blocky to sub-fissile, well to very well indurated, locally carbonaceous, slightly siliceous and dolomitic throughout, grading to dolo-marlstone in small part, trace disseminated pyrite, occasional light yellowish white to white quartz vein fillings, rare limonite staining associated with quartz.
2315 - 2320	100	SHALE - medium grey, minor dark grey to black, predominantly blocky, trace amounts sub-fissile, well to very well indurated, locally carbonaceous, siliceous and dolomitic throughout, grading to dolo-marlstone in small part, trace mottled with thin dolomitic streaks, rare bentonitic clay stringers, rare occasional light yellowish white to white quartz vein fillings.
2320 - 2325	100	SHALE - medium grey, minor dark grey to black, predominantly blocky, trace amounts sub-fissile, well to very well indurated, locally carbonaceous, siliceous and dolomitic throughout, grading to dolo-marlstone in small part, trace mottled with thin dolomitic streaks, trace light brown sideritic claystone patches, rare granular pyrite.
2325 - 2335	100	SHALE - medium grey, minor dark grey to black, predominantly blocky, trace amounts sub-fissile, well to very well indurated, siliceous and dolomitic throughout, grading to dolo-marlstone in small part, trace light brown sideritic claystone patches, rare thin bentonite laminae, rare granular pyrite and disseminated pyrite.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2335 - 2345	100	SHALE - medium grey to dark grey, minor amounts black, predominantly blocky, trace amounts sub-fissile, well to very well indurated, siliceous and dolomitic throughout, trace mottled with thin dolomitic streaks, occasional amounts bentonitic laminae, trace light brown sideritic claystone patches, trace sparry calcite vein linings, rare granular and disseminated pyrite.
2345 – 2350	100	SHALE - dark grey to black, blocky, sub-fissile in small part, well to very well indurated, siliceous and dolomitic throughout, locally very slightly carbonaceous, trace mottled with thin dolomitic streaks, rare disseminated pyrite.
2350 - 2355	100	SHALE - medium grey to dark grey, minor amounts black, predominantly blocky, trace amounts sub-fissile, well to very well indurated, siliceous and dolomitic throughout, trace mottled with thin dolomitic streaks, rare euhedral and nodular pyrite.
2355 - 2365	100	SHALE - medium grey to dark grey, minor amounts black, blocky to sub-fissile, well to very well indurated, siliceous and dolomitic throughout, mottled with thin dolomitic streaks, trace light brown sideritic Claystone patches, rare euhedral and disseminated pyrite.
2365 - 2370	100	SHALE - medium grey to dark grey, minor black, blocky to sub-fissile, well to very well indurated, siliceous and dolomitic throughout, mottled with thin dolomitic streaks, trace light brown sideritic claystone patches, rare granular and disseminated pyrite, rare sparry calcite vein fillings.
2370 - 2375	100	SHALE - predominantly dark grey, minor light grey and black, blocky to sub-fissile, well to very well indurated, siliceous and dolomitic throughout, trace light greyish green to greenish brown sideritic claystone patches, rare disseminated pyrite, occasional light yellowish white to white quartz vein fillings, rare sparry calcite fracture infillings.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2375 - 2385	100	SHALE - medium grey to dark grey, rare black, blocky to sub-fissile, trace slightly waxy, well to very well indurated, siliceous and dolomitic throughout, mottled with thin dolomitic streaks, trace light brown sideritic claystone stringers.
2385 - 2390	100	SHALE - medium grey to dark grey, rare black, blocky to sub fissile, trace slightly waxy, well to very well indurated, siliceous and dolomitic throughout, mottled with thin dolomitic streaks, trace light brown sideritic claystone stringers, rare coal partings.
2390 - 2400	100	SHALE - medium grey to dark grey, slightly darker than above, rare black, predominantly blocky, minor sub-fissile, well to very well indurated, siliceous, slightly more dolomitic than above, mottled with very fine wavy dolomitic laminations, occasional silty light grey claystone stringers, rare finely striated sparry calcite vein linings.
2400 - 2405	100	SHALE - medium grey to dark grey, part black, blocky, well to very well indurated, predominantly dolomitic, slightly siliceous throughout, slightly carbonaceous throughout, micro-micaceous, mottled with very fine dolomitic laminations, locally silty with occasional dark grey to black siltstone stringers.
2405 - 2410	100	SHALE - dark grey to black, blocky, minor sub-fissile, part well to very well indurated, becoming moderately indurated in part, dolomitic and siliceous throughout, slightly bituminous in part, rare finely striated sparry calcite fracture linings.
2410 – 2415	100	SHALE - dark grey, minor black, blocky, minor sub-fissile, part well to very well indurated, micro-micaceous, becoming moderately indurated in part, dolomitic and siliceous throughout, slightly bituminous in part, trace microfractures sealed with white calcareous linings.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2415 - 2420	60	SHALE - medium grey to dark grey, well to very well indurated, micro-micaceous, becoming moderately indurated in part, dolomitic and siliceous throughout, locally chertified, slightly bituminous in part, rare pyrite, trace micro fractures sealed with white calcareous linings.
	40	SILTSTONE - predominantly medium grey, rare amounts black, salt and pepper, calcareous cement, minor dolomite cement, moderately indurated, interbedded with thin silty black shale laminae.
2420 - 2425	75	SHALE - dark grey to black, blocky to sub-fissile, minor fissile, part well to very well indurated, micro-micaceous, becoming moderately indurated in part, dolomitic and siliceous throughout, slightly bituminous in small part, silty, trace micro fractures sealed with white calcareous linings.
	25	SILTSTONE - predominantly medium grey, rare amounts black, salt and pepper, as above, interbedded with thin silty black shale laminae.
2425 - 2430	100	SHALE - dark grey to black, blocky to sub-fissile, minor fissile, as above, part well to very well indurated, micro-micaceous, becoming moderately indurated in part, dolomitic and siliceous throughout, slightly bituminous in small part, silty, occasional micro fractures sealed with white calcareous linings.
2430 - 2435	100	SHALE - dark grey to black, rare greenish grey, blocky to sub-fissile, well to very well indurated, locally micromicaceous, dolomitic and siliceous throughout, slightly bituminous in small part, silty, trace nodular pyrite and disseminated pyrite, common microfractures partially sealed with white calcareous linings, trace sparry calcite and pyrite, rare quartz, brecciated, questionable poor fracture porosity, no shows.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2435 - 2445	100	SHALE - dark grey to black, blocky to sub-fissile, minor fissile, well to very well indurated, dolomitic and siliceous throughout, slightly silty, trace micro fractures sealed with white calcareous linings, trace sparry calcite micro fracture linings, rare disseminated pyrite, rare phospahtic nodules.
2445 - 2450	100	SHALE - dark grey, blocky to subfissile, well to very well indurated, siliceous throughout, trace dolomitic, occasional micro fractures sealed with vitreous quartz and white calcareous linings, rare slightly silty marlstone interbeds.
2450 - 2455	90	SHALE - dark grey, minor medium grey and black, blocky to sub-fissile, well to very well indurated, siliceous throughout, trace dolomitic, occasional micro fractures sealed with vitreous quartz and white calcareous linings, rare slightly silty marlstone interbeds, rare pyrite, locally micro-micaceous, probable cavings due to cleaning out trip tank.
	10	SANDSTONE – varicolored, lower medium to upper coarse, probable cavings, poorly sorted, subangular to subrounded, loose, quartz, minor microcline feldspar fragments, no shows.
2455 - 2465	100	SHALE - predominantly medium to dark grey, rare black carbonaceous stringers, blocky, well to very well indurated, micro-micaceous, dolomitic and siliceous throughout, locally grading to dolo-marlstone, part mottled with thin wavy dolomitic streaks, rare disseminated pyrite, rare micro fractures partially sealed with white calcareous linings and black carbonaceous material, questionable poor fracture porosity, no shows.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2465 - 2470	80	SHALE - predominantly medium to dark grey, blocky, well to very well indurated, micro-micaceous, dolomitic and siliceous throughout, locally grading to dolo-marlstone, part mottled with thin wavy dolomitic streaks, rare disseminated pyrite, rare micro fractures - clear, upper coarse to upper very coarse cuttings, angular, conchoidal fractures, vitreous quartz and sparry calcite, inferred good fracture porosity, no shows.
2470 - 2475	100	SHALE - medium grey, minor dark grey, blocky, minor sub-fissile, well to very well indurated, micro-micaceous, dolomitic and siliceous throughout, rare white calcareous linings and euhedral quartz crystals, possible cavings from fracture.
2475 - 2480	100	SHALE - medium to dark grey, rare black, blocky, minor sub-fissile, well to very well indurated, micro-micaceous, dolomitic and siliceous throughout, locally slightly bituminous, rare micro fractures annealded with white calcareous linings and quartz crystals, rare pyrite.
2480 - 2485	100	SHALE - medium to dark grey, rare black, blocky, minor sub-fissile, well to very well indurated, siliceous and slightly dolomitic throughout, locally grading to dolo-marlstone, part with thin bituminous laminae, rare thin silty laminae, rare micro fractures sealed with white calcareous linings, rare pyrite, rare pyritized Crinoid fragments.
2485 - 2490	100	SHALE - dark grey, rare black, predominantly blocky, rare sub-fissile, well to very well indurated, micro-micaceous, dolomitic and siliceous throughout, rare micro fractures sealed with white calcareous linings.
2490 - 2495	100	SHALE - dark grey to black, blocky, well to very well indurated locally micro-micaceous, siliceous, slightly dolomitic throughout, rare white euhedral calcareous fracture linings, fractures sealed, rare pyrite.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2495 - 2500	100	SHALE - dark grey to black, blocky, well to very well indurated locally micro-micaceous, siliceous, slightly dolomitic throughout, locally grading to dolo-marlstone, rare foraminifera fossils.
2500 – 2505	80	SHALE – dark grey to slightly brownish grey colored, sub-fissile to blocky, medium hard to hard, slightly bentonitic type waxy texture, trace micro-micaceous, trace very dark grey carbonaceous laminations, trace calcite filled micro fractures, trace to presence light brown to yellowish brown soft Claystone laminations.
	20	SANDSTONE – clear frosted quartz with trace orange to red colored feldspar and siderite stained quartz, fine to medium grained, sub rounded, moderately well sorted, friably cemented to uncemented, calcareous clay cement in part, rare pyrite, rare quartz prisms, no visible hydrocarbon shows.
2505 - 2510	85	SHALE – dark grey to brownish grey, sub-fissile to blocky, medium hard to hard, slightly brittle, slightly waxy / greasy lustre, trace disseminated pyrite in parts, trace black carbonaceous laminations, trace micaceous streaks, trace white crystalline calcite veining, trace light grey colored soft marly partings.
	10	SILTSTONE – medium grey colored, trace vitreous, blocky, hard, dolomitic silica cement, sandy, trace clay balls, micaceous, tight.
	05	SANDSTONE – as above; white and siderite stained quartz, most fine to occasional medium grains, unconsolidated in sample, no hydrocarbon shows.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2510 – 2515	80	SHALE – dark to medium dark grey to slightly brownish greenish grey, sub-fissile to fissile, medium hard to hard, trace calcite veins, trace marly partings, some siliceous micaceous streaks.
	20	SANDSTONE – white frosted quartz with trace k-spar and light lithic and carbonate grains, predominantly fine to medium grained, sub rounded, moderately well sorted, uncemented in sample, siderite staining, trace pyrite, poor porosity.
2515 – 2520	95	SHALE – medium dark to some dark grey to slightly brownish greenish grey, sub-fissile to fissile, medium hard to hard, slightly waxy lustre, micro-micaceous in part, trace very dark grey to black bitumen / carbonaceous laminations, trace crystalline calcite veining with rare euhedral crystals, rare clear quartz prisms, trace loose quartz grains.
	05	LIMESTONE – medium brownish grey, microcrystalline, hard, trace pellets, very argillaceous, trace dolomitic, trace pyritic, dense.
2520 – 2525	85	SHALE – medium dark grey to slightly brownish greenish grey colored as above; rare to trace black carbonaceous laminations, trace to presence white crystalline calcite veins, trace siliceous / pyritic streaks, rare light colored Claystone.
	10	SANDSTONE – white frosted to orange red stained quartz, fine to medium grained, trace k-spar and carbonate grains, unconsolidated in sample, trace calcareous coating in part, rare clear quartz prisms, poor porosity, no shows.
	05	LIMESTONE – medium slightly mottled brownish grey colored, microcrystalline to very fine crystalline, blocky, hard, dolomitic, argillaceous, trace pellet ghosts and fossil fragments, trace calcite veining, dense to trace fracture porosity.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2525 – 2530	90	SHALE – medium dark to slightly brownish greenish grey, sub-fissile to slightly tabular, slightly waxy / silky type lustre, medium hard to hard, very slightly calcareous, slightly micro-micaceous, trace very fine disseminated pyrite crystals, trace calcite veins, some siliceous micaceous streaks.
	10	LIMESTONE – medium brownish grey colored, very fine crystalline, blocky, hard, argillaceous, trace pellet and fossil fragments.
2530 – 2535	85	SHALE – as above; medium dark grey with dark grey to black bitumen / carbonaceous cleavages, trace calcite veins, rare euhedral calcite and quartz crystals.
	15	SANDSTONE – clear white frosted quartz, fine to medium grains, unconsolidated, trace orange / red siderite and ferric staining, poor porosity.
2535 – 2540	90	SHALE – dark to medium dark grey with very dark grey bituminous cleavages, sub-fissile to fissile, slightly waxy type lustre, trace euhedral calcite crystals and quartz prisms, trace black colored carbonaceous / bituminous laminations.
	10	LIMESTONE – medium brown grey colored, microcrystalline to very fine crystalline, trace pellets and fossil fragments, trace calcite veins with rare euhedral crystals, trace fracture porosity.
2540 – 2545	90	SHALE – medium dark grey with trace dark to very dark grey cleavages, as above; rare to trace black laminations, micro-micaceous, trace calcite veins.
	05	LIMESTONE – medium brown grey colored, micro-crystalline very fine crystalline, argillaceous, trace pellets, trace fossil fragments, trace calcite veins, trace fractures.
	05	SILTSTONE – medium brown, medium hard, dolomitic clay cement, very argillaceous, trace micaceous, tight.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2545 – 2555	100	SHALE – dark grey, sub-fissile to fissile, medium hard to hard, very slightly calcareous, trace micro-micaceous, presence (15%) clear white calcite veins including calcite rhombs and quartz prisms, trace to presence black carbonaceous / bituminous laminations, trace slickensides, trace inter- crystalline fracture porosity, minor Limestone and Siltstone laminations.
2555 – 2560	100	SHALE – dark grey to slightly olive grey colored, sub-fissile to slightly blocky habit, medium hard to hard, very slightly calcareous, micro-micaceous, trace euhedral calcite crystals and quartz prisms, rare black carbonaceous / bituminous partings, trace Limestone stringers.
2560 – 2565	100	SHALE – dark to medium dark steely grey colored as above; trace calcite crystals, rare black laminations, trace Limestone.
2565 – 2570	100	SHALE – medium dark to dark grey colored, sub-fissile to fissile slightly waxy lustre, medium hard to hard, very material, trace black hard blocky carbonaceous laminations, trace pyrite crystals, trace micaceous streaks, rare limy partings.
2570 – 2572.5	90	SHALE – as above; becoming, medium dark to dark brownish grey, more common very dark grey cleavages, trace calcite / silica vein and fracture fill material; part very dark brown colored, blocky, brittle, hard to very hard, siliceous.
	10	LIMESTONE – medium to dark brownish grey, micro-crystalline to very fine crystalline, blocky, hard, argillaceous, presence fossils / pellets, trace calcite / quartz veins and fracture infill, trace fracture porosity.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2572.5 – 2575	90	SHALE – dark grey to brown grey with common very dark grey to black colored cleavages, blocky to sub-fissile, hard, siliceous, very slightly calcareous micro-micaceous, presence milky calcite crystals (5%) and quartz (10%) crystals, presence (15%) very dark brown, blocky, very hard, pyrite veined, siliceous – cherty, trace fracture porosity.
	10	LIMESTONE – as above; presence calcite and quartz micro fracture fill material, trace fossil remains.
2575 – 2577.5	95	SHALE – dark grey, sub-fissile to fissile, medium hard to hard, trace to presence very dark grey carbonaceous / bituminous laminae, presence calcite (8%) and quartz (8%) crystals – part euhedral, rare dark brown cherty Shale laminations.
	05	LIMESTONE – as above; fossil and pellet fragments, trace white crystalline veining, dense to trace fracture porosity.
2577.5 – 2580	100	SHALE – dark grey to slightly brownish greenish grey colored, sub-fissile, medium hard to hard, very slightly micromicaceous to micro-micaceous, trace black bituminous / carbonaceous laminations – partly vitreous lustre, rare to trace pyrite, trace calcite / quartz crystals, rare limey streaks.
2580 – 2582.5	100	SHALE – as above; trace (5%) milky white colored euhedral calcite, presence (10%) clear and milky white quartz crystals and prisms, trace light greenish / yellowish fibrous mineralization, rare medium brown pyrobitumen like stain, trace fracture type porosity, no fluorescence or cut.
2582.5 – 2585	100	SHALE – as above; presence very dark colored cleavages, trace to presence (10%) clear and milky white calcite and quartz crystals.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2585 – 2587.5	100	SHALE – dark grey to brownish grey colored, sub-fissile to slightly blocky, hard, siliceous, very slightly calcareous, trace calcite veining / fracture fill, trace to presence milky quartz crystal veining / fracture fill, trace greenish gold fibrous mineral veining, trace slickensides, rare pyro-bituminous staining, rare loose fine sized quartz and k-spar sand grains, rare pyrite veins, trace Limestone stringers.
2587.5 – 2590	100	SHALE – as above; lesser amount (5%) calcite / quartz crystallization, sub-fissile, hard to medium hard, siliceous, poor to fair porosity.
2590 – 2592.5	100	SHALE – dark grey to slightly brownish greenish grey, sub-fissile to blocky, hard, siliceous, very slightly calcareous, slightly micro-micaceous, rare black bituminous / carbonaceous laminations, rare to trace pyrite, trace to rare clear white crystalline calcite / quartz crystals, trace limy streaks.
2592.5 – 2595	100	SHALE – as above; hard to some very hard siliceous laminations, trace calcite crystals, trace to presence clear and milky white quartz.
2595 – 2597.5	100	SHALE – as above; slightly blocky to tabular habit, slightly harder, trace calcite, common (25%) milky white crystalline quartz fracture fill material, trace clear drusy crystals, trace light green silky fibrous mineralization, some slickensides traces, trace limy brecciation and streaks.
2597.5 – 2600	85	SHALE – dark to medium dark grey to slightly brownish grey with some very dark grey laminae, sub-fissile to slightly blocky, hard to medium hard, very slightly calcareous, trace to presence calcite vein and micro fracture fill, trace quartz crystal fill, trace slickensides.
	15	SANDSTONE – clear frosted white and orange to red siderite/ ferric stained quartz, fine to medium grained, sub rounded, moderately well sorted, unconsolidated in sample.

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CDN FOREST et al N LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2600 – 2605	100	SHALE – dark to very dark grey colored, sub-fissile, hard to medium hard, slightly waxy lustre, very slightly calcareous, trace to presence calcite material, trace quartz material, slightly micro-micaceous, trace black colored carbonaceous / bituminous laminations – part shiny lustre.
2605 – 2607.5	95	SHALE – as above; trace very dark brown grey colored, blocky, sharp, very hard, very siliceous streaks.
	05	LIMESTONE – medium brown, microcrystalline, hard, argillaceous, dolomitic, argillaceous, trace fossil fragments, trace calcite, trace pyrite, dense.
2607.5 – 2610	100	SHALE – dark grey with rare very dark grey partings, sub-fissile, becoming slightly calcareous, trace to presence calcite crystals, trace to presence quartz crystals, trace limy streaks.
2610 – 2612.5	95	SHALE – as above; trace very dark grey bitumen / carbonaceous laminae, trace calcite veining / sealed fractures, trace very hard very siliceous beds, presence (20%) quartz veining / fracture fill with part vitreous / adamantine crystals and prisms, trace slickensides, trace fracture porosity.
	05	LIMESTONE – medium grey brown, microcrystalline, hard, argillaceous, fossiliferous, dense.
2612.5 – 2617.5	95	SHALE – as above; becoming slightly lighter colored and slightly more calcareous in part, more calcite constituent in white vein / fracture fill material, rare black carbonaceous / bituminous streaks.
	05	LIMESTONE – as above.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2617.5 – 2620	90	SHALE – dark grey with presence very dark grey laminae, sub-fissile, hard, slightly calcareous with calcareous streaks, trace calcite and quartz veins / fracture infill.
	05	EVAPORITE – frosted white with pinkish stain, fine to medium grain size Calcispheres, rounded to well rounded, high sphericity, medium hard to soft, calcareous, unconsolidated in sample, presence insoluble residue (barite).
	05	LIMESTONE – light to medium mottled greyish brown, microcrystalline, blocky, hard, slightly argillaceous, slightly dolomitic, parts fossiliferous, trace calcite veins, dense to trace porosity.
2620 – 2622.5	50	SHALE – dark grey to slightly greenish grey colored with some very darker colored laminations, slightly silky / phyllitic texture, slightly calcareous, trace calcite and quartz veining, rare very hard cherty streaks, trace slickensides trace Limestone stringers.
	50	EVAPORITE – translucent to frosted white with reddish veining and patchy staining in part, fine to coarse micro-crystalline size grains and fine to medium sized partly euhedral crystals, medium hard to soft, some slightly limy.
2622.5 – 2627.5	95	SHALE – becoming very dark to dark grey, sub-fissile to fissile very slightly to slightly calcareous with trace limy streaks, micro-micaceous, slightly silty in part, presence (20%) clear and milky calcite veins and rhombs and quartz veins and prisms, rare pyrite crystal clusters, rare black bituminous laminae, trace slickensides.
	05	EVAPORITE – as above; clear frosted white, to pale grey and tan, fine to coarse grains and crystals.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2627.5 – 2629.5	90	SHALE – dark grey with common very dark grey laminae, sub-fissile to fissile, hard, slightly to very slightly calcareous, trace to rare pyrite, rare black carbonaceous / bituminous streaks, trace calcite veins and filled micro fractures, rare quartz prisms.
	10	LIMESTONE – medium to light grey brown, micro-crystalline to very fine crystalline, hard, argillaceous, trace calcite veins and fossil replacements, rare pyritized Crinoid remains.
2629.5		**TOTAL DEPTH – 311.2 mm / 244.5 mm O.D. FIRST INTERMEDIATE HOLE / CASING**
2629.5 – 2632.5	20	SHALE – dark grey with very dark grey greasy cleavages, hard, very slightly calcareous, slightly micro-micaceous, trace to rare black partings, rare white specks, trace calcite veins.
	80	CEMENT – buff colored, fine to medium sized micro-crystalline to cryptocrystalline grains, hard, trace calcite veins / fossil remains, rare pyrite, dense to trace organic type porosity
2632.5 – 2635	45	SHALE – dark grey with very dark grey partings, as above.
	55	CEMENT – buff colored, fine to medium sized micro-crystalline to cryptocrystalline grains, hard, trace calcite veins / fossil remains, rare pyrite, dense to trace organic type porosity
2635 – 2640	80	SHALE – very dark to dark grey, sub-fissile, hard, very slightly calcareous, trace micro-micaceous, rare pyrite, rare to trace calcite veins.
	20	CEMENT – buff colored, fine to medium sized micro-crystalline to cryptocrystalline grains, hard, trace calcite veins / fossil remains, rare pyrite, dense to trace organic type porosity

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2640 – 2647.5	90	SHALE – very dark to dark grey with very dark grey to black greasy cleavages, sub-fissile to fissile, hard to medium hard, very slightly calcareous, slightly micro-micaceous, rare pyrite, rare calcite veins, rare slickensides.
	20	CEMENT – buff colored, fine to medium sized micro-crystalline to cryptocrystalline grains, hard, trace calcite veins / fossil remains, rare pyrite, dense to trace organic type porosity
2647.5 – 2652.5	95	SHALE – dark grey with some very dark grey streaks, sub-fissile to fissile, some medium grey colored soft flaky interbeds.
	05	CEMENT – buff colored, fine to medium sized micro-crystalline to cryptocrystalline grains, hard, trace calcite veins / fossil remains, rare pyrite, dense to trace organic type porosity
2652.5 – 2657.5	100	SHALE – dark to part very dark grey, sub-fissile to fissile, hard, very slightly calcareous, trace to rare calcite veins, minor Limestone.
2657.5 – 2660	100	SHALE – dark to medium dark grey to slightly olive grey colored, sub-fissile to fissile, hard, brittle, non calcareous to very slightly calcareous, trace micro-micaceous, some dark laminations.
2660 – 2662.5	100	SHALE – as above; trace to presence (10%) white colored crystalline calcite.
2662.5 – 2670	100	SHALE – as above; trace to rare calcite, trace to presence very dark brownish grey to black colored slightly pyritic bituminous laminations, trace to presence light grey colored, soft flaky laminae.
2670 – 2672.5	100	SHALE – dark grey to slightly olive grey colored, sub-fissile, hard, very slightly calcareous, trace very hard tabular siliceous laminations, presence (15%) white colored crystalline calcite and quartz material.

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2672.5 – 2675	100	SHALE – as above; dark to medium dark color, presence white crystalline calcite with trace drusy / euhedral rhombs (10%), and milky crystalline quartz with trace clear prisms (10%), rare slickensides.
2675 – 2682.5	100	SHALE – as above trace (3 - 5%) white crystalline material, trace slickensides.
2682.5 – 2687.5	100	SHALE – as above; strong trace (10%) white colored crystalline calcite and quartz, greater quartz component.
2687.5 – 2690	100	SHALE – dark grey to slightly olive grey, sub-fissile, hard, brittle, very slightly calcareous, presence to common (35%) white colored crystalline calcite (¾), and milk colored crystalline quartz (1/4), traces clear drusy / euhedral crystals, trace to poor intercrystalline / fracture porosity.
2690 – 2695	100	SHALE – medium dark grey to slightly olive grey colored, some dark to very dark laminations, sub-fissile, hard, non calcareous, presence to common (30%) white crystalline vein / fracture infill material, rare to trace drusy crystals, trace slickensides, trace fracture porosity.
2695 – 2697.5	100	SHALE – as above; becoming slightly darker colored with common slightly bituminous laminae, sub fissile to slightly blocky habit, trace calcite healed micro fractures, calcite / quartz crystals (20%), trace black pyritic bitumen partings.
2697.5 – 2705	100	SHALE – dark to medium\m dark grey to slightly olive grey, trace very dark laminae, sub-fissile to fissile, slightly platy, slightly waxy lustre with greasy laminae, hard, very slight to non calcareous, trace very fine disseminated pyrite crystals, trace (10%) calcite / quartz crystallization, trace slickensides.
2705 – 2712.5	100	SHALE – as above; becoming mostly dark colored, slightly micro-micaceous, trace white crystals, rare fossil remains (Brachiopod).

SAMPLE RECORD / C-31

INTERVAL (metres)	LITH (%)	DESCRIPTION
2712.5 – 2715	100	SHALE – as above; slightly more blocky habit, some very hard siliceous streaks, trace milky white quartz.
2715 – 2720	100	SHALE – as above; dark grey to olive grey with very dark laminae, rare to trace pyrite crystal blebs.
2720 – 2722.5	100	SHALE – as above; sub-fissile to blocky, siliceous, trace calcite / quartz, trace soft black pyrobitumen parting / coating, trace slickensides.
2722.5 – 2730.75	100	SHALE – dark grey to slightly olive grey colored with trace very dark colored cleavages, sub-fissile to fissile, slightly waxy lustre, hard, brittle, non calcareous, trace very hard tabular siliceous laminae, trace to rare white colored calcite / quartz crystals.
2730.75		**TOTAL DEPTH C-31**

MILLED CASING WINDOW at 2366.8 m K.B.
FOR COMMENCEMENT of SIDETRACK NO. 1

SAMPLE RECORD / C-31A SIDETRACK NO. 1

INTERVAL (metres)	LITH (%)	DESCRIPTION
2366.8		**BASE OF INTERMEDIATE CASING WINDOW**
2366.8-2370		NO SAMPLE RECORD
2370 – 2375	30	CEMENT – speckled light grey to tan colored, soft, limy, with abundant buff colored loose fine to medium Calcium Carbonate grains.
	70	SHALE – dark to medium dark grey, sub-fissile to blocky, hard to medium hard, slightly calcareous, trace lighter colored Claystone partings, rare pyrite, trace calcite veins.
2375 – 2385	25	CEMENT – as above; mostly Calcium Carbonate grains.
	75	SHALE – very dark grey, sub-fissile, hard, brittle, slightly siliceous, trace pyrite, trace to rare calcite veins, trace blocky hard siliceous interbeds.
2385 – 2392.5	80	SHALE –dark grey with some very dark grey waxy laminae, sub-fissile to fissile, hard, slightly micro-micaceous, rare to trace calcite veins, rare light colored Claystone, rare black carbonaceous partings.
	20	CEMENT – as above; mostly Calcium Carbonate grains.
2392.5 – 2397.5	85	SHALE – medium dark to dark grey, trace to presence very dark grey carbonaceous / bituminous cleavages, blocky to sub-fissile, slightly calcareous, trace micro-micaceous, trace calcite veins, trace to rare pyrite.
	15	CEMENT – as above.

SAMPLE RECORD / C-31A SIDETRACK NO. 1

INTERVAL (metres)	LITH (%)	DESCRIPTION
2397.5 – 2405	90	SHALE – dark to medium dark grey to slightly brownish grey, blocky, hard, siliceous, slightly carbonaceous / bituminous, rare silty streaks.
	10	CEMENT – as above.
2405 – 2410	80	SHALE – very dark grey to slightly brownish grey, blocky to subfissile, hard, slightly silty to silty, part very siliceous, trace pyrite crystals, rare to trace crystalline calcite and rarely quartz, rare black carbonaceous partings.
	10	SILTSTONE – dark to medium dark grey, blocky, hard, slightly calcareous / dolomitic, very argillaceous, micro-micaceous, tight.
	10	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.
2410 – 2415	90	SHALE – medium dark grey to slightly brownish grey, sub-fissile to blocky, slightly siliceous, slightly bituminous, trace calcite filled micro-fractures, some Siltstone interbeds.
	10	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.
2415 – 2420	50	SHALE – very dark grey to dark grey, sub-fissile to blocky, hard, trace siliceous, trace cherty in part, trace to presence very dark grey to black bituminous / carbonaceous cleavages, rare pyrite, trace micro-fractures, trace white calcite material.
	30	SILTSTONE – medium dark slightly brownish grey, blocky, hard to very hard, siliceous, trace calcareous / dolomitic, micro-micaceous, tight.
	20	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.

SAMPLE RECORD / C-31A SIDETRACK NO. 1

INTERVAL (metres)	LITH (%)	DESCRIPTION
2420 – 2425	65	SHALE – dark to medium dark grey, blocky to sub-fissile, hard, micro-micaceous, as above; some very hard brittle interbeds, silty streaks.
	25	SILTSTONE – predominantly medium grey, blocky, hard, very argillaceous.
	10	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.
2425 – 2430	75	SHALE – very dark to dark grey with presence very dark greasy carbonaceous / bituminous laminae, sub-fissile, hard, micro-micaceous, very slightly calcareous, siliceous, trace to rare frosted white crystalline calcite vein and fracture fill material, rare crystalline quartz.
	25	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture, minor buff fine to medium Calcium Carbonate grains, trace mica flakes.
2430 – 2435	80	SHALE – dark grey to very dark grey, rare greenish streaks, blocky to sub-fissile, hard, trace micro-micaceous, siliceous, silty, trace sandy streaks, trace finely disseminated pyrite, common micro-fractures with calcite fill material, rare milky crystalline quartz, trace fracture porosity.
	20	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.
2435 – 2445	80	SHALE – dark to very dark grey to very slightly brownish grey, sub-fissile, hard, brittle, siliceous, slightly silty, trace white crystalline calcite and quartz, rare disseminated pyrite, rare phosphate nodules.
	20	CEMENT – speckled white to light grey and tan colored, soft, limy, chalky texture.

SAMPLE RECORD / C-31A SIDETRACK NO. 1

INTERVAL (metres)	LITH (%)	DESCRIPTION
2445 – 2450	85	SHALE – dark to medium dark grey, sub-fissile to fissile, hard, siliceous, slightly silty, very slightly calcareous, trace frosted white calcite and quartz crystals, rare clear quartz prisms, trace marly silty micaceous interbeds.
	15	CEMENT – speckled white to light grey and tan colored, soft, chalky texture.
2450		**TOTAL DEPTH – C-31A SIDETRACK NO. 1**

SAMPLE RECORD / C-31A SIDETRACK NO. 2

INTERVAL (metres)	LITH (%)	DESCRIPTION
2300.0		**BASE OF INTERMEDIATE CASING WINDOW**
2300 – 2302.5	40	METAL – silvery to brassy to bluish colored casing filings.
	25	CEMENT – speckled light grey to tan colored, soft, limy, with abundant buff colored loose fine to medium Calcium Carbonate grains.
	25	SHALE – medium to medium dark grey, sub-fissile to blocky, hard to medium hard, slightly calcareous, trace lighter colored Claystone partings, rare pyrite, trace calcite vein
	10	.SANDSTONE – frosted quartz with reddish stain, fine to coarse grains, loose in sample.
2302.5 – 2307.5	5	METAL – as above.
	20	CEMENT – speckled white to tan with common fine to medium sized Calcium Carbonate grains.
	55	SHALE – medium to medium dark grey, blocky to sub-fissile, hard to medium hard, slightly siliceous, trace light colored Claystone laminations, rare pyritized Crinoid.
	20	SANDSTONE – frosted white quartz with reddish stain and feldspar grains, fine to coarse grains, sub-rounded, moderately well sorted, loose in sample, poor porosity.

SAMPLE RECORD / C-31A SIDETRACK NO. 2

INTERVAL (metres)	LITH (%)	DESCRIPTION
2307.5 – 2310	65	SHALE – medium light grey, sub-fissile, medium hard to hard, trace white soft chalky streaks, rare pyrite, slightly micro-micaceous, common (35%) shiny black colored, sub-fissile, soft, brittle, very carbonaceous grading to COAL.
	15	CEMENT – as above; common Calcium Carbonate.
	20	SANDSTONE – as above.
2310 – 2311	100	SHALE – medium grey, grading to medium greenish grey in small part, subfissile and blocky, micromicaceous, micro fractured in small part – rare amounts of clear upper medium size fragments of cryptocrystalline calcite and silica spar – micro fracture infill, well indurated.
	Trace	METAL
	Trace	MUD ADDITIVE – barite.
2311 – 2312.5	97	SHALE - medium grey, grading to medium greenish grey in small part, subfissile, grading to blocky in part, micromicaceous in part, rare amounts of scattered clear mica flakes, exhibits smaller degree of micro fracturing than above interval – less spar evident in this interval, very well indurated.
	02	METAL
	01	CEMENT

SAMPLE RECORD / C-31A SIDETRACK NO. 2

INTERVAL (metres)	LITH (%)	DESCRIPTION
2312.5 – 2315	94	SHALE - medium grey, grading to light greenish grey in small part, subfissile, fissile and splintery in small part, micromicaceous in part, micro fractured in small part – rare amounts of clear upper medium size fragments of cryptocrystalline calcite and silica spar – micro fracture infill, very well indurated.
	05	METAL
	01	CEMENT
2315 – 2317.5	96	SHALE - medium and light grey, subfissile, minor amounts of blocky, micromicaceous in part, rare amounts of white calcite veining, micro fractured in small part – rare amounts of clear upper medium and lower coarse size fragments of cryptocrystalline calcite and silica spar – micro fracture infill, well indurated.
	03	CEMENT
	01	METAL
2317.5 – 2320	96	SHALE - medium and light grey, subfissile and fissile, generally as above, well indurated.
	03	CEMENT
	01	METAL
2320 – 2322.5	94	SHALE - medium grey, minor amounts of light grey, subfissile and fissile, becoming splintery in small part, less microfracturing evident in this interval, rare amounts of medium grey calcareous marlstone laminae, well indurated.
	05	CEMENT
	01	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 2

INTERVAL (metres)	LITH (%)	DESCRIPTION
2322.5 – 2325	96	SHALE - medium grey, occasional amounts of light grey, subfissile, minor amounts of blocky, micromicaceous in part, no microfracturing evident in this interval, rare amounts of medium grey calcareous marlstone laminae, well to very well indurated.
	03	CEMENT
	01	METAL – casing.
2325 – 2327.5	92	SHALE - medium grey, rare amounts of light grey, subfissile to fissile, micromicaceous in part, no microfracturing evident in this interval, well indurated.
	07	CEMENT
	01	METAL – casing.
2327.5 – 2330	94	SHALE - medium and light grey, subfissile to fissile, micromicaceous in part, no microfracturing evident in this interval, well indurated.
	05	CEMENT
	01	METAL – casing.
2330		**TOTAL DEPTH – C-31A SIDETRACK NO. 2**
		CEMENT PLUG SET FROM 2301.0 m K.B to 2330.0 m K.B FOR SIDETRACK No. 3

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SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2300		**BASE OF INTERMEDIATE CASING WINDOW**
2301.0		**TOP OF CEMENT PLUG**
		TIME DRILL ON CEMENT PLUG
2301 – 2302	95	CEMENT
	05	SHALE – medium grey, subfissile, minor fissile, micromicaceous in small part, very well indurated.
2302.2 – 2302.5	80	CEMENT
	19	SHALE – medium grey, grading to light grey, subfissile, minor blocky, micromicaceous in small part, rare amounts of black micro to silt size specks scattered throughout, well indurated.
	01	METAL
2302.5 – 2305	85	SHALE – light and medium grey, subfissile to fissile, micromicaceous in small part, rare amounts of black micro to silt size specks scattered throughout, moderately indurated.
	15	CEMENT
	Trace	METAL

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SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2305 – 2306	95	SHALE – light and medium grey, subfissile to fissile, minor blocky, micromicaceous in small part, rare amounts of black micro to silt size specks scattered throughout, becoming micro fractured in this interval – occasional amounts (<1% disaggregated spar) clear to white cryptocrystalline to lower fine crystalline calcite spar / veining, well indurated.
	05	CEMENT
	Trace	METAL
2306 – 2307.5	87	SHALE – medium grey, grading to light grey in part, subfissile to blocky, micromicaceous in small part, rare amounts of black micro to silt size specks scattered throughout, becoming increasingly micro fractured in this interval – occasional amounts (<2% disaggregated spar) clear to white cryptocrystalline calcite and rare silica spar / veining, well indurated.
	08	CEMENT
	04	MARLSTONE – medium brown and medium grayish brown, lithographic, calcareous, well indurated.
	01	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2307.5		**END OF TIME DRILL OPERATIONS, COMMENCE DIRECTIONAL DRILLING OPERATIONS**
2307.5-2310	95	SHALE – medium grey, subfissile to fissile, minor blocky, micromicaceous in small part, rare amounts of black micro to silt size specks and very thin streaks scattered throughout, becoming less micro fractured in this interval – rare to trace amounts (<1% disaggregated spar) clear to white cryptocrystalline to lower fine crystalline calcite spar / veining, well indurated.
	03	CEMENT
	02	MARLSTONE – medium brown and medium grayish brown, lithographic, calcareous, well indurated.
	Trace	METAL
2310-2312.5	80	SHALE – light and medium grey, subfissile to blocky, micromicaceous in small part, well indurated.
	20	CEMENT
	Trace	MARLSTONE – medium brown and medium grayish brown, lithographic, calcareous, well indurated.
	Trace	METAL

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2312.5-2315	85	SHALE – medium grey, minor amounts of light grey, subfissile to fissile, very finely laminated to a moderate degree, becoming increasingly fractured in this interval, occasional amounts (<3% disaggregated spar) white to clear lower coarse to lower very coarse crystalline calcite spar, crystal habit truncated, well indurated.
	10	MARLSTONE – medium brown and medium grayish brown, silty, calcareous, well indurated.
	05	CEMENT
	Trace	METAL
2315-2317.5	96	SHALE – medium grey, occasional amounts of light grey, subfissile, minor blocky, well indurated.
	03	MARLSTONE – medium brown and medium tan, silty, calcareous, well indurated.
	01	CEMENT
	Trace	METAL
2317.5-2320	97	SHALE – medium grey, subfissile, minor fissile, rare amounts of small scale microfracturing, trace (<1% disaggregated spar) amounts of white cryptocrystalline calcite spar, well indurated.
	02	MARLSTONE – medium brown and medium tan, calcareous, well indurated.
	01	CEMENT
	Trace	METAL

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2320-2322.5	99	SHALE – medium grey, subfissile, minor blocky, well indurated.
	01	CEMENT
	Trace	MARLSTONE – medium brown and medium tan, calcareous, well indurated.
	Trace	METAL
2322.5-2325	99	SHALE – medium grey, subfissile, minor blocky, occasional amounts of small scale microfracturing – (<1% disaggregated spar) clear to white cryptocrystalline to upper fine crystalline calcite spar and veining, well indurated.
	01	CEMENT
	Trace	MARLSTONE – medium brown and medium tan, calcareous, well indurated.
	Trace	METAL
2325-2330	100	SHALE – medium grey, subfissile, well indurated.
	Trace	MARLSTONE – medium brown and medium tan, calcareous, well indurated.
2330 – 2332.5	100	SHALE – medium grey, subfissile, minor fissile, trace amounts of small scale microfracturing, (<1% disaggregated spar) white cryptocrystalline calcite spar and veining, well indurated.
	Trace	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2332.5 – 2335	100	SHALE – medium grey, subfissile, minor fissile, well indurated.
	Trace	METAL
2335 – 2337.5	100	SHALE – medium grey, subfissile, minor fissile, trace light grey bentonitic claystone laminae, well indurated.
	Trace	SILTSTONE – light grey, quartzose, rare medium grey lithic fragments, silica cement, very argillaceous, well indurated.
	Trace	METAL
2337.5 – 2340	100	SHALE – medium grey, subfissile, minor fissile, trace light grey bentonitic claystone laminae, well indurated.
	Trace	METAL
2340 – 2345	99	SHALE – medium grey, subfissile, minor blocky, trace light grey bentonitic claystone laminae, well indurated.
	01	METAL
2345 – 2350	98	SHALE – medium grey, subfissile, minor fissile, rare amounts of small scale microfracturing (<1% disaggregated spar) white cryptocrystalline to lower coarse crystalline silica spar, rare amounts of scattered micro to lower very fine crystalline pyrite, well indurated.
	02	MARLSTONE – medium to dark brown, silty in part, calcareous, well indurated.
	Trace	METAL

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2350 – 2352.5	100	SHALE – medium grey, subfissile, silty in small part, well indurated.
	Trace	METAL
2352.5 – 2355	100	SHALE – medium grey, subfissile, minor blocky, rare amounts of small scale microfracturing (<1% disaggregated spar) white upper medium to lower coarse crystalline calcite spar, well indurated.
	Trace	METAL
2355 – 2357.5	100	SHALE – medium grey, subfissile, minor blocky, rare amounts of upper coarse size pyrite inclusions – clusters of pyrite exhibiting a lower to upper fine crystalline equant habit, well indurated.
	Trace	METAL
2357.5 – 2362	98	SHALE – medium grey, subfissile, minor blocky, occasional amounts of light grey bentonitic claystone laminae, rare amounts of small scale microfracturing (<1% disaggregated spar) white upper medium to lower coarse crystalline calcite spar, rare amounts of upper coarse size pyrite inclusions – clusters of pyrite exhibiting a lower to upper fine crystalline equant habit, well indurated.
	02	SILTSTONE – medium grey, quartzose, rare silica cement, very argillaceous, moderately to poorly indurated.
2362		**TRIP FOR DRILL BIT – BECOME STUCK IN HOLE AT 2349.0 m K.B.**

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2362 – 2363	99	SHALE – medium grey, subfissile, minor blocky, very slightly micromicaceous, rare amounts of slickensides, moderately developed amounts of small scale microfracturing (<3% disaggregated spar) – micro to 1 mm width micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper fine to lower very coarse size angular medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper very coarse crystalline silica spar, occasional amounts of microcrystalline dolomite spar, dolomite spar represented as a surficial stain on the silica crystals, alteration sequence along fracture planes is silica, then dolomite, rare amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	01	SILTSTONE – light grey, quartzose, rare amounts of micro / disseminated pyrite dispersed throughout, rare amounts of dark mica flakes, silica cement, argillaceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2363 – 2365	98	SHALE – medium grey, subfissile, minor fissile, very slightly micromicaceous and rare amounts of mica flakes, slickensides becoming increasingly evident in this interval, moderately to well developed amounts of small scale microfracturing (<4% disaggregated spar) – becoming increasingly microfractured in this interval, micro to 1 mm width micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper fine size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper very coarse crystalline silica spar, occasional amounts of microcrystalline to upper coarse crystalline calcite spar, and light greyish green fibrous chlorite, alteration sequence along fracture planes is chlorite, calcite, then silica, occasional amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	02	SILTSTONE – medium grey, grading to light grey, quartzose, occasional amounts of micro / disseminated pyrite dispersed throughout, rare amounts of dark mica flakes, silica cement, argillaceous, well indurated.
	Trace	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2365 – 2367.5	100	SHALE – medium grey, subfissile, minor blocky, generally as above, becoming silty in part, trace amounts of light grey bentonitic claystone laminae developed, slickensides becoming less evident in this interval, moderately to well developed amounts of small scale microfracturing (<4% disaggregated spar) – as above, micro to 3 mm width micro fracture planes evident, non and intersecting, brecciated to small degree – rare amounts of floating micro to upper fine size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper very coarse crystalline silica spar, occasional amounts of microcrystalline to upper coarse crystalline calcite spar, and light greyish green fibrous chlorite, alteration sequence along fracture planes is as above, proportion of calcite spar within the fracture planes is increasing, occasional amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	Trace	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2367.5 – 2370	97	SHALE – medium grey, subfissile and fissile, becoming silty in part, micromicaceous in part, trace amounts of light grey bentonitic claystone laminae developed, slickensides becoming increasingly evident in this interval, moderately to well developed amounts of small scale microfracturing (<3% disaggregated spar) minor amounts of lined micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper medium size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper coarse crystalline silica spar, occasional amounts of microcrystalline to upper coarse crystalline calcite spar, and rare amounts of light greyish green fibrous chlorite, alteration sequence along fracture planes is as above, proportion of chlorite is decreasing in this interval, minor amounts of disseminated / micro pyrite dispersed throughout, generally increasing in this interval, well indurated.
	03	SILTSTONE – medium grey, quartzose, rare amounts of micro to upper very fine size black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2370 – 2372.5	100	SHALE – medium grey, occasional amounts of light grey, subfissile and fissile, blocky in large part, mcromicaceous in part, trace amounts of light grey bentonitic claystone laminae developed, slickensides becoming increasingly evident in this interval, moderately developed amounts of small scale microfracturing (<2% disaggregated spar) minor amounts of lined micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper medium size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper fine to upper coarse crystalline silica spar, occasional amounts of microcrystalline to upper coarse crystalline calcite spar, and rare amounts of light greyish green fibrous chlorite, alteration sequence along fracture planes is as above, proportion of chlorite is decreasing in this interval, minor amounts of disseminated / micro pyrite and pyrite veining dispersed throughout, proportion of pyrite generally increasing in this interval, well indurated.
	Trace	SILTSTONE – medium grey, quartzose, rare amounts of micro to upper very fine size black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2372.5 – 2380	96-99	SHALE – medium grey, rare amounts of light grey, subfissile and fissile, blocky in large part, micromicaceous in part, more micromicaceous than above interval, rare amounts of black organic microlaminations, slickensides less evident in this interval, but generally increasing in proportion down section, moderately developed amounts of small scale microfracturing (<2% disaggregated spar) minor amounts of lined micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper medium size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white upper fine to upper coarse crystalline silica spar, rare amounts of microcrystalline to upper coarse crystalline calcite spar, and very rare amounts of light greyish green fibrous chlorite, alteration sequence along fracture planes is as above, proportion of chlorite is decreasing in this interval, minor amounts of disseminated / micro pyrite and pyrite veining dispersed throughout, proportion of pyrite generally decreasing in this interval, well indurated.
	01-02	SILTSTONE – medium grey, quartzose, rare amounts of micro to upper very fine size black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.
	Trace-01	CLAYSTONE – light brown, light grayish brown, earthy, very bentonitic, poorly indurated.
	Trace	MARLSTONE – medium to dark tan, calcareous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2380 – 2382.5	53	SHALE – medium grey, subfissile and fissile, blocky in large part, micromicaceous in part, becoming more micromicaceous than above interval, rare amounts of black organic microlaminations, slickensides more evident in this interval, moderately developed amounts of small scale microfracturing (<3% disaggregated spar) minor amounts of lined micro fracture planes evident, non intersecting, brecciated to small degree – rare amounts of floating micro to upper medium size medium grey shale lithic fragments floating in spar, micro fractures predominantly lined with white lower medium to upper coarse crystalline silica spar, rare amounts of microcrystalline to upper coarse crystalline calcite spar, and very rare amounts of light greyish green fibrous chlorite, alteration sequence along fracture planes is as above, proportion of chlorite is increasing slightly in this interval, minor amounts of disseminated / micro pyrite and pyrite veining dispersed throughout, proportion of pyrite generally increasing in this interval, well indurated.
	45	CLAYSTONE – light brown, light grayish brown, earthy, very bentonitic, poorly indurated.
	01	SILTSTONE – medium grey, quartzose, rare amounts of micro to upper very fine size black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.
	01	MARLSTONE – medium tan, calcareous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2382.5 – 2385	99	SHALE – medium grey, subfissile and fissile, micromicaceous in part, rare amounts of black organic microlaminations and specks, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) occasional amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white cryptocrystalline calcite spar, rare amounts of disseminated / micro pyrite dispersed throughout, proportion of pyrite decreasing in this interval, well indurated.
	01	SILTSTONE – medium grey, quartzose, rare amounts of microcrystalline black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.
	Trace	CLAYSTONE – light brown, light grayish brown, earthy, very bentonitic, poorly indurated.
2385 – 2387.5	96	SHALE – medium grey, subfissile and blocky, micromicaceous in part, rare amounts of black organic microlaminations and specks, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) occasional amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white cryptocrystalline calcite spar, rare amounts of disseminated / micro pyrite dispersed throughout, proportion of pyrite increasing in this interval, well indurated.
	02	SILTSTONE – medium grey, quartzose, rare amounts of microcrystalline black organic specks, rare amounts of disseminated pyrite, silica cement, argillaceous, well indurated.
	02	CLAYSTONE – light brown, light grayish brown, earthy, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2387.5 – 2392.5	100	SHALE – medium grey, subfissile and blocky, micromicaceous in part, rare amounts of black organic microlaminations and specks, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) occasional amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white cryptocrystalline calcite spar, rare amounts of disseminated / micro pyrite dispersed throughout, rare amounts of siderite nodules, well indurated.
	Trace	SILTSTONE – medium grey, medium brownish grey, quartzose, rare amounts of microcrystalline black organic specks, rare amounts of disseminated pyrite, silica cement, rare amounts of siderite cement, argillaceous, well indurated.
	Trace	CLAYSTONE – light brown, light grayish brown, earthy, very bentonitic, poorly indurated.
2392.5 – 2395	100	SHALE – medium grey, subfissile and blocky, micromicaceous in part, rare amounts of black organic microlaminations, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) occasional amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white cryptocrystalline calcite spar, rare amounts of disseminated / micro pyrite dispersed throughout, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2395 – 2397.5	96	SHALE – medium grey, subfissile and blocky, micromicaceous in part, rare amounts of black organic microlaminations, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) very rare amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white cryptocrystalline calcite spar, rare amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	04	CLAYSTONE – light brown and light grayish brown, very bentonitic, micaceous in part, poorly indurated.
	Trace	MARLSTONE – medium tan, calcareous, silicified, very well indurated.
2397.5 – 2400	98	SHALE – medium grey, grading to dark grey in small part, subfissile and blocky, micromicaceous, rare amounts of black organic microlaminations, minor slickensides, no evidence of microfracturing, rare amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	01	SILTSTONE – medium to dark grey, quartzose, rare black organic specks, silica cement, argillaceous, very well indurated.
	01	METAL
	Trace	CLAYSTONE – light brown and light grayish brown, very bentonitic, micaceous in part, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2400 - 2402.5	100	SHALE – medium grey, grading to dark grey in small part, subfissile, minor fissile, micromicaceous, becoming silty in small part, rare amounts of black organic microlaminations and specks, minor slickensides, no evidence of microfracturing, rare amounts of disseminated / micro pyrite dispersed throughout, well indurated.
	Trace	SILTSTONE – medium to dark grey, quartzose, rare black organic specks, silica cement, argillaceous, very well indurated.
	Trace	CLAYSTONE – light brown and light grayish brown, very bentonitic, micaceous in part, poorly indurated.
2402.5 - 2405	75	SHALE – medium grey, grading to dark grey in large part, becoming dark grey colored in this interval, subfissile, minor fissile, micromicaceous, becoming silty in small part, occasional amounts of black organic microlaminations and specks, black organic microlaminations increasing, minor slickensides, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white upper fine to lower medium crystalline calcite spar, occasional amounts of disseminated / micro pyrite dispersed throughout, generally proportion of pyrite increasing in this interval, well indurated.
	24	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey, quartzose, minor black organic specks – up to upper very fine size, rare amounts of clear mica flakes, silica cement, occasional calcite cement, rare amounts of disseminated micro pyrite, argillaceous, very well indurated.
	01	CLAYSTONE – light brown and light grayish brown, very bentonitic, micaceous in part, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2405 – 2407.5	70	SHALE – medium grey, grading to medium brownish grey and dark grey in part, rare amounts of black, subfissile, minor fissile, micromicaceous, generally as above, becoming bituminous and phosphatic in small part, increase in proportion of disseminated micro pyrite, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white upper fine to lower coarse crystalline calcite spar, rare amounts of upper very coarse to granule size pyrite fragments, well indurated.
	20	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey and black, as above, becoming bituminous and phosphatic in part, rare amounts of clear mica flakes, silica cement, occasional calcite cement, increase in proportion of disseminated micro pyrite, very well indurated.
	10	MARLSTONE – medium brownish grey, very silicified, pyritic in part – minor amounts of disseminated and micro pyrite dispersed throughout, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2407.5 – 2412.5	85-90	SHALE – medium brownish grey, occasional dark grey, rare black, subfissile, minor fissile, micromicaceous, micaceous in part, silty in part, occasional amounts of black organic microlaminations and specks, slickensided, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, non intersecting, micro fractures predominantly lined with white upper coarse to lower very coarse crystalline calcite spar, locally becoming pyritic, both disseminated and micro pyrite, occasional amounts of very fine crystalline pyrite clusters, well indurated.
	10-15	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey and black, as above, very well indurated.
	Trace	MARLSTONE – medium brownish grey, very silicified, pyritic in part – minor amounts of disseminated and micro pyrite dispersed throughout, very well indurated.
2412.5 – 2415	95	SHALE – medium brownish grey, occasional dark grey, rare dark brownish grey, subfissile, minor fissile, becoming splintery in small part, micromicaceous, silty in part, rare amounts of black organic microlaminations and specks, slickensided in small part, no evidence of microfracturing, pyritic in small part, both disseminated and micro pyrite, well indurated.
	05	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey and black, as above, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2415 – 2417.5	100	SHALE – medium brownish grey, occasional dark grey, rare dark brownish grey, subfissile, minor fissile, becoming splintery in small part, micromicaceous, silty in part, rare amounts of black organic microlaminations and specks, slickensided in small part, no evidence of microfracturing, pyritic in small part, both disseminated and micro pyrite, less pyritic than above interval, well indurated.
	Trace	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey and black, as above, very well indurated.
2417.5 – 2420	97	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, occasionally slickensided in small part, poorly developed amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, intersecting, micro fractures predominantly lined with white cryptocrystalline to lower coarse crystalline calcite and silica spar, localized medium grey shale lithic inclusions within the spar, rare disseminated and micro pyrite, well indurated.
	02	MARLSTONE – medium brownish grey, calcareous, silicified, very well indurated.
	01	MUD ADDITIVE
	Trace	SILTSTONE – medium to dark grey, minor amounts of medium brownish grey and black, as above, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2420 – 2422.5	95	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, occasionally slickensided in small part, exhibits higher degree of microfracturing in this interval, moderately developed amounts of small scale microfracturing (<3% disaggregated spar) rare amounts of lined micro fracture planes evident, intersecting, micro fractures predominantly lined with white cryptocrystalline to clear upper medium to upper very coarse crystalline silica and occasional calcite spar, brecciated - localized medium grey shale lithic inclusions within the spar, rare disseminated and micro pyrite, rare upper very fine crystalline pyrite clusters, well indurated.
	03	SILTSTONE – dark grey, grading to black, quartzose, occasional black organic micro specks – phosphate grains(?), silica cement, minor amounts of disseminated pyrite, bituminous in large part, very well indurated.
	01	MARLSTONE – medium brownish grey, calcareous, silicified, very well indurated.
	01	MUD ADDITIVE

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2422.5 – 2425	95	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, becoming increasingly slickensided in this interval, poorly developed microfracturing in this interval, rare amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, as above, microfractures predominantly lined with white cryptocrystalline to clear upper very coarse crystalline silica and occasional calcite spar, localized medium grey shale lithic inclusions within the spar, occasional disseminated and micro pyrite, becoming increasingly pyritic in this interval, well indurated.
	03	SILTSTONE – dark grey, grading to black, quartzose, occasional black organic micro specks – phosphate grains(?), silica cement, minor amounts of disseminated pyrite, bituminous in large part, very well indurated.
	01	MARLSTONE – medium brownish grey, calcareous, silicified, very well indurated.
	01	MUD ADDITIVE

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2425 - 2430	95	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval, rare amounts of small scale microfracturing (<1% disaggregated spar) rare amounts of lined micro fracture planes evident, as above, microfractures predominantly lined with white cryptocrystalline to clear upper coarse crystalline calcite and minor silica spar, occasional disseminated and micro pyrite, rare very coarse size subrounded pyrite grains down section, well indurated.
	05	SILTSTONE – dark grey, grading to black in part, quartzose, rare black organic micro specks, silica cement, rare amounts of disseminated pyrite, bituminous in part, very well indurated.
	Trace	MARLSTONE – medium brownish grey, calcareous, silicified, very well indurated.
2430 - 2432.5	80	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval, rare amounts of small scale microfracturing, rare amounts of very thin lined micro fracture planes evident, microfractures predominantly lined with white cryptocrystalline calcite spar, occasional disseminated and micro pyrite, well indurated.
	20	SILTSTONE – dark grey, grading to black in part, quartzose, rare black organic micro specks, silica cement, rare amounts of disseminated pyrite, bituminous in small part, very well indurated.
	Trace	MARLSTONE – medium brownish grey, calcareous, silicified, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2432.5 – 2435	85	SHALE – medium grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, slickensided in small part, no evidence of microfracturing, occasional disseminated and micro pyrite, well indurated.
	15	SILTSTONE – dark grey, quartzose, rare black organic micro specks, silica cement, rare amounts of disseminated pyrite, very well indurated.
2435 – 2437.5	80	SHALE – medium grey, grading to dark grey, occasional black, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, slickensided in small part, no evidence of microfracturing, occasional disseminated and micro pyrite, well indurated.
	20	SILTSTONE – medium and dark grey, quartzose, rare black organic micro specks, silica cement, rare amounts of disseminated pyrite, very well indurated.
2437.5 – 2440	70	SHALE – medium grey, grading to medium brownish grey, occasional dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, slickensided in small part, no evidence of microfracturing, occasional disseminated and micro pyrite, well indurated.
	20	MARLSTONE – medium to dark brownish grey, very calcareous, silty in part, well indurated.
	10	SILTSTONE – medium and dark grey, quartzose, rare black organic micro specks, silica and calcite cement, rare amounts of disseminated pyrite, very well indurated.

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2440 – 2442.5	80	SHALE – medium grey, grading to dark grey in part, dark grey, subfissile, minor blocky, rare amounts of black organic microlaminations and specks, localized black organic patches, slickensided in small part, poorly developed microfracturing in this interval (<1% disaggregated spar), rare amounts of micro fracture planes evident, microfractures predominantly lined with white very coarse crystalline calcite spar, exhibiting increased microfracturing in this interval, occasional disseminated and micro pyrite, well indurated.
	10	MARLSTONE – medium to dark brownish grey, very calcareous, silty in part, well indurated.
	10	SILTSTONE – medium and dark grey, quartzose, rare black organic micro specks, silica and calcite cement, rare amounts of disseminated pyrite, argillaceous, well indurated.
2442.5 – 2445	75	SHALE – medium to dark grey, occasional medium brownish grey, subfissile, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval (<1% disaggregated spar), rare amounts of micro fracture planes evident, microfractures predominantly lined with white upper coarse to upper very coarse crystalline calcite spar, occasional disseminated and micro pyrite, well indurated.
	15	MARLSTONE – medium to dark brownish grey, very calcareous, silty in part, well indurated.
	10	SILTSTONE – medium and dark grey, quartzose, rare black organic micro specks, silica and calcite cement, rare amounts of disseminated pyrite, argillaceous, well indurated.

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2445 – 2447.5	75	SHALE – medium to dark grey, occasional medium brownish grey and black, subfissile, becoming increasingly organic / bituminous in this interval, occasional amounts of black organic microlaminations and specks, increasingly slickensided – irregular striated surfaces present, moderately developed microfracturing in this interval (<2% disaggregated spar), occasional amounts of micro fracture planes evident, irregular, intersecting and non intersection microfractures predominantly lined with white upper fine to upper coarse crystalline calcite, then silica spar, occasional disseminated and micro pyrite, well indurated.
	15	MARLSTONE – medium to dark brownish grey, very calcareous, silty, well indurated.
	10	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, rare amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2447.5 – 2450	70	SHALE – medium to dark grey, minor medium brownish grey and black, subfissile, becoming increasingly organic / bituminous in this interval, occasional amounts of black organic microlaminations and specks, and localized patchy sections, localized occurrences of black mica flakes, increasingly slickensided – irregular striated surfaces present, well developed microfracturing in this interval (<5% disaggregated spar), common amounts of micro fracture planes evident, irregular, intersecting and non intersection microfractures predominantly lined with white cryptocrystalline upper fine to upper coarse crystalline calcite, occasional disseminated and micro pyrite and upper very fine crystalline pyrite clusters, well indurated.
	20	MARLSTONE – medium to dark brownish grey, very calcareous, silty, well indurated.
	10	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, localized occurrences of black mica flakes, calcite and silica cement, rare amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2450 – 2455	75-80	SHALE – medium to dark grey, minor medium brownish grey and black, subfissile, generally as above, exhibiting a decrease in proportion of slickensides and microfracturing – generally moderately to poorly developed (2%-3% disaggregated spar – as above), microfractures decreasing down section over this interval, calcareous in small part, occasional disseminated and micro pyrite and upper very fine crystalline pyrite clusters, well indurated.
	10-15	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic in part, well indurated.
	10	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, localized occurrences of black mica flakes, calcite and silica cement, rare amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2455 – 2457.5	75	SHALE – medium to dark grey, minor medium brownish grey and black, subfissile, occasional amounts of black organic microlaminations and specks, calcareous in small part, slickensided – irregular striated surfaces present, poorly developed microfracturing in this interval (<1% disaggregated spar), rare amounts of micro fracture planes evident, irregular, intersecting and non intersection microfractures predominantly lined with white cryptocrystalline upper fine to upper coarse crystalline calcite, occasional disseminated and micro pyrite and upper very fine crystalline pyrite clusters, occasional coarse to very coarse and granule size pyrite grains, well indurated.
	20	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic, well indurated.
	05	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, rare amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2457.5 – 2460	90	SHALE – medium to dark grey, grading to black, subfissile, becoming increasingly organic / bituminous in this interval, common amounts of black organic microlaminations and specks, calcareous in small part, very slickensided – irregular striated surfaces present, poorly developed microfracturing in this interval (<2% disaggregated spar), rare amounts of micro fracture planes evident, irregular, intersecting and non intersection microfractures predominantly lined with white cryptocrystalline upper fine to upper coarse crystalline calcite and rare silica spar, occasional disseminated and micro pyrite and upper very fine crystalline pyrite veining, well indurated.
	10	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic, well indurated.
	Trace	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, rare amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2460 – 2462.5	90	SHALE – medium grey, minor dark grey, occasional black, subfissile, minor fissile, locally becoming increasingly pyritic, calcareous – becoming increasingly calcareous in this interval, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided – irregular striated surfaces present, poorly developed microfracturing in this interval (<1% disaggregated spar), rare amounts of micro fracture planes evident, irregular, intersecting and non intersection microfractures predominantly lined with white cryptocrystalline upper fine to upper coarse crystalline calcite spar, common amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	10	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic, well indurated.
	Trace	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, occasional amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2462.5 – 2467.5	100	SHALE – medium grey, minor dark grey, occasional black, subfissile, minor blocky and splintery, pyritic, slightly calcareous, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided – irregular striated surfaces present, well developed microfracturing and fracturing in this interval (<10% disaggregated spar), rare amounts of micro fracture planes evident, irregular, intersecting and non intersecting microfractures predominantly lined with white cryptocrystalline calcite spar and pyrite in small part, fracture plane lined with white to light greyish white and beige, cryptocrystalline to upper fine, and minor amounts of upper medium crystalline silica spar, then upper medium to upper coarse crystalline calcite spar, locally fracture is brecciated – floating upper medium to upper very coarse size angular medium grey shale lithic fragments enclosed by spar, common amounts of disseminated and micro pyrite dispersed throughout, poor fracture porosity, well indurated.
	Trace	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic, well indurated.
	Trace	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, occasional amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2467.5 – 2470	100	SHALE – medium grey, minor dark grey, occasional black, subfissile, minor blocky and splintery, pyritic, slightly calcareous and dolomitic in part, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided – irregular striated surfaces present, moderately developed microfracturing and fracturing in this interval (<4% disaggregated spar), rare amounts of micro fracture planes evident, irregular, intersecting and non intersecting microfractures predominantly lined with white cryptocrystalline calcite spar, fracture plane lined with white to light greyish white cryptocrystalline to upper fine, and minor amounts of upper medium crystalline calcite spar, locally fracture is brecciated to a small degree – rare floating upper medium to upper very coarse size angular medium grey shale lithic fragments enclosed by spar, common amounts of disseminated and micro pyrite dispersed throughout, poor fracture porosity, well indurated.
	Trace	MARLSTONE – medium to dark brownish grey, very calcareous, silty, pyritic, well indurated.
	Trace	SILTSTONE – medium to light brownish grey, grading to medium and dark grey, mottled, quartzose, rare black organic micro specks, calcite and silica cement, occasional amounts of disseminated pyrite, argillaceous, bituminous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2470 – 2472.5	100	SHALE – medium grey, minor dark grey and medium brownish grey, rare black, subfissile to fissile, minor blocky, dolomitic in part, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided – irregular striated surfaces present, no evidence of microfracturing, common amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	Trace	MARLSTONE – medium to dark brownish grey, very dolomitic, silty, pyritic, well indurated.
2472.5 – 2477.5	100	SHALE – medium grey, minor dark grey and medium brownish grey, rare black, subfissile to fissile, minor blocky, dolomitic in part, becoming less dolomitic down section, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided – irregular striated surfaces present, no evidence of microfracturing, common amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	Trace	MARLSTONE – medium to dark brownish grey, very dolomitic, silty, pyritic, well indurated.
2477.5 – 2480	98	SHALE – medium grey, minor dark grey and medium brownish grey, rare black, subfissile to fissile, minor blocky, dolomitic in part, organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided in small part, common amounts of disseminated and micro pyrite dispersed throughout, well indurated
	02	MARLSTONE – medium to dark brownish grey, very dolomitic, silty, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2480 – 2482.5	98	SHALE – medium grey, occasional dark grey, rare black, generally as above, becoming increasingly dolomitic, slight increase in organic content - bituminous in small part, rare to occasional amounts of black organic microlaminations and specks, slickensided in small part, common amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	02	MARLSTONE – medium brownish grey, very dolomitic, silty, pyritic, rare amounts of microfossil detritus, well indurated.
2482.5 – 2487.5	100	SHALE – medium grey, rare dark grey, subfissile, micromicaceous, very rare amounts of black organic microlaminations and specks, slickensided in small part, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	Trace	MARLSTONE – medium grey, dolomitic, silty, pyritic, well indurated.
2487.5 – 2490	98	SHALE – medium grey, rare dark grey, subfissile, micromicaceous, slickensided in small part, dolomitic in part, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	02	MARLSTONE – medium grey, dolomitic, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2490 – 2492.5	97	SHALE – medium grey, rare dark grey, subfissile, micromicaceous, dolomitic, becoming increasingly dolomitic in this interval, slightly organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval (<1% disaggregated spar), rare amounts of micro fracture planes evident, irregular, non intersecting microfractures predominantly lined with white cryptocrystalline to upper medium crystalline calcite and rare dolomite spar, common amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium grey, dolomitic, pyritic, well indurated.
2492.5 – 2495	100	SHALE – medium grey, rare dark grey, subfissile, micromicaceous, slightly dolomitic, becoming less dolomitic in this interval, slightly organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval – as above, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	Trace	MARLSTONE – medium grey, dolomitic, pyritic, well indurated.
2495 – 2497.5	95	SHALE – medium grey, rare dark grey and black, subfissile, micromicaceous, slightly dolomitic, very slightly organic / bituminous in small part, rare amounts of black organic microlaminations and specks, slickensided in small part, poorly developed microfracturing in this interval – as above, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	05	MARLSTONE – medium grey, dolomitic, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2497.5 – 2500	97	SHALE – medium grey, subfissile, micromicaceous, dolomitic, very slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly no evidence of microfracturing in this interval, occasional amounts of disseminated and micro pyrite dispersed throughout, rare amounts of very coarse size pyrite grains, well indurated.
	03	MARLSTONE – medium grey, occasional medium brown and medium tan, dolomitic, calcareous in part, locally very silty, pyritic, well indurated.
2500 – 2502.5	100	SHALE – medium grey, subfissile, micromicaceous, dolomitic, very slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing (<1% disaggregated spar), microfractures lined with white to light greyish white cryptocrystalline to lower medium crystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	Trace	MARLSTONE – medium grey, occasional medium brown and medium tan, dolomitic, calcareous in part, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2502.5 – 2505	100	SHALE – medium grey, grading to dark grey, rare amounts of black, subfissile, micromicaceous, dolomitic in small part, slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – no disaggregated spar, very thin micro fractures – irregular, sealed with light grey cryptocrystalline to upper very fine crystalline silica spar, occasional amounts of disseminated and micro pyrite dispersed throughout, generally more pyritic in this interval, well indurated.
	Trace	MARLSTONE – medium grey, occasional medium brown and medium tan, dolomitic, calcareous in part, pyritic, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic, silica and minor amounts of dolomite cement, pyritic, argillaceous, very well indurated.
2505 – 2507.5	97	SHALE – medium grey, grading to dark grey, subfissile, micromicaceous, dolomitic in part, slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – <1%) disaggregated spar, sealed with light grey cryptocrystalline to upper fine crystalline silica spar, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium grey, dolomitic, pyritic in part, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic, silica and minor amounts of dolomite cement, pyritic, argillaceous, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2507.5 – 2510	97	SHALE – medium grey, grading to dark grey, rare amounts of black, subfissile, micromicaceous, dolomitic in part, organic / bituminous in small part, becoming more organic in this interval, occasional amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – <1%) disaggregated spar, sealed with light grey cryptocrystalline to upper fine to upper coarse crystalline calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium grey, grading to dark tan, dolomitic, pyritic in part, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic in part, silica and minor amounts of dolomite cement, pyritic, argillaceous, well indurated.
2510 – 2512.5	98	SHALE – medium grey, subfissile, micromicaceous, dolomitic in part, organic / bituminous in small part, rare amounts of black organic microlaminations, slickensided in small part, no evidence of microfracturing, occasional amounts of disseminated and micro pyrite dispersed throughout, rare amounts of coarse size pyrite grains, well indurated.
	02	MARLSTONE – medium grey, dolomitic, pyritic in part, well indurated.
2512.5– 2515	100	SHALE – medium grey, grading to dark grey in small part, fissile to subfissile, micromicaceous, organic / bituminous in part, becoming more organic in this interval, occasional amounts of black organic microlaminations, slickensided in small part, no evidence of microfracturing, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2502.5 – 2505	100	SHALE – medium grey, grading to dark grey, rare amounts of black, subfissile, micromicaceous, dolomitic in small part, slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – no disaggregated spar, very thin micro fractures – irregular, sealed with light grey cryptocrystalline to upper very fine crystalline silica spar, occasional amounts of disseminated and micro pyrite dispersed throughout, generally more pyritic in this interval, well indurated.
	Trace	MARLSTONE – medium grey, occasional medium brown and medium tan, dolomitic, calcareous in part, pyritic, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic, silica and minor amounts of dolomite cement, pyritic, argillaceous, very well indurated.
2505 – 2507.5	97	SHALE – medium grey, grading to dark grey, subfissile, micromicaceous, dolomitic in part, slightly organic / bituminous in small part, very rare amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – <1%) disaggregated spar, sealed with light grey cryptocrystalline to upper fine crystalline silica spar, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium grey, dolomitic, pyritic in part, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic, silica and minor amounts of dolomite cement, pyritic, argillaceous, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2507.5 – 2510	97	SHALE – medium grey, grading to dark grey, rare amounts of black, subfissile, micromicaceous, dolomitic in part, organic / bituminous in small part, becoming more organic in this interval, occasional amounts of black organic microlaminations, slickensided in small part, poorly developed microfracturing – <1%) disaggregated spar, sealed with light grey cryptocrystalline to upper fine to upper coarse crystalline calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium grey, grading to dark tan, dolomitic, pyritic in part, well indurated.
	Trace	SILTSTONE – medium to dark grey and black in part, quartzose, organic in part, silica and minor amounts of dolomite cement, pyritic, argillaceous, well indurated.
2510 – 2512.5	98	SHALE – medium grey, subfissile, micromicaceous, dolomitic in part, organic / bituminous in small part, rare amounts of black organic microlaminations, slickensided in small part, no evidence of microfracturing, occasional amounts of disseminated and micro pyrite dispersed throughout, rare amounts of coarse size pyrite grains, well indurated.
	02	MARLSTONE – medium grey, dolomitic, pyritic in part, well indurated.
2512.5 – 2515	100	SHALE – medium grey, grading to dark grey in small part, fissile to subfissile, micromicaceous, organic / bituminous in part, becoming more organic in this interval, occasional amounts of black organic microlaminations, slickensided in small part, no evidence of microfracturing, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2515 – 2517.5	97	SHALE – medium grey, occasional amounts of dark grey, fissile to subfissile, micromicaceous, dolomitic, slightly organic / bituminous in part, rare amounts of black organic microlaminations, slickensided in small part, no evidence of microfracturing, occasional amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium brownish grey, dolomitic, silty, pyritic in large part, well indurated.
2517.5 – 2520	98	SHALE – medium grey, rare amounts of dark grey, fissile, minor subfissile, micromicaceous, slickensided in small part, no evidence of microfracturing, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	02	MARLSTONE – medium brownish grey, dolomitic, silty, slightly pyritic, well indurated.
2520 – 2522.5	96	SHALE – medium grey, rare amounts of dark grey, subfissile to blocky, micromicaceous, slickensided in small part, no evidence of microfracturing, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	04	MARLSTONE - medium brownish grey, calcareous, siliceous, slightly pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2522.5 – 2525	100	SHALE – medium grey, rare amounts of dark grey, subfissile to blocky, micromicaceous, dolomitic in part, slickensided in small part, rare amounts of small scale microfracturing, irregular microfractures sealed with light greyish white upper very fine crystalline calcite and rare pyrite, rare amounts of disseminated and micro pyrite dispersed throughout, rare amounts of pyrite clusters – very fine crystalline, and rounded pyrite framboids, well indurated.
	Trace	MARLSTONE – medium brownish grey, calcareous, slightly pyritic, well indurated.
2525 – 2527.5	100	SHALE – medium grey, grading to dark grey in small part, rare amounts of black, subfissile to blocky, micromicaceous, micaceous in small part, slickensided to moderate degree, poorly developed microfractures, rare amounts of small scale microfracturing, irregular microfractures sealed with light greyish white upper very fine to upper medium crystalline calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, rare amounts of pyrite clusters – very fine crystalline, well indurated.
	Trace	MARLSTONE – medium brownish grey, calcareous, slightly pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2527.5-2728		Circulate up bottom hole sample. EDR depth record concerns – drill bit depth reading 0.5 m greater than hole depth value at 2527.5 metres hole depth record, then advanced and/or corrected hole depth record to equal bit depth record. Missing meterage record interpreted to be possibly due to drill string pipe squat, while working hole and then conducting a flow check. EDR record indicates the 0.20 metre drill time records for 2527.6 , 2527.8 and 2528.0 m, occurred while drill bit was off bottom.
		A drilling fluid loss occurred - approximately 3 metres cube – interpreted to be squeezed or mechanically induced into the formation due to high mud density while drilling this interval, and not the resultant of a fracture zone – bottom hole sample indicated rare amounts of spar occurrence.
2528 – 2530	98	SHALE – medium grey, grading to dark grey in small part, subfissile to fissile, splintery in small part, micromicaceous, slickensided to moderate degree, poorly developed microfractures, rare amounts of small scale microfracturing, irregular microfractures sealed with light greyish white upper very fine to upper medium crystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	02	MARLSTONE – medium brownish grey, calcareous, slightly pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2530 – 2540	97-98	SHALE – medium grey, grading to dark grey in part, rare amounts of black down section, subfissile to fissile, micromicaceous, becoming organic / bituminous in small part, very thin black organic microlaminations throughout, slickensided in part, poorly developed microfractures, rare amounts of small scale microfracturing, irregular microfractures sealed with light greyish white upper very fine to upper fine crystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, rare amounts of upper very fine crystalline pyrite clusters, well indurated.
	02-03	MARLSTONE – medium brownish grey, dolomitic, slightly pyritic, locally exhibits very small scale irregular microfractures – sealed with white and light greyish white microcrystalline to lower very fine crystalline calcite spar, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2540 – 2547.5	92-93	SHALE – medium grey, grading to dark grey, occasional black, subfissile to fissile, micromicaceous, becoming organic / bituminous, very thin black organic microlaminations, specks, and streaks throughout, slickensided in part, poorly developed microfractures (<1% disaggregated spar), lined with white and light greyish white cryptocrystalline and upper very coarse crystalline calcite and silica spar, silica spar content increases down section, rare amounts of disseminated and micro pyrite dispersed throughout, rare amounts of upper very fine crystalline pyrite clusters and coarse size pyrite grains, well indurated.
	03-05	SILTSTONE – medium to dark grey, grading to dark greyish black, quartzose, silica cement, minor amounts of calcite cement, bituminous, pyritic, well indurated.
	03-04	MARLSTONE – medium brownish grey, dolomitic, silty, slightly pyritic, locally exhibits very small scale irregular microfractures – sealed with white and light greyish white microcrystalline to lower very fine crystalline calcite spar, well indurated.
	Trace	CLAYSTONE – light grey and light brownish grey, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2547.5 – 2550	85	SHALE – medium grey, grading to dark grey, subfissile to fissile, micromicaceous, becoming organic / bituminous, very thin black organic microlaminations, specks, and streaks throughout, slickensided, poorly developed microfractures, rare amounts of disaggregated spar, lined with white and light greyish white cryptocrystalline and upper very coarse crystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	10	CLAYSTONE – light to medium brownish grey, very bentonitic, poorly indurated.
	04	MARLSTONE – medium brownish grey, dolomitic, silty, slightly pyritic, locally exhibits very small scale irregular microfractures – sealed with white and light greyish white microcrystalline to lower very fine crystalline calcite spar, well indurated.
	01	METAL
	Trace	SILTSTONE – medium to dark grey, grading to dark greyish black, as above, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2550 – 2552.5	95	SHALE – medium grey, grading to dark grey, subfissile to fissile, splintery in part, micromicaceous, organic / bituminous in part, very thin black organic microlaminations, specks, and streaks, slickensided, poorly developed microfractures, rare amounts of disaggregated spar, lined with white and light greyish white cryptocrystalline and upper very coarse crystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	MARLSTONE – medium brownish grey, dolomitic, silty, slightly pyritic, locally exhibits very small scale irregular microfractures – sealed with white and light greyish white microcrystalline to lower very fine crystalline calcite spar, brecciated – locally upper coarse size subangular marlstone lithic fragments floating in spar, well indurated.
	02	METAL
	Trace	CLAYSTONE – light to medium brownish grey, as above, poorly indurated.
	Trace	SILTSTONE – medium to dark grey, grading to dark greyish black, as above, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2552.5 – 2557.5	97	SHALE – medium grey, grading to dark grey, trace amounts of black, subfissile, minor blocky, becoming splintery in part down section, micromicaceous, organic / bituminous, generally exhibits an increase in proportion of very thin black organic microlaminations, specks, and streaks, slickensided, becoming increasingly slickensided down section, poorly developed microfractures (<1%) disaggregated spar, microfractures lined with white and light greyish white cryptocrystalline, upper fine and upper medium crystalline calcite spar, rare amounts of upper medium to upper coarse crystalline silica spar, rare amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	03	MARLSTONE – medium brownish grey, dolomitic, silty, pyritic, locally exhibits very small scale irregular microfractures – exhibiting brecciated features as above, well indurated.
	Trace	METAL
	Trace	SILTSTONE – medium to dark grey, grading to dark greyish black, as above, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2557.5 – 2562.5	98	SHALE – medium grey, grading to dark grey, trace amounts of black, subfissile, minor blocky, becoming splintery in part down section, micromicaceous, organic / bituminous, as above, slickensided, poorly developed microfractures (<1%) disaggregated spar, microfractures lined with white and light greyish white cryptocrystalline, upper fine and upper medium crystalline calcite spar, rare amounts of upper medium to upper coarse crystalline silica spar, rare amounts of black organic residue encrusting crystal faces of spar, rare amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	02	MARLSTONE – medium brownish grey, dolomitic, silty, pyritic, as above, well indurated.
	Trace	METAL
	Trace	SILTSTONE – medium to dark grey, grading to dark greyish black, as above, pyritic, well indurated.
2562.5 – 2565	96	SHALE – medium grey, grading to dark grey, subfissile, micromicaceous, slickensided in small part, poorly developed microfractures – trace amounts of disaggregated spar, microfractures lined with white and light greyish white cryptocrystalline, upper fine and upper coarse crystalline calcite spar, rare amounts of upper medium to upper coarse crystalline silica spar, rare amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	04	MARLSTONE – medium brownish grey, dolomitic, silty, siliceous in part, pyritic, as above, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2565 – 2567.5	100	SHALE – medium grey, grading to dark grey, subfissile, micromicaceous, slickensided in small part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	Trace	MARLSTONE – medium brownish grey, dolomitic, silty, siliceous in part, pyritic, as above, well indurated.
2567.5 – 2572.5	99-100	SHALE – medium grey, grading to dark grey, subfissile, organic / bituminous in small part, rare amounts of very thin black organic microlaminations, slickensided in small part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline calcite spar, rare amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	Trace-01	METAL
2572.5 – 2575	99-100	SHALE – medium grey, grading to dark grey, subfissile, organic / bituminous in small part, rare amounts of very thin black organic microlaminations, slickensided in small part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, rare lower coarse size pyrite grains, slightly dolomitic, well indurated.
	Trace-01	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2575 – 2577.5	99-100	SHALE – medium grey, grading to dark grey, subfissile, common fissile, organic / bituminous in small part, rare amounts of very thin black organic microlaminations, slickensided in small part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline silica and rare calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	Trace-01	METAL
2577.5 – 2580	100	SHALE – medium grey, grading to dark grey, subfissile, organic / bituminous in small part, rare amounts of very thin black organic microlaminations, slickensided in small part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline silica and rare calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	Trace	MARLSTONE – medium greyish brown, dolomitic, pyritic, well indurated.
	Trace	SILTSTONE – dark grey, grading to black, quartzose, minor black mica flakes, silica and rare calcite cement, bituminous, pyritic, well indurated.
	Trace	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2580 – 2585	96	SHALE – medium grey, grading to dark grey, occasional black, subfissile, minor fissile, organic / bituminous in part, becoming more organic in this interval, occasional to minor amounts of very thin black organic microlaminations – generally increasing in proportion down section, slickensided in part, poorly developed microfractures – (<1%) disaggregated spar, microfractures lined with white and light greyish white cryptocrystalline silica and calcite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, slightly dolomitic, well indurated.
	02	CLAYSTONE – medium to dark brown, organic, very bentonitic, poorly indurated.
	01	MARLSTONE – medium greyish tan, grading to medium greyish brown, dolomitic, pyritic, becoming siliceous down section, well indurated.
	01	SILTSTONE – dark grey, grading to black, quartzose, minor black mica flakes, silica and rare calcite cement, bituminous, pyritic, well indurated.
	Trace	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2585 – 2587.5	100	SHALE – medium grey, grading to dark grey, occasional black, subfissile, minor fissile, organic / bituminous in part, generally as above, becoming increasingly micromicaceous, occasional to minor amounts of very thin black organic microlaminations, slickensided in part, poorly developed microfractures, microfractures lined with white and light greyish white cryptocrystalline to upper fine crystalline calcite and fibrous chlorite spar, occasional amounts of disseminated and micro pyrite dispersed throughout, silty in part, slightly dolomitic, well indurated.
2587.5 – 2592.5	100	SHALE – medium grey, grading to dark grey, rare black, subfissile, minor fissile, organic / bituminous in part, generally as above, occasional amounts of very thin black organic microlaminations, slickensided in part, poorly developed microfractures, microfractures lined with white and light greyish white coarse crystalline calcite spar and upper fine crystalline silica spar, rare very fine crystalline pyrite clusters, rare amounts of disseminated and micro pyrite dispersed throughout, becoming more pyritic down section, silty in part, well indurated.
2592.5 – 2595	100	SHALE – medium grey, grading to dark grey, rare black, subfissile, minor fissile, organic / bituminous in part, generally as above, occasional amounts of very thin black organic microlaminations with associated micro pyrite veining, slickensided in part, poorly developed microfractures (<1% disaggregated spar), microfractures lined with white and light greyish white cryptocrystalline silica spar and rare very fine crystalline calcite spar, rare very fine crystalline pyrite clusters, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2595 – 2597.5	97	SHALE – medium grey, rare dark grey, subfissile, minor fissile, slightly organic / bituminous in part, rare amounts of very thin black organic microlaminations and streaks, slickensided in part, poorly developed microfractures (<1% disaggregated spar), microfractures lined with white cryptocrystalline calcite spar and rare amounts of fibrous light greyish green chlorite, rare amounts of disseminated and micro pyrite dispersed throughout, well indurated.
	03	CLAYSTONE – medium grey, very bentonitic, poorly indurated.
2597.5 – 2600	98	SHALE – medium grey, grading to dark grey in small part, subfissile, organic / bituminous in part, occasional amounts of very thin black organic microlaminations, becoming slightly more organic in this interval, slickensided in part, poorly developed microfractures (rare disaggregated spar), microfractures lined with white and light greyish white cryptocrystalline calcite spar and rare light greyish green chlorite, rare amounts of disseminated and micro pyrite dispersed throughout, slight increase in pyrite in this interval, well indurated.
	02	SILTSTONE – medium to dark grey, quartzose, rare black organic streaks, silica cement, pyritic, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2600 – 2602.5	98	SHALE – medium grey, grading to medium brownish grey in small part, occasional dark grey, subfissile, organic / bituminous, generally as above, becoming sideritic in small part, slickensided in part, poorly developed microfractures (rare disaggregated spar), microfractures lined with white and light greyish white cryptocrystalline calcite spar and rare light greyish green chlorite, occasional amounts of disseminated and micro pyrite dispersed throughout, locally occasional amounts of very fine crystalline pyrite clusters, rare fossil fragments – brachiopod, well indurated.
	02	SILTSTONE – medium grey, grading to medium brownish grey, quartzose, rare black organic streaks, silica cement, pyritic, well indurated.
2602.5 – 2607.5	100	SHALE – medium grey, occasional dark grey, subfissile, organic / bituminous in part, generally as above, slickensided in part, poorly developed microfractures (rare disaggregated spar), microfractures lined with white and light greyish white cryptocrystalline calcite spar and rare light greyish green chlorite, occasional amounts of disseminated and micro pyrite dispersed throughout, locally occasional amounts of very fine crystalline pyrite clusters, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2607.5 – 2610	98	SHALE – medium grey, occasional dark grey, rare black, subfissile, organic / bituminous in part, minor amounts of thin black organic microlaminations, slickensided, moderately developed microfractures – (<2% disaggregated spar), fracture planes lined with white cryptocrystalline silica spar, occasional amounts of medium crystalline calcite spar, fracture planes brecciated – floating upper coarse to upper very coarse size dark shale lithic fragments, becoming more pyritic in this interval, well indurated.
	02	CLAYSTONE – medium grey, very bentonitic, poorly indurated.
2610 – 2612.5	100	SHALE – medium grey, occasional dark grey, rare black, subfissile, organic / bituminous in part, minor amounts of thin black organic microlaminations, slickensided, poorly developed microfractures – (<1% disaggregated spar), fracture planes lined with white cryptocrystalline silica spar, occasional amounts of medium crystalline calcite spar, fracture planes brecciated – floating upper coarse to upper very coarse size dark shale lithic fragments, rare disseminated and micro pyrite, well indurated.
	Trace	CLAYSTONE – medium grey, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2612.5 – 2615	98	SHALE – medium grey, occasional dark grey, rare black, subfissile, organic / bituminous in part, minor amounts of thin black organic microlaminations, slickensided, well developed microfractures – (<10% disaggregated spar), fracture planes lined with white cryptocrystalline silica spar, rare amounts of fine to medium crystalline calcite spar, fracture planes brecciated – floating upper coarse to upper very coarse size dark shale lithic fragments, rare amounts of pyrite veining, disseminated and micro pyrite, well indurated.
	02	CLAYSTONE – light and medium grey, very bentonitic, poorly indurated.
2615 – 2617.5	99	SHALE – medium and dark grey, occasional black, subfissile, proportion of organic / bituminous content increasing in this interval, minor amounts of thin black organic microlaminations, slickensided, moderately developed microfractures – (<3% disaggregated spar), fracture planes lined with white cryptocrystalline silica spar, rare amounts of fine to medium crystalline calcite spar, fracture planes brecciated – floating upper coarse to upper very coarse size dark shale lithic fragments, rare amounts of pyrite veining, disseminated and micro pyrite, well indurated.
	01	CLAYSTONE – light and medium grey, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2617.5 – 2620	100	SHALE – medium grey, grading to medium brownish grey, subfissile, minor fissile, sideritic in part, organic / bituminous in part, rare amounts of thin black organic microlaminations, slickensided, moderately to well developed microfractures – (<5% disaggregated spar), locally fracture planes are intersecting, fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline to occasional coarse crystalline anhedral silica spar, rare amounts of fine to medium crystalline calcite spar, fracture planes brecciated – floating upper coarse to upper very coarse size medium grey shale lithic fragments, rare amounts of pyrite veining, disseminated and micro pyrite, well indurated.
2620 – 2622.5	100	SHALE – medium grey, grading to dark grey, subfissile, minor fissile, splintery in part, organic / bituminous in part, occasional amounts of thin black organic microlaminations, slickensided, moderately to well developed microfractures – (<5% disaggregated spar), locally fracture planes are intersecting, fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline to occasional upper medium crystalline anhedral silica spar, fracture planes brecciated – floating upper coarse to upper very coarse size medium grey shale lithic fragments, rare amounts of disseminated and micro pyrite, well indurated.
2622.5 – 2625	100	SHALE – medium grey, grading to medium brownish grey, subfissile, sideritic in part, organic / bituminous in part, rare amounts of thin black organic microlaminations, slickensided, moderately developed microfractures – (<3% disaggregated spar), locally fracture planes are intersecting, fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline to occasional upper medium crystalline anhedral silica spar, fracture planes brecciated – floating upper coarse to upper very coarse size medium grey shale lithic fragments, rare amounts of pyrite veining, disseminated and micro pyrite, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2625 – 2627.5	100	SHALE – medium grey, subfissile, occasional blocky, micromicaceous, slightly organic / bituminous in part, rare amounts of thin black organic microlaminations, slickensided, poorly developed microfractures – (1% disaggregated spar), fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline to occasional upper fine crystalline anhedral silica spar, slightly dolomitic, rare amounts of pyrite veining, disseminated and micro pyrite, well indurated.
2627.5 – 2630	100	SHALE – medium grey, subfissile, occasional blocky, micromicaceous, generally as above, slightly dolomitic, slight increase in proportion of pyrite in this interval, well indurated.
2630 – 2632.5	100	SHALE – medium grey, grading to dark grey, subfissile, micromicaceous, slightly organic / bituminous in part, rare amounts of thin black organic microlaminations, slickensided, moderately developed microfractures – (<3% disaggregated spar), fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline to occasional upper coarse to upper very coarse crystalline anhedral silica spar, rare amounts of off white upper very fine crystalline calcite spar, slightly dolomitic, rare amounts of disseminated and micro pyrite, well indurated.
2632.5 – 2635	97	SHALE – medium grey, subfissile, micromicaceous, slightly organic / bituminous in part, rare amounts of thin black organic microlaminations, slickensided, poorly developed microfractures – (<1% disaggregated spar), fracture planes lined with light greyish green fibrous chlorite, and white cryptocrystalline silica spar, rare amounts of off white cryptocrystalline calcite spar, slightly dolomitic, rare amounts of disseminated and micro pyrite, well indurated.
	03	CLAYSTONE – light grey, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2635 – 2637.5	75	SHALE – medium grey, grading to medium brownish grey, subfissile, minor blocky, slickensided, poorly developed microfractures – (rare disaggregated spar), fracture planes lined with light greyish white and white cryptocrystalline silica spar, dolomitic, rare amounts of disseminated and micro pyrite, well indurated.
	15	CLAYSTONE – light grey, grading to light and medium brownish grey, very bentonitic, poorly indurated.
	10	MARLSTONE – medium brownish grey, lithographic, dolomitic, siliceous, very well indurated.
2637.5 – 2640	90	SHALE – medium grey, grading to medium brownish grey, subfissile, minor fissile and splintery, occasional blocky, organic / bituminous, occasional amounts of black organic microlaminations throughout, poorly developed microfractures – (rare disaggregated spar), fracture planes lined with light greyish white and white cryptocrystalline silica spar, dolomitic, rare amounts of disseminated and micro pyrite, well indurated.
	05	CLAYSTONE – light grey, grading to light and medium brownish grey, very bentonitic, poorly indurated.
	05	MARLSTONE – medium brownish grey, lithographic, dolomitic, siliceous, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2640 – 2642.5	95	SHALE – medium grey, subfissile, micromicaceous, slightly organic / bituminous, rare amounts of black organic microlaminations throughout, no evidence of microfractures, dolomitic, rare amounts of disseminated and micro pyrite, well indurated.
	05	CLAYSTONE – light grey, grading to light and medium brownish grey, very bentonitic, poorly indurated.
2642.5 – 2645	100	SHALE – medium grey, grading to dark grey in part, subfissile, minor blocky, organic / bituminous in part, rare amounts of black organic microlaminations throughout, poorly developed microfractures – (rare disaggregated spar), fracture planes lined with light greyish white and white cryptocrystalline silica spar, dolomitic, rare amounts of disseminated and micro pyrite, rare very fine crystalline pyrite clusters, rare upper coarse size pyrite grains, well indurated.
	Trace	CLAYSTONE – light grey, grading to light and medium brownish grey, very bentonitic, poorly indurated.
2645 – 2647.5	70	SHALE – medium grey, grading to dark grey in part, subfissile, organic / bituminous in part, rare amounts of black organic microlaminations throughout, poorly developed microfractures – (rare disaggregated spar), fracture planes lined with light greyish white and white cryptocrystalline silica spar, dolomitic, increase in proportion of pyrite in this interval, occasional amounts of disseminated and micro pyrite, rare very fine crystalline pyrite clusters, rare upper medium to upper coarse size pyrite grains, well indurated.
	30	CLAYSTONE – light grey, grading medium grey, very bentonitic, locally very pyritic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2647.5 – 2650	63	CLAYSTONE – light grey, grading light brownish grey, very bentonitic, locally pyritic, poorly indurated.
	35	SHALE – medium grey, grading to dark grey in part, subfissile, organic / bituminous in part, rare amounts of black organic microlaminations throughout, poorly developed microfractures – (rare disaggregated spar), fracture planes lined with light greyish white and white cryptocrystalline silica spar, locally micro fracture planes are intersecting, dolomitic, rare amounts of disseminated and micro pyrite, rare very fine crystalline pyrite clusters, rare upper coarse size pyrite grains, well indurated.
	02	MARLSTONE – medium brownish grey, dolomitic, siliceous, very well indurated.
2650 – 2652.5	96	SHALE – medium grey and medium brownish grey, subfissile, minor blocky, micromicaceous, dolomitic, becoming increasingly dolomitic in this interval, no evidence of microfracturing, rare amounts of disseminated and micro pyrite, well indurated.
	02	CLAYSTONE – light grey, grading light brownish grey, very bentonitic, locally pyritic, poorly indurated.
	02	MARLSTONE – medium brownish grey, dolomitic, siliceous, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2652.5– 2655	98	SHALE – medium grey, minor dark grey and medium brownish grey, subfissile, minor blocky, micromicaceous, dolomitic, no evidence of microfracturing, rare amounts of disseminated and micro pyrite, well indurated.
	02	CLAYSTONE – light grey, grading light brownish grey, very bentonitic, locally pyritic in small part, poorly indurated.
2655– 2657.5	99	SHALE – medium and dark grey, subfissile, micromicaceous, organic / bituminous, minor amounts of black organic microlaminations throughout, slickensided in part, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, white to light greyish white upper coarse to upper very coarse crystalline calcite spar, and cryptocrystalline to upper very fine crystalline silica spar, slightly dolomitic, rare to occasional amounts of disseminated and micropyrite, upper medium size pyrite grains, well indurated.
	01	CLAYSTONE – light brownish grey, very bentonitic, locally pyritic in small part, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2657.5 – 2660	99	SHALE – medium and dark grey, subfissile, micromicaceous, slightly organic / bituminous, rare amounts of black organic microlaminations, less organic in this interval, slickensided in part, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, white to light greyish white upper coarse to upper very coarse crystalline calcite spar, and cryptocrystalline to upper very fine crystalline silica spar, microfracture planes are brecciated to a high degree – common floating upper medium to upper coarse size medium to dark grey shale lithic fragments, rare amounts of disseminated and micropyrite, upper medium size pyrite grains, well indurated.
	01	MARLSTONE - light to medium brownish grey, calcareous, siliceous, well indurated.
2660 – 2662.5	99	SHALE – medium and dark grey, rare black, subfissile, micromicaceous, becoming more organic / bituminous, rare to occasional amounts of thin black organic microlaminations, slickensided in part, poorly to moderately developed microfractures (<2% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral white to light greyish white upper medium to occasional upper very coarse crystalline silica and minor dolomite spar, and cryptocrystalline to upper very fine crystalline silica spar, microfracture planes are brecciated to a high degree – as above, rare amounts of disseminated and micropyrite, well indurated.
	01	MARLSTONE - light to medium brownish grey, calcareous, siliceous, well indurated.
	Trace	CLAYSTONE – light grey and light greenish grey, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2662.5 – 2665	98	SHALE – medium and dark grey, rare black, subfissile, micromicaceous, generally as above, slight increase in slickensides, poorly to moderately developed microfractures (<2% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral to subhedral white to light greyish white upper medium to upper very coarse crystalline silica spar, locally displaying radial truncated prisms, rare amounts of cryptocrystalline to upper very fine crystalline calcite spar, microfracture planes are brecciated to a high degree – as above, rare amounts of convolute organic rich microstyloids within the spar, rare amounts of disseminated and micropyrite, well indurated.
	02	CLAYSTONE – medium grey, very bentonitic, poorly indurated.
	Trace	MARLSTONE - light to medium brownish grey, calcareous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2665 – 2668	98-99	SHALE – dark grey, grading to medium grey in part, rare black, subfissile, minor blocky and fissile, organic / bituminous, becoming more organic in this interval, slickensided, poorly to moderately developed microfractures (<1%-2% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral to subhedral white to light greyish white upper fine to upper very coarse crystalline silica spar, rare amounts of cryptocrystalline to upper very fine crystalline calcite spar, microfracture planes are brecciated to a high degree – as above, rare amounts of disseminated and micropyrite, rare amounts of upper coarse size pyrite grains, well indurated.
	01-02	CLAYSTONE – medium brownish grey, very bentonitic, poorly indurated.
2668 – 2670	100	SHALE – medium and dark grey, rare black, subfissile, minor fissile, organic / bituminous as above, slickensided, moderately developed microfractures (<3% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral to subhedral white to light greyish white upper fine to upper coarse crystalline silica spar, rare amounts of coarse crystalline dolomite spar, microfracture planes are brecciated to a high degree – as above, rare amounts of disseminated and micropyrite, well indurated.
2670 – 2672.5	100	SHALE – medium and dark grey, subfissile, becoming less organic / bituminous in this interval, slickensided, poorly to moderately developed microfractures (<2% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral to subhedral white to light greyish white upper fine to upper coarse crystalline silica spar, minor amounts of coarse crystalline calcite spar, microfracture planes are brecciated to a high degree – as above, rare amounts of disseminated and micropyrite, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2672.5 – 2677.5	95	SHALE – medium brownish grey and dark grey, rare black, subfissile, minor blocky, organic / bituminous, minor amounts of very thin black organic microlaminations, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined with light greenish grey resinous chlorite, anhedral to subhedral white to light greyish white upper fine to upper coarse crystalline silica spar, rare amounts of medium crystalline calcite spar, rare amounts of disseminated and micropyrite and pyrite clusters, bentonitic in part, well indurated.
	05	CLAYSTONE – medium brownish grey, rare amounts of very thin black organic microlaminations, very bentonitic in part, poorly indurated.
2677.5 – 2678.6	99	SHALE – medium and dark grey, rare black, subfissile, minor blocky and splintery, organic / bituminous, minor amounts of very thin black organic microlaminations, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined generally as above, with rare amounts of upper fine crystalline dolomite spar, rare amounts of disseminated and micropyrite and pyrite clusters, bentonitic in part, well indurated.
	01	SILTSTONE – medium brownish grey and medium grey, quartzose, silica cement, rare amounts of dolomite cement, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2678.6 – 2680	98	SHALE – medium brownish grey and dark grey, rare black, subfissile, minor blocky, sideritic, organic / bituminous, minor amounts of very thin black organic microlaminations, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined generally as above, with rare amounts of upper fine crystalline dolomite spar, rare amounts of disseminated and micropyrite and pyrite clusters, bentonitic in part, well indurated.
	01	SILTSTONE – medium brownish grey and medium grey, quartzose, abundant silica cement, rare amounts of dolomite cement, very well indurated.
	01	MARLSTONE – medium brownish grey, very siliceous, dolomitic, very well indurated.
2680 – 2682	100	SHALE – medium brownish grey and dark grey, occasional black, subfissile, minor blocky, sideritic, becoming increasingly organic / bituminous in this interval, minor amounts of very thin black organic microlaminations, poorly developed microfractures (<1% disaggregated spar), microfracture planes lined with upper medium to upper very coarse crystalline anhedral silica spar, rare amounts of microcrystalline calcite spar and light greenish grey fibrous chlorite, rare amounts of disseminated and micropyrite , bentonitic in part, well indurated.
2682 – 2683	97	SHALE – medium to dark grey, grading to medium brownish grey, rare black, subfissile, minor blocky, organic / bituminous, generally as above, sideritic, microfractured as above, well indurated.
	03	MUD ADDITIVE (Barite and Lignite)

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2683 – 2685	100	SHALE – medium brownish grey, grading to medium grey, occasional amounts of dark grey, rare black, subfissile, minor blocky, organic / bituminous in part, locally common amounts of very thin black organic microlaminations, poorly developed microfracturing, rare amounts of very thin intersecting microfractures, rare amounts (<1% disaggregated spar) upper coarse to lower very coarse anhedral silica spar, microfractures lined / sealed with light greyish white to white cryptocrystalline silica spar, becoming increasingly sideritic in this interval, rare amounts of disseminated pyrite and micro pyrite, well indurated.
2685 – 2687.5	100	SHALE – medium grey, grading to medium brownish grey and dark grey, rare black, subfissile, minor blocky, organic / bituminous in part, locally common amounts of very thin black organic microlaminations, poorly developed microfracturing, rare amounts of very thin intersecting microfractures, rare amounts (<1% disaggregated spar) upper coarse to lower very coarse anhedral silica spar, microfractures lined / sealed with light greyish white to white cryptocrystalline silica spar, sideritic – as above, rare amounts of disseminated pyrite and micro pyrite, well indurated.
2687.5 – 2688	100	SHALE – medium grey and medium brownish grey, frequently grading to dark grey, rare black, subfissile, minor blocky, organic / bituminous in part, locally common amounts of very thin black organic microlaminations, organic microlaminations increasing slightly in this interval, no evidence of microfracturing, sideritic – as above, locally becoming dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2688 – 2689	100	SHALE – medium to dark grey, minor medium brownish grey, rare black, subfissile, minor blocky, organic / bituminous in part, occasional amounts of very thin black organic microlaminations, organic microlaminations decreasing in this interval, poorly developed microfractures sealed with clear microcrystalline to lower fine crystalline silica spar, locally sideritic, occasional amounts of disseminated pyrite and micro pyrite, and rare amounts of upper very fine crystalline pyrite clusters, well indurated.
2689 – 2690	100	SHALE – medium grey, minor dark grey, subfissile, minor fissile, slightly organic / bituminous in part, rare amounts of very thin black organic microlaminations, organic laminations decreasing in this interval, poorly developed microfractures, locally sealed with off white to white cryptocrystalline calcite spar and lower to upper fine crystalline silica spar, microfractures are brecciated exhibiting floating medium to dark grey upper coarse size subangular and angular shale lithic fragments, sideritic, rare amounts of disseminated pyrite and micro pyrite, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2690 - 2695	100	SHALE - medium grey, minor dark grey, occasional amounts of medium brownish grey and rare black, subfissile, minor blocky, slightly organic / bituminous in part, rare amounts of very thin black organic microlaminations, generally decreasing in proportion down section, becoming very silicified throughout this interval - silicification increasing down section over this interval, exhibiting a lithographic and very finely laminated texture to a small degree, locally poorly to rare moderately developed microfractures (<1% disaggregated spar), where developed microfracture planes exhibit a brecciated texture - floating medium to dark grey angular to subangular upper medium to upper coarse size shale lithic fragments, microfractures are predominantly sealed with off white to occasional amounts of clear cryptocrystalline silica spar, occasional amounts of upper very fine silica spar, and rare amounts of white cryptocrystalline calcite spar, sideritic, rare amounts of disseminated pyrite and micro pyrite, rare amounts of pyrite clusters - upper very fine crystalline, and rare amounts of pyrite replacement of fossil skeletal detritus, very well indurated

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2695 - 2697.5	97	SHALE – medium brownish grey, grading to dark grey in small part, occasional black, subfissile, minor blocky, generally as above, slight decrease in silicification in this interval, generally more silicification is evident within the darker colored portions, locally poorly to rare moderately developed microfractures (<1% disaggregated spar), where developed microfracture planes are intersecting and exhibit a brecciated texture – floating medium brownish grey subangular to subrounded upper medium to upper coarse size shale lithic fragments, microfractures are predominantly sealed with off white to occasional amounts of clear cryptocrystalline to upper medium crystalline silica spar, rare amounts of white cryptocrystalline calcite spar , sideritic in large part, rare amounts of disseminated pyrite and micro pyrite, very well indurated.
	03	MARLSTONE – medium brown, very silicified, locally extensively microfractured – micro fractures are brecciated – as above, sealed with clear to light grey cryptocrystalline to lower very fine crystalline silica spar, very well indurated.
2697.5 - 2700	95	SHALE – medium brownish grey, grading to dark grey in small part, subfissile, minor blocky, generally as above, increase in proportion of silicification in this interval, locally poorly to rare moderately developed microfractures (<2% disaggregated spar), where developed microfracture planes exhibit a brecciated texture – floating medium brownish grey to dark grey subangular to subrounded upper medium size shale lithic fragments, microfractures are sealed with off white to occasional amounts of clear cryptocrystalline to upper fine crystalline silica spar, occasional amounts of white cryptocrystalline calcite spar, proportion of calcite spar increasing in this interval, rare amounts of disseminated pyrite and micro pyrite, very well indurated.
	05	MARLSTONE – medium brown grading to medium grey, very silicified, dolomitic (?), locally extensively microfractured – as above, very well indurated.

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SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2705 – 2707.5	95	SHALE – dark grey, grading to medium grey and black in part, blocky, minor subfissile, organic / bituminous in part, occasional black organic microlaminations throughout, slightly dolomitic, varyingly silicified, more silicified in this interval, pyritic in part, excellent microfracture and fracture development throughout (<35% disaggregated spar), microfractures are irregular intersecting and convolute, exhibiting a high degree of brecciated texture, microfractures are sealed with light greyish white and white cryptocrystalline to minor upper very fine crystalline silica spar, and occasional amounts of light and medium greenish grey fibrous chlorite and rare amounts of pyrite, fracture planes are lined with predominantly upper medium to upper very coarse crystalline truncated anhedral to subhedral white and light greyish white silica spar, and rare amounts of off white to very light beige upper medium to upper coarse crystalline truncated anhedral dolomite and calcite spar, occasional amounts of disseminated pyrite and micro pyrite, and upper very fine crystalline pyrite clusters, good fracture porosity, very well indurated.
	04	METAL
	01	MARLSTONE – medium brown, becoming organic in small part, very silicified, dolomitic (?), locally extensively microfractured – as above, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2700 – 2705	92-93	SHALE – dark grey, grading to medium grey, occasional black, subfissile, minor fissile, generally as above, organic / bituminous in part, occasional black organic microlaminations throughout, generally less organic down section in this interval, decrease in proportion of silicification in this interval, locally poorly to rare moderately developed microfractures (< 1%-3% disaggregated spar), proportion of spar decreasing down section, microfracture planes exhibit brecciated texture as above, microfractures are sealed with light greyish white and white cryptocrystalline to minor upper very fine crystalline silica spar, occasional amounts of upper medium to upper very coarse crystalline calcite spar, rare amounts of cryptocrystalline to upper very fine crystalline dolomite spar, becoming slightly dolomitic in part, rare amounts of disseminated pyrite and micro pyrite, and upper very fine crystalline pyrite clusters, very well indurated.
	04-05	MARLSTONE – medium brown, becoming organic in small part, very silicified, dolomitic (?), locally extensively microfractured – as above, very well indurated.
	03	METAL

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2707.5 – 2710	97	SHALE – dark grey, grading to very dark grey, minor black in part, subfissile, minor fissile and blocky, organic / bituminous in part, minor to occasional black organic microlaminations throughout, slightly dolomitic, varyingly silicified, less silicified in this interval, pyritic in part, good to excellent microfracture and fracture development throughout (<20% disaggregated spar), microfracture are generally as above, exhibiting a high degree of brecciated texture, microfracture planes are predominantly sealed with light greyish white to clear and white cryptocrystalline to minor upper very fine crystalline silica spar, occasional amounts of off white to very light brownish grey upper coarse to upper very coarse crystalline dolomite spar, rare amounts of light and medium greenish grey fibrous chlorite and rare amounts of pyrite, fracture planes are lined with predominantly upper medium to upper very coarse crystalline truncated anhedral to subhedral white and light greyish white silica spar, and occasional amounts of off white to very light beige upper medium to upper coarse crystalline truncated anhedral dolomite spar, proportion of dolomite spar is increasing in this interval, occasional amounts of disseminated pyrite and micro pyrite, and upper very fine crystalline pyrite clusters, good fracture porosity, very well indurated.
	02	METAL
	01	MARLSTONE – medium brown, becoming organic in small part, very silicified, dolomitic (?), locally extensively microfractured – as above, very well indurated.
	Trace	DOLOMITE – very light brown and very light tan, upper fine to upper medium crystalline, occasional amounts of lower coarse crystalline, silicified throughout, pyritic in part, rare amounts of dark brown organic specks encrusting intercrystalline voids (bitumen plugging), rare amounts of dark brownish black organic streaks on rhomb surfaces, no effective porosity.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2710 - 2712.5	95	SHALE – dark grey, grading to medium grey in large part, rare black in part, subfissile, minor fissile and blocky, organic / bituminous in part, minor to occasional black organic microlaminations throughout, slightly dolomitic, silicified, more silicified in this interval, pyritic in part, moderate microfracture and fracture development throughout (<10% disaggregated spar), microfractures are generally as above, slight increase in calcite spar presence, occasional amounts of disseminated pyrite and micro pyrite, and upper very fine crystalline pyrite clusters, rare indistinct fossil skeletal detritus, poor fracture porosity, very well indurated.
	02	METAL
	02	MARLSTONE – medium brown, becoming organic in small part, very silicified, dolomitic (?), locally extensively microfractured – as above, very well indurated.
	01	SILTSTONE – medium to dark grey, quartzose, abundant silica cement, organic in large part, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2712.5 – 2715	96	SHALE – medium to dark grey, subfissile, occasional fissile, micromicaceous, slickensided in part, organic / bituminous in part, minor to occasional black organic microlaminations throughout, pyritic in part, poor microfracture development throughout (<1% disaggregated spar), microfractures are generally as above, slight increase in calcite spar presence, occasional amounts of disseminated pyrite and micro pyrite, well indurated.
	02	MARLSTONE – medium brown, very silicified, pyritic in small part, very well indurated.
	02	METAL
2715 – 2717.5	92	SHALE – dark grey, minor medium grey, subfissile, occasional fissile, micromicaceous, slickensided, organic / bituminous, minor black organic microlaminations throughout, pyritic in part, poor microfracture development throughout (<1% disaggregated spar), microfractures are generally as above, dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	05	METAL
	03	MARLSTONE - medium brown, very silicified, very silty, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2717.5 – 2720	97	SHALE – medium and dark grey, subfissile, micromicaceous, slickensided in small part, organic / bituminous in part, occasional black organic microlaminations throughout, pyritic in part, rare light grey and light brown bentonitic claystone laminae, poor microfracture development throughout (<1% disaggregated spar), microfractures are generally as above, dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	MARLSTONE – medium grey, very siliceous, silty, very well indurated.
	Trace	METAL
2720 – 2722.5	95	SHALE – medium grey, grading to medium brownish grey and dark grey, subfissile to fissile, splintery in part, micromicaceous, slickensided in small part, organic / bituminous in part, occasional black organic microlaminations throughout, silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline to upper very fine crystalline white silica spar, slightly dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	MARLSTONE – medium brown, lithographic, siliceous, very well indurated.
	02	SILTSTONE – medium grey, occasional medium brownish grey, quartzose, silica cement, very well indurated.
	Trace	METAL

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CDN FOREST et al NORTH LIARD C-31 / C-31A 60-40-123-30

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2722.5 – 2725	96	SHALE – dark grey, grading to medium grey, subfissile to fissile, minor blocky, micromicaceous, slickensided in small part, organic / bituminous in part, occasional black organic microlaminations throughout, silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline to upper fine crystalline white silica spar, slightly dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	METAL
	01	MARLSTONE – medium brown, lithographic, dolomitic, siliceous in part, very well indurated.
2725 – 2727.5	95	SHALE – medium grey, grading to dark grey, subfissile, minor blocky, micromicaceous, slickensided in part, organic / bituminous in part, occasional black organic microlaminations throughout, silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline to upper fine crystalline white silica spar, slightly dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	METAL
	01	MARLSTONE – medium brown, lithographic, dolomitic, siliceous in part, very well indurated.
	01	SILTSTONE – medium to dark grey, quartzose, abundant silica cement, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2727.5 – 2730	95	SHALE – medium grey, grading to dark grey, subfissile, occasional blocky, micromicaceous, slickensided in part, organic / bituminous in part, occasional black organic microlaminations throughout, silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline white silica spar, and occasional amounts of upper very fine to lower fine crystalline light greyish white calcite spar, rare amounts of off white cryptocrystalline dolomite spar, slightly dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	05	SILTSTONE – medium grey, minor amounts of dark grey, quartzose, abundant silica cement, pyritic in small part, very well indurated.
	Trace	METAL
	Trace	MARLSTONE – medium brown, grading to medium grey, lithographic, very siliceous, dolomitic (?), very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2730 – 2732.5	97	SHALE – medium and dark grey, grading to black in small part, subfissile, minor fissile and minor blocky, micromicaceous, slickensided in part, becoming increasingly organic / bituminous in part, minor black organic microlaminations throughout, silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline to upper medium crystalline anhedral truncated off white to light greyish silica spar, and occasional amounts of upper very fine to lower fine crystalline light greyish white dolomite spar, slightly dolomitic, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	02	MARLSTONE – medium brown, grading to dark brown, lithographic, very siliceous, dolomitic (?), very well indurated.
	01	SILTSTONE – medium grey, minor amounts of dark grey, quartzose, abundant silica cement, pyritic in small part, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2732.5 – 2735	92	SHALE – medium and dark grey, subfissile, minor blocky, micromicaceous, organic / bituminous in part, minor black organic microlaminations throughout, locally very silicified in part, poor microfracture development throughout (<1% disaggregated spar), microfractures lined with cryptocrystalline to upper fine crystalline anhedral truncated off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	07	SILTSTONE – medium grey, minor amounts of dark grey, quartzose, abundant silica cement, pyritic in small part, very well indurated.
	01	MARLSTONE – medium brown, grading to dark brown, lithographic, very siliceous, dolomitic (?), very well indurated.
2735 – 2740	95-97	SHALE – medium and dark grey, rare amounts of black, subfissile and blocky, splintery in part, organic / bituminous in part, minor black organic microlaminations throughout, slickensided, locally very silicified in part, poor to moderately developed microfractures throughout (<2% disaggregated spar), locally microfractures exhibit a very finely laminated texture, locally very brecciated, microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica and calcite spar, occasional amounts of upper coarse to upper very coarse anhedral truncated silica spar, rare amounts of light greenish grey fibrous chlorite, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03-05	SILTSTONE – dark grey, quartzose, abundant silica cement, becoming more pyritic down section, very well indurated.
	Trace	MARLSTONE – medium brown, grading to dark brown, lithographic, very siliceous, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2740 – 2745	92-95	SHALE – medium grey, minor dark grey, rare amounts of black, subfissile, organic / bituminous in part, minor black organic microlaminations throughout, slickensided, locally very silicified in part, poor to moderately developed microfractures throughout (<2% disaggregated spar), locally microfractures exhibit a very finely laminated texture, microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica and calcite spar, rare amounts of light greenish grey fibrous chlorite, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03-05	MARLSTONE – medium brown, grading to dark brown, lithographic, very siliceous, locally common microfracture swarms sealed with light greyish white cryptocrystalline calcite, very well indurated.
	Trace-01	SILTSTONE – dark grey, quartzose, abundant silica cement, becoming more pyritic down section, very well indurated.
	Trace-01	CLAYSTONE – medium brown, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2745 – 2747.5	92	SHALE – medium grey, minor dark grey, subfissile, occasional fissile, slickensided in small part, locally silicified in part, becoming less silicified in this interval, dolomitic, poorly developed microfractures (<1% disaggregated spar), locally microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica and calcite spar, rare amounts of light greenish grey fibrous chlorite, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	05	MARLSTONE – medium brown, lithographic, very siliceous, poorly developed microfractures sealed with light greyish white cryptocrystalline calcite, very well indurated.
	03	SILTSTONE – medium brown, medium brownish grey, dark grey, quartzose, abundant silica cement, very well indurated.
	Trace	CLAYSTONE – medium brown, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2747.5 – 2750	85	SHALE – medium grey, minor dark grey, grading to medium brownish grey, rare black, subfissile, occasional fissile, slickensided in small part, locally silicified in part, dolomitic, poorly developed microfractures (<1% disaggregated spar), locally microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica and calcite spar, rare amounts of light greenish grey fibrous chlorite, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	10	MARLSTONE – medium brown, grading to medium tan, lithographic, dolomitic, very siliceous, poorly developed microfractures sealed with light greyish white cryptocrystalline silica, very well indurated.
	05	SILTSTONE – medium brown, medium brownish grey and medium grey, quartzose, abundant silica cement, minor dolomite cement, locally pyritic, very well indurated.
	Trace	CLAYSTONE – medium brown, very bentonitic, poorly indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2750 – 2755	84-90	SHALE – medium grey, minor dark grey, grading to medium brownish grey, rare black, subfissile, occasional fissile, slickensided in small part, locally silicified in part, dolomitic, poorly developed microfractures (<1% disaggregated spar), locally microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica spar, rare amounts of light greenish grey fibrous chlorite, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	07-08	MARLSTONE – medium brownish grey, grading to light and medium tan, very silty, lithographic, dolomitic, very siliceous, very well indurated.
	03-08	SILTSTONE – medium brownish grey and medium grey, quartzose, abundant silica cement, minor dolomite cement, locally pyritic, proportion of siltstone decreasing down section, very well indurated.
	Trace	CLAYSTONE – medium brown, very bentonitic, poorly indurated.
2755 – 2757.5	95	SHALE – medium and dark grey, occasional black, subfissile, occasional fissile, slickensided in small part, becoming increasingly organic / bituminous in this interval, locally silicified in part, dolomitic in small part, poorly developed microfractures (<2% disaggregated spar), locally microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	MARLSTONE – medium brownish grey, grading to light and medium tan, very silty, dolomitic, siliceous, well indurated.
	02	SILTSTONE – medium brownish grey and medium grey, as above, becoming more pyritic in this interval, very well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2757.5 – 2762.5	98	SHALE – medium grey, occasional dark grey, subfissile, occasional fissile, slickensided in part, becoming more slickensided down section, locally silicified in part, dolomitic in small part, poorly developed microfractures (<1% disaggregated spar), locally microfractures lined with cryptocrystalline to upper fine crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	01	MARLSTONE – medium brownish grey, grading to light and medium tan, very silty, dolomitic, siliceous, well indurated.
	01	SILTSTONE – medium brownish grey and medium grey, as above, very well indurated.
	Trace	CLAYSTONE - medium brown, very bentonitic, poorly indurated.
2762.5 – 2765	97	SHALE – medium and dark grey, rare black, subfissile, occasional fissile, slickensided in part, becoming slightly organic / bituminous, occasional amounts of black organic microlaminations, silicified in part, dolomitic in small part, poorly developed microfractures (<1% disaggregated spar), locally microfractures exhibit a finely laminated texture, lined with cryptocrystalline to upper fine crystalline off white to light greyish silica and calcite spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	02	SILTSTONE – medium brownish grey and medium grey, quartzose, abundant silica cement, pyritic, very well indurated.
	01	MARLSTONE – medium brownish grey, very silty, dolomitic, siliceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2765 – 2767.5	97	SHALE – medium grey, minor dark grey, rare black, subfissile, occasional fissile, slickensided in part, becoming less organic / bituminous, rare amounts of black organic microlaminations, silicified in small part, dolomitic in small part, poorly developed microfractures (<1% disaggregated spar), locally microfractures exhibit a finely laminated texture, lined with cryptocrystalline to upper fine crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	02	SILTSTONE – medium grey grading to medium brownish grey and light grey in part, quartzose, abundant silica cement, occasional dolomite cement, pyritic in small part, very well indurated.
	01	MARLSTONE – medium brownish grey, very silty, dolomitic, siliceous, well indurated.
2767.5 – 2770	97	SHALE – medium to dark grey, subfissile, occasional fissile, slickensided in part, becoming more organic / bituminous, occasional amounts of black organic microlaminations, silicified in part, dolomitic in small part, poorly developed microfractures (<1% disaggregated spar), locally microfractures exhibit a finely laminated texture, lined with cryptocrystalline to upper fine crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	03	SILTSTONE – medium grey grading to light grey, quartzose, abundant silica cement, occasional dolomite cement, becoming increasingly pyritic in this interval, very well indurated.
	Trace	MARLSTONE – medium brownish grey, very silty, dolomitic, siliceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2770 – 2775	94-96	SHALE – medium to dark grey, subfissile, occasional fissile, slickensided in part, organic / bituminous as above, occasional amounts of black organic microlaminations, silicified in part, dolomitic in small part, poorly developed microfractures (<1% disaggregated spar), locally microfractures exhibit a brecciated texture, lined with cryptocrystalline to lower medium crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	04-05	SILTSTONE – light grey, grading to light brownish grey, quartzose, rare clear mica flakes, abundant silica cement, rare dolomite cement, becoming pyritic down section, very well indurated.
	Trace-01	MARLSTONE – medium brownish grey, very silty, dolomitic, siliceous, well indurated.
2775 – 2777.5	93	SHALE – medium grey, minor dark grey, subfissile, occasional fissile, slickensided in part, slightly organic / bituminous as above, rare amounts of black organic microlaminations, silicified in part, locally very finely laminated with cryptocrystalline silica spar, poorly developed microfractures (<1% disaggregated spar), microfractures lined with cryptocrystalline to lower medium crystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	05	SILTSTONE – light to medium brownish grey, quartzose, abundant silica cement, rare dolomite cement, pyritic in small part, very well indurated.
	02	MARLSTONE – medium brownish grey, very silty, siliceous, well indurated.

SAMPLE RECORD / C-31A SIDETRACK NO. 3

INTERVAL (metres)	LITH (%)	DESCRIPTION
2777.5 – 2780	88	SHALE – medium grey, minor dark grey, subfissile, occasional fissile, slickensided in part, becoming more organic in this interval, increase in proportion of black organic microlaminations, silicified in part, poorly developed microfractures (<1% disaggregated spar), microfractures lined with cryptocrystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	08	SILTSTONE – medium brownish grey, quartzose, rare amounts of black organic microlaminations, abundant silica cement, pyritic in small part, very well indurated.
	04	MARLSTONE – medium brownish grey, minor light brownish grey, very silty, siliceous, well indurated.
2780 – 2782.5	92	SHALE – medium grey, minor dark grey, subfissile, occasional fissile, slickensided in part, slig y organic / bituminous as above, rare amounts of black organic microlaminations, silicified in small part, poorly developed microfractures (<1% disaggregated spar), microfractures lined with cryptocrystalline off white to light greyish silica spar, rare amounts of disseminated pyrite and micro pyrite, well indurated.
	04	SILTSTONE – medium brownish grey, quartzose, rare clear mica flakes, abundant silica cement, occasional dolomite cement, becoming more dolomitic in this interval, pyritic in small part, very well indurated.
	04	MARLSTONE – medium brownish grey, very silty, dolomitic, siliceous, well indurated.

CDN FOREST et al NORTH LIARD C-31 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2558.67	6.70	331.50	2552.28	-2064.28	52.74	93.73	107.56	60.63	103.20	0.34	0.96
2565.11	6.80	329.70	2558.68	-2070.68	53.40	93.36	107.56	60.23	102.98	0.23	1.09
2575.75	6.50	325.50	2569.25	-2081.25	54.44	92.70	107.51	59.57	102.58	0.57	1.61
2585.24	6.70	320.60	2578.67	-2090.67	55.31	92.05	107.39	59.00	102.13	0.60	1.89
2594.67	7.00	319.00	2588.04	-2100.04	56.17	91.32	107.22	58.40	101.62	0.36	1.13
2604.14	7.20	315.10	2597.43	-2109.43	57.03	90.52	106.99	57.79	101.03	0.52	1.65
2613.39	7.40	316.00	2606.61	-2118.61	57.87	89.70	106.75	57.17	100.42	0.23	0.75
2617.57	7.10	313.40	2610.75	-2122.75	58.24	89.33	106.64	56.90	100.14	0.44	3.19
2630.80	6.90	315.10	2623.89	-2135.89	59.36	88.17	106.29	56.05	99.27	0.29	0.65
2640.40	6.90	318.50	2633.42	-2145.42	60.20	87.38	106.11	55.43	98.69	0.41	1.28
2650.00	7.50	326.80	2642.94	-2154.94	61.16	86.66	106.07	54.79	98.19	1.20	3.75
2659.70	7.80	333.80	2652.55	-2164.55	62.28	86.02	106.20	54.09	97.83	0.98	3.03
2669.10	7.90	340.30	2661.87	-2173.87	63.46	85.52	106.50	53.42	97.60	0.89	2.85
2678.40	8.60	349.60	2671.07	-2183.07	64.75	85.18	106.99	52.76	97.56	1.50	4.85
2688.10	9.70	355.80	2680.65	-2192.65	66.28	84.99	107.78	52.05	97.72	1.48	4.56
2697.70	11.30	1.20	2690.09	-2202.09	68.02	84.95	108.83	51.31	98.07	1.88	5.86
2707.30	12.50	2.80	2699.48	-2211.48	70.00	85.02	110.13	50.53	98.59	1.24	3.89
2717.00	13.60	3.00	2708.93	-2220.93	72.19	85.13	111.62	49.70	99.19	1.10	3.40
2730.75	15.50	1.00	2722.24	-2234.24	75.64	85.25	113.97	48.42	100.08	1.97	4.29

ADDENDUM B – DIRECTIONAL SURVEY RECORD C–31A SIDETRACK NO. 1

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 1 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
0.00	0.00	0.00	0.00	488.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39.00	0.50	2.00	39.00	449.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71.00	0.25	336.00	71.00	417.00	0.20	-0.02	0.20	353.40	0.02	0.30	0.28
88.00	0.50	58.00	88.00	400.00	0.28	0.02	0.28	5.02	0.09	0.53	0.93
116.00	0.50	217.00	116.00	372.00	0.24	0.05	0.25	12.58	0.11	0.98	1.05
145.00	0.50	11.00	145.00	343.00	0.27	0.00	0.27	0.51	0.06	0.97	1.01
181.16	0.50	86.00	181.16	306.84	0.43	0.19	0.47	23.69	0.28	0.61	0.51
201.00	0.50	301.00	201.00	287.00	0.48	0.20	0.52	22.68	0.31	0.95	1.44
210.72	0.60	339.00	210.72	277.28	0.55	0.15	0.57	14.94	0.27	0.37	1.14
213.44	0.40	39.00	213.44	274.56	0.57	0.15	0.59	14.50	0.27	0.53	5.84
223.00	0.30	36.00	223.00	265.00	0.62	0.18	0.65	16.54	0.32	0.10	0.32
232.73	0.30	16.00	232.73	255.27	0.66	0.21	0.70	17.22	0.35	0.10	0.32
242.60	0.60	358.10	242.60	245.40	0.74	0.21	0.77	15.92	0.37	0.33	1.00
252.00	0.60	12.60	252.00	236.00	0.84	0.22	0.87	14.74	0.40	0.15	0.48
261.50	2.00	356.10	261.49	226.51	1.05	0.22	1.08	11.81	0.45	1.43	4.53
270.90	0.40	287.00	270.89	217.11	1.23	0.18	1.24	8.24	0.45	1.89	6.05
280.62	0.90	298.00	280.61	207.39	1.27	0.08	1.27	3.50	0.36	0.51	1.58
290.35	1.30	315.90	290.34	197.66	1.39	-0.07	1.39	357.25	0.25	0.52	1.61
300.07	2.10	312.70	300.05	187.95	1.59	-0.27	1.61	350.19	0.09	0.81	2.49
309.50	3.00	317.11	309.47	178.53	1.88	-0.57	1.97	343.19	-0.13	0.92	2.93
318.93	3.00	315.90	318.89	169.11	2.24	-0.91	2.42	337.94	-0.38	0.06	0.20
326.48	3.00	313.70	326.43	161.57	2.52	-1.19	2.79	334.75	-0.59	0.12	0.46
335.91	3.20	312.70	335.85	152.15	2.87	-1.56	3.27	331.46	-0.88	0.21	0.66

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 1 60-40-123-30
DIRECTIONAL SURVEY RECORD

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Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
356.89	4.00	320.00	356.79	131.21	3.83	-2.46	4.55	327.25	-1.54	0.92	1.32
384.16	4.40	312.50	383.98	104.02	5.26	-3.84	6.52	323.85	-2.56	0.68	0.75
413.02	5.70	328.30	412.73	75.27	7.23	-5.41	9.03	323.18	-3.65	1.89	1.97
422.79	5.70	330.40	422.45	65.55	8.06	-5.91	10.00	323.77	-3.94	0.21	0.64
432.54	6.90	343.30	432.14	55.86	9.05	-6.32	11.03	325.08	-4.12	1.85	5.69
442.09	7.50	352.90	441.62	46.38	10.21	-6.56	12.14	327.30	-4.09	1.34	4.22
451.40	7.40	359.30	450.85	37.15	11.42	-6.64	13.21	329.82	-3.90	0.84	2.69
461.15	7.30	10.20	460.52	27.48	12.65	-6.54	14.24	332.68	-3.52	1.40	4.30
470.58	7.10	17.40	469.88	18.12	13.80	-6.26	15.15	335.61	-2.99	0.92	2.94
479.56	7.10	27.60	478.79	9.21	14.82	-5.83	15.93	338.51	-2.35	1.26	4.21
489.31	6.90	29.10	488.47	-0.47	15.87	-5.27	16.72	341.63	-1.57	0.27	0.83
499.01	6.70	33.50	498.10	-10.10	16.85	-4.67	17.49	344.49	-0.76	0.56	1.73
508.76	6.90	35.70	507.78	-19.78	17.80	-4.02	18.25	347.28	0.09	0.33	1.01
518.04	6.50	42.00	517.00	-29.00	18.64	-3.34	18.94	349.83	0.94	0.84	2.70
527.56	6.30	42.20	526.46	-38.46	19.43	-2.63	19.61	352.29	1.81	0.20	0.63
536.72	6.00	39.70	535.56	-47.56	20.17	-1.99	20.27	354.37	2.60	0.40	1.32
546.49	6.10	39.00	545.28	-57.28	20.97	-1.33	21.01	356.36	3.42	0.12	0.38
556.03	6.30	37.40	554.76	-66.76	21.78	-0.70	21.79	358.16	4.22	0.26	0.83
565.79	6.60	38.60	564.46	-76.46	22.64	-0.02	22.64	359.94	5.07	0.33	1.01
575.56	6.90	44.40	574.16	-86.16	23.50	0.74	23.51	1.80	6.01	0.74	2.29
585.31	7.30	46.20	583.84	-95.84	24.34	1.60	24.40	3.75	7.03	0.46	1.41
595.09	7.70	45.50	593.54	-105.54	25.23	2.51	25.36	5.68	8.12	0.41	1.26
603.53	8.10	51.00	601.90	-113.90	26.00	3.38	26.22	7.40	9.14	0.85	3.04

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613.22	8.20	51.10	611.49	-123.49	26.87	4.44	27.23	9.39	10.37	0.10	0.31
622.96	8.30	49.00	621.13	-133.13	27.77	5.52	28.31	11.24	11.62	0.32	0.98
632.21	7.90	51.00	630.29	-142.29	28.60	6.51	29.34	12.83	12.78	0.49	1.59
641.63	8.00	50.10	639.61	-151.61	29.43	7.52	30.38	14.33	13.95	0.16	0.51
651.38	8.10	48.70	649.27	-161.27	30.32	8.56	31.50	15.76	15.16	0.22	0.68
660.89	7.70	50.20	658.69	-170.69	31.17	9.55	32.60	17.03	16.32	0.45	1.42
670.31	7.60	48.50	668.02	-180.02	31.99	10.50	33.67	18.17	17.43	0.25	0.79
680.04	7.00	50.40	677.68	-189.68	32.79	11.44	34.73	19.23	18.52	0.65	1.99
689.30	7.30	53.90	686.86	-198.86	33.50	12.35	35.70	20.24	19.57	0.53	1.71
696.00	7.60	55.20	693.51	-205.51	34.00	13.06	36.42	21.01	20.37	0.34	1.54
711.00	7.60	52.67	708.38	-220.38	35.17	14.66	38.10	22.63	22.20	0.33	0.67
719.15	7.60	51.30	716.45	-228.45	35.83	15.51	39.05	23.40	23.17	0.18	0.67
728.91	7.50	53.40	726.13	-238.13	36.62	16.52	40.17	24.29	24.34	0.29	0.90
738.44	6.90	57.60	735.58	-247.58	37.29	17.51	41.20	25.15	25.45	0.80	2.51
748.12	6.20	62.70	745.20	-257.20	37.84	18.46	42.11	26.01	26.50	0.91	2.82
756.97	5.80	67.80	754.00	-266.00	38.23	19.30	42.83	26.79	27.41	0.67	2.26
766.29	5.10	77.80	763.28	-275.28	38.50	20.14	43.45	27.62	28.29	1.18	3.79
776.05	4.30	86.30	773.01	-285.01	38.61	20.93	43.92	28.46	29.08	1.06	3.25
785.79	3.90	89.40	782.72	-294.72	38.64	21.63	44.28	29.24	29.76	0.46	1.41
795.56	3.50	92.80	792.47	-304.47	38.63	22.26	44.58	29.95	30.38	0.46	1.40
805.29	3.00	94.20	802.19	-314.19	38.60	22.81	44.83	30.58	30.91	0.51	1.56
814.77	2.70	99.60	811.65	-323.65	38.54	23.28	45.02	31.13	31.35	0.40	1.27
824.48	2.40	87.20	821.36	-333.36	38.51	23.70	45.22	31.61	31.76	0.63	1.93

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834.05	2.30	94.90	830.92	-342.92	38.51	24.10	45.42	32.04	32.14	0.33	1.04
843.78	1.90	92.80	840.64	-352.64	38.48	24.45	45.59	32.43	32.48	0.41	1.26
853.31	1.90	80.70	850.17	-362.17	38.50	24.76	45.78	32.75	32.79	0.40	1.26
862.82	2.00	80.10	859.67	-371.67	38.55	25.08	46.00	33.05	33.11	0.10	0.32
872.58	2.10	82.10	869.42	-381.42	38.61	25.43	46.23	33.37	33.46	0.12	0.38
892.07	2.00	94.50	888.90	-400.90	38.63	26.12	46.63	34.07	34.14	0.45	0.70
901.55	2.40	95.60	898.37	-410.37	38.60	26.48	46.81	34.46	34.49	0.40	1.27
920.99	2.20	96.70	917.80	-429.80	38.51	27.26	47.18	35.29	35.22	0.20	0.32
930.52	2.30	93.10	927.32	-439.32	38.48	27.63	47.38	35.68	35.58	0.17	0.54
940.00	2.20	86.80	936.79	-448.79	38.48	28.00	47.59	36.04	35.94	0.27	0.84
949.70	2.20	76.10	946.49	-458.49	38.54	28.37	47.85	36.36	36.31	0.41	1.27
968.78	2.50	63.80	965.55	-477.55	38.81	29.10	48.51	36.86	37.08	0.59	0.92
987.76	2.30	70.30	984.51	-496.51	39.12	29.83	49.20	37.33	37.86	0.34	0.53
997.30	2.40	73.30	994.05	-506.05	39.24	30.20	49.52	37.58	38.25	0.16	0.50
1006.61	2.40	69.90	1003.35	-515.35	39.37	30.57	49.84	37.83	38.64	0.14	0.46
1025.31	2.50	81.20	1022.03	-534.03	39.56	31.34	50.47	38.39	39.44	0.49	0.79
1034.85	2.60	76.80	1031.56	-543.56	39.64	31.76	50.80	38.70	39.86	0.22	0.69
1044.59	2.40	79.60	1041.29	-553.29	39.73	32.17	51.12	39.00	40.29	0.23	0.72
1063.35	1.70	78.50	1060.04	-572.04	39.86	32.83	51.64	39.48	40.96	0.70	1.12
1082.60	1.70	68.20	1079.28	-591.28	40.02	33.38	52.11	39.83	41.52	0.31	0.48
1101.66	1.40	82.80	1098.34	-610.34	40.15	33.87	52.53	40.15	42.04	0.49	0.78
1130.81	1.60	98.10	1127.48	-639.48	40.14	34.63	53.01	40.78	42.77	0.45	0.46
1158.98	1.90	93.70	1155.63	-667.63	40.06	35.48	53.51	41.53	43.58	0.33	0.35

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1178.46	2.30	96.80	1175.10	-687.10	39.99	36.19	53.94	42.15	44.26	0.42	0.64
1197.23	2.20	90.50	1193.85	-705.85	39.94	36.93	54.40	42.75	44.97	0.27	0.43
1226.31	2.30	85.10	1222.91	-734.91	39.99	38.07	55.21	43.59	46.09	0.23	0.24
1245.79	2.00	75.90	1242.38	-754.38	40.10	38.79	55.79	44.04	46.81	0.46	0.70
1265.05	2.60	71.70	1261.62	-773.62	40.32	39.53	56.46	44.43	47.58	0.62	0.97
1284.13	3.00	72.60	1280.68	-792.68	40.61	40.41	57.29	44.86	48.51	0.40	0.63
1303.61	3.00	73.60	1300.13	-812.13	40.90	41.39	58.19	45.34	49.53	0.05	0.08
1322.67	3.40	78.40	1319.16	-831.16	41.16	42.42	59.11	45.87	50.59	0.48	0.76
1341.21	4.10	77.70	1337.66	-849.66	41.41	43.61	60.14	46.48	51.80	0.70	1.14
1360.51	4.30	68.30	1356.91	-868.91	41.82	44.95	61.40	47.07	53.21	0.72	1.11
1379.66	4.40	71.00	1376.01	-888.01	42.33	46.32	62.74	47.58	54.65	0.23	0.36
1398.97	4.80	73.60	1395.25	-907.25	42.80	47.79	64.15	48.15	56.19	0.45	0.70
1408.63	4.80	75.70	1404.88	-916.88	43.01	48.57	64.88	48.47	57.00	0.18	0.55
1418.28	4.50	78.90	1414.50	-926.50	43.18	49.33	65.56	48.80	57.78	0.40	1.23
1427.85	4.10	79.80	1424.04	-936.04	43.32	50.04	66.18	49.12	58.50	0.41	1.27
1437.25	3.70	82.80	1433.42	-945.42	43.41	50.67	66.72	49.41	59.14	0.45	1.43
1447.00	3.40	84.50	1443.15	-955.15	43.48	51.27	67.22	49.70	59.74	0.32	0.98
1456.75	3.20	87.00	1452.89	-964.89	43.52	51.83	67.68	49.98	60.29	0.25	0.76
1475.22	3.00	94.70	1471.33	-983.33	43.51	52.83	68.44	50.52	61.26	0.46	0.75
1494.71	2.90	93.10	1490.79	-1002.79	43.44	53.83	69.17	51.09	62.22	0.13	0.20
1513.08	2.60	82.20	1509.14	-1021.14	43.47	54.70	69.87	51.52	63.08	0.60	0.98
1532.16	3.20	78.70	1528.20	-1040.20	43.64	55.65	70.72	51.90	64.04	0.63	0.98
1560.33	3.80	74.50	1556.31	-1068.31	44.04	57.32	72.29	52.47	65.76	0.65	0.69

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1589.11	3.60	79.10	1585.03	-1097.03	44.47	59.13	73.98	53.06	67.62	0.36	0.37
1607.90	3.60	78.00	1603.79	-1115.79	44.70	60.29	75.05	53.44	68.80	0.07	0.11
1627.96	4.10	69.90	1623.80	-1135.80	45.08	61.58	76.31	53.79	70.14	0.74	1.10
1647.16	4.70	68.20	1642.95	-1154.95	45.61	62.95	77.74	54.08	71.60	0.61	0.96
1666.45	5.20	69.40	1662.16	-1174.16	46.21	64.50	79.35	54.38	73.24	0.51	0.79
1685.57	5.40	73.40	1681.20	-1193.20	46.77	66.18	81.03	54.75	75.00	0.42	0.66
1704.55	5.70	70.10	1700.09	-1212.09	47.34	67.92	82.79	55.12	76.83	0.44	0.69
1723.76	5.40	65.50	1719.21	-1231.21	48.04	69.64	84.60	55.40	78.66	0.54	0.84
1743.01	4.80	68.00	1738.39	-1250.39	48.72	71.21	86.28	55.62	80.34	0.64	1.00
1760.00	4.60	68.20	1755.32	-1267.32	49.24	72.50	87.64	55.82	81.72	0.20	0.35
1771.23	4.30	73.30	1766.52	-1278.52	49.53	73.32	88.48	55.96	82.58	0.50	1.33
1780.75	4.30	74.70	1776.01	-1288.01	49.73	74.01	89.16	56.10	83.30	0.10	0.33
1790.47	4.30	75.00	1785.70	-1297.70	49.92	74.71	89.85	56.25	84.03	0.02	0.07
1800.13	4.20	69.20	1795.34	-1307.34	50.14	75.39	90.54	56.38	84.74	0.44	1.37
1809.70	4.20	68.90	1804.88	-1316.88	50.39	76.05	91.22	56.47	85.43	0.02	0.07
1819.22	4.00	76.60	1814.38	-1326.38	50.59	76.70	91.88	56.59	86.11	0.59	1.84
1828.69	4.00	72.40	1823.82	-1335.82	50.77	77.33	92.51	56.72	86.77	0.29	0.93
1838.25	3.80	68.30	1833.36	-1345.36	50.98	77.94	93.14	56.81	87.41	0.34	1.08
1848.39	3.80	73.50	1843.48	-1355.48	51.20	78.58	93.79	56.91	88.08	0.34	1.02
1867.10	3.60	73.60	1862.15	-1374.15	51.54	79.74	94.95	57.12	89.29	0.20	0.32
1876.70	3.40	68.20	1871.73	-1383.73	51.74	80.29	95.51	57.20	89.87	0.39	1.20
1884.00	3.40	68.00	1879.02	-1391.02	51.90	80.69	95.94	57.25	90.30	0.01	0.05
1892.16	3.60	63.40	1887.16	-1399.16	52.10	81.14	96.43	57.30	90.79	0.34	1.27

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1901.84	3.70	64.00	1896.82	-1408.82	52.38	81.70	97.04	57.34	91.38	0.11	0.33
1912.43	3.90	65.70	1907.39	-1419.39	52.67	82.33	97.74	57.39	92.07	0.23	0.65
1921.02	3.90	67.50	1915.96	-1427.96	52.91	82.87	98.32	57.44	92.65	0.12	0.43
1930.62	4.00	68.50	1925.54	-1437.54	53.15	83.48	98.97	57.51	93.30	0.12	0.38
1940.04	4.20	70.50	1934.93	-1446.93	53.39	84.11	99.63	57.60	93.97	0.25	0.78
1949.62	4.30	71.70	1944.49	-1456.49	53.62	84.78	100.32	57.69	94.67	0.13	0.42
1958.82	4.40	73.30	1953.66	-1465.66	53.83	85.45	100.99	57.79	95.37	0.16	0.51
1968.31	4.80	82.10	1963.12	-1475.12	53.99	86.19	101.70	57.94	96.13	0.81	2.56
1977.70	4.80	94.90	1972.48	-1484.48	54.01	86.97	102.38	58.16	96.89	1.07	3.41
1987.37	4.50	109.50	1982.12	-1494.12	53.85	87.73	102.94	58.46	97.60	1.22	3.78
1997.04	4.40	123.80	1991.76	-1503.76	53.51	88.40	103.33	58.81	98.17	1.11	3.45
2006.69	4.70	133.60	2001.38	-1513.38	53.04	88.99	103.60	59.21	98.64	0.83	2.59
2016.19	4.80	138.30	2010.84	-1522.84	52.47	89.54	103.78	59.63	99.05	0.40	1.27
2025.70	4.30	139.90	2020.32	-1532.32	51.90	90.03	103.92	60.04	99.40	0.52	1.63
2035.35	4.00	145.20	2029.95	-1541.95	51.35	90.46	104.02	60.42	99.69	0.49	1.51
2044.85	3.70	147.60	2039.43	-1551.43	50.82	90.81	104.06	60.77	99.92	0.34	1.08
2053.54	3.20	143.90	2048.10	-1560.10	50.38	91.10	104.11	61.06	100.10	0.55	1.89
2063.61	3.20	139.00	2058.16	-1570.16	49.94	91.45	104.20	61.36	100.35	0.27	0.81
2073.27	3.30	132.70	2067.80	-1579.80	49.55	91.84	104.35	61.65	100.63	0.37	1.15
2083.09	3.40	128.60	2077.60	-1589.60	49.18	92.27	104.56	61.94	100.97	0.26	0.79
2092.59	3.60	129.20	2087.09	-1599.09	48.81	92.72	104.79	62.24	101.33	0.20	0.64
2102.33	3.60	132.50	2096.81	-1608.81	48.41	93.18	105.01	62.55	101.69	0.21	0.64
2111.77	3.30	135.70	2106.23	-1618.23	48.02	93.59	105.19	62.84	102.00	0.36	1.13

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 1 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2121.37	2.60	138.50	2115.82	-1627.82	47.66	93.93	105.33	63.10	102.24	0.71	2.23
2131.05	2.10	137.30	2125.49	-1637.49	47.36	94.20	105.43	63.31	102.44	0.50	1.56
2140.50	1.80	135.50	2134.93	-1646.93	47.13	94.42	105.53	63.47	102.60	0.31	0.97
2150.10	1.40	127.60	2144.53	-1656.53	46.95	94.62	105.63	63.61	102.75	0.46	1.42
2159.67	1.10	130.10	2154.10	-1666.10	46.82	94.78	105.71	63.71	102.88	0.30	0.96
2169.34	1.10	130.10	2163.77	-1675.77	46.70	94.92	105.79	63.80	102.99	0.00	0.00
2178.93	0.90	136.20	2173.35	-1685.35	46.59	95.04	105.85	63.89	103.09	0.23	0.71
2187.10	1.00	129.90	2181.52	-1693.52	46.50	95.14	105.90	63.96	103.16	0.14	0.53
2196.70	1.10	141.60	2191.12	-1703.12	46.37	95.26	105.95	64.05	103.25	0.24	0.74
2205.94	1.50	139.20	2200.36	-1712.36	46.21	95.40	106.00	64.16	103.35	0.40	1.31
2215.60	1.70	139.70	2210.01	-1722.01	46.00	95.57	106.07	64.30	103.47	0.20	0.62
2225.06	1.90	146.60	2219.47	-1731.47	45.77	95.75	106.13	64.45	103.59	0.29	0.93
2234.64	2.30	151.70	2229.04	-1741.04	45.46	95.93	106.16	64.64	103.70	0.44	1.38
2244.19	2.50	161.20	2238.59	-1750.59	45.10	96.09	106.14	64.86	103.77	0.44	1.40
2253.91	2.80	168.90	2248.29	-1760.29	44.67	96.20	106.06	65.10	103.78	0.46	1.43
2264.38	2.60	171.70	2258.75	-1770.75	44.18	96.28	105.94	65.35	103.76	0.24	0.69
2273.91	2.80	172.80	2268.27	-1780.27	43.73	96.35	105.81	65.59	103.71	0.21	0.65
2283.41	3.00	169.90	2277.76	-1789.76	43.26	96.42	105.68	65.84	103.68	0.25	0.78
2293.06	2.90	165.40	2287.40	-1799.40	42.77	96.52	105.58	66.10	103.67	0.25	0.78
2302.72	3.30	168.40	2297.04	-1809.04	42.27	96.64	105.48	66.38	103.67	0.43	1.34
2312.31	3.40	168.20	2306.62	-1818.62	41.72	96.75	105.37	66.68	103.66	0.10	0.31
2321.66	3.50	166.60	2315.95	-1827.95	41.17	96.88	105.26	66.98	103.66	0.14	0.45
2331.28	3.20	160.60	2325.55	-1837.55	40.63	97.04	105.20	67.28	103.69	0.46	1.44

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 1 60-40-123-30
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Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION 3.60	AZIMUTH 63.40	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2340.96	3.00	155.70	2335.22	-1847.22	40.14	97.23	105.19	67.57	103.77	0.33	1.03
2350.60	2.60	152.20	2344.85	-1856.85	39.72	97.43	105.22	67.82	103.87	0.43	1.35
2360.28	1.70	145.20	2354.52	-1866.52	39.41	97.62	105.27	68.02	103.98	0.94	2.90
2369.75	0.90	82.80	2363.99	-1875.99	39.30	97.77	105.38	68.10	104.11	1.51	4.79
2406.00	3.00	299.10	2400.23	-1912.23	39.80	97.23	105.06	67.74	103.69	3.76	3.11
2424.00	3.70	48.70	2418.21	-1930.21	40.41	97.25	105.31	67.44	103.85	5.49	9.15
2438.00	4.80	321.60	2432.18	-1944.18	41.17	97.23	105.58	67.05	104.00	5.91	12.66
2450.00	4.80	321.60	2444.14	-1956.14	41.96	96.60	105.32	66.52	103.57	0.00	0.00

Survey record at 2450.0 m K.B is an extrapolation from survey record at 2438.0 m K.B.

ADDENDUM C – DIRECTIONAL SURVEY RECORD C–31A SIDETRACK NO. 2

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 2 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
0.00	0.00	0.00	0.00	488.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39.00	0.50	2.00	39.00	449.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
71.00	0.25	336.00	71.00	417.00	0.20	-0.02	0.20	353.40	0.02	0.30	0.28
88.00	0.50	58.00	88.00	400.00	0.28	0.02	0.28	5.02	0.09	0.53	0.93
116.00	0.50	217.00	116.00	372.00	0.24	0.05	0.25	12.58	0.11	0.98	1.05
145.00	0.50	11.00	145.00	343.00	0.27	0.00	0.27	0.51	0.06	0.97	1.01
181.16	0.50	86.00	181.16	306.84	0.43	0.19	0.47	23.69	0.28	0.61	0.51
201.00	0.50	301.00	201.00	287.00	0.48	0.20	0.52	22.68	0.31	0.95	1.44
210.72	0.60	339.00	210.72	277.28	0.55	0.15	0.57	14.94	0.27	0.37	1.14
213.44	0.40	39.00	213.44	274.56	0.57	0.15	0.59	14.50	0.27	0.53	5.84
223.00	0.30	36.00	223.00	265.00	0.62	0.18	0.65	16.54	0.32	0.10	0.32
232.73	0.30	16.00	232.73	255.27	0.66	0.21	0.70	17.22	0.35	0.10	0.32
242.60	0.60	358.10	242.60	245.40	0.74	0.21	0.77	15.92	0.37	0.33	1.00
252.00	0.60	12.60	252.00	236.00	0.84	0.22	0.87	14.74	0.40	0.15	0.48
261.50	2.00	356.10	261.49	226.51	1.05	0.22	1.08	11.81	0.45	1.43	4.53
270.90	0.40	287.00	270.89	217.11	1.23	0.18	1.24	8.24	0.45	1.89	6.05
280.62	0.90	298.00	280.61	207.39	1.27	0.08	1.27	3.50	0.36	0.51	1.58
290.35	1.30	315.90	290.34	197.66	1.39	-0.07	1.39	357.25	0.25	0.52	1.61
300.07	2.10	312.70	300.05	187.95	1.59	-0.27	1.61	350.19	0.09	0.81	2.49
309.50	3.00	317.11	309.47	178.53	1.88	-0.57	1.97	343.19	-0.13	0.92	2.93
318.93	3.00	315.90	318.89	169.11	2.24	-0.91	2.42	337.94	-0.38	0.06	0.20
326.48	3.00	313.70	326.43	161.57	2.52	-1.19	2.79	334.75	-0.59	0.12	0.46
335.91	3.20	312.70	335.85	152.15	2.87	-1.56	3.27	331.46	-0.88	0.21	0.66

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Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
356.89	4.00	320.00	356.79	131.21	3.83	-2.46	4.55	327.25	-1.54	0.92	1.32
384.16	4.40	312.50	383.98	104.02	5.26	-3.84	6.52	323.85	-2.56	0.68	0.75
413.02	5.70	328.30	412.73	75.27	7.23	-5.41	9.03	323.18	-3.65	1.89	1.97
422.79	5.70	330.40	422.45	65.55	8.06	-5.91	10.00	323.77	-3.94	0.21	0.64
432.54	6.90	343.30	432.14	55.86	9.05	-6.32	11.03	325.08	-4.12	1.85	5.69
442.09	7.50	352.90	441.62	46.38	10.21	-6.56	12.14	327.30	-4.09	1.34	4.22
451.40	7.40	359.30	450.85	37.15	11.42	-6.64	13.21	329.82	-3.90	0.84	2.69
461.15	7.30	10.20	460.52	27.48	12.65	-6 54	14.24	332.68	-3.52	1.40	4.30
470.58	7.10	17.40	469.88	18.12	13.80	-6.26	15.15	335.61	-2.99	0.92	2.94
479.56	7.10	27.60	478.79	9.21	14.82	-5.83	15.93	338.51	-2.35	1.26	4.21
489.31	6.90	29.10	488.47	-0.47	15.87	-5.27	16.72	341.63	-1.57	0.27	0.83
499.01	6.70	33.50	498.10	-10.10	16.85	-4.67	17.49	344.49	-0.76	0.56	1.73
508.76	6.90	35.70	507.78	-19.78	17.80	-4.02	18.25	347.28	0.09	0.33	1.01
518.04	6.50	42.00	517.00	-29.00	18.64	-3.34	18.94	349.83	0.94	0.84	2.70
527.56	6.30	42.20	526.46	-38.46	19.43	-2.63	19.61	352.29	1.81	0.20	0.63
536.72	6.00	39.70	535.56	-47.56	20.17	-1.99	20.27	354.37	2.60	0.40	1.32
546.49	6.10	39.00	545.28	-57.28	20.97	-1.33	21.01	356.36	3.42	0.12	0.38
556.03	6.30	37.40	554.76	-66.76	21.78	-0.70	21.79	358.16	4.22	0.26	0.83
565.79	6.60	38.60	564.46	-76.46	22.64	-0.02	22.64	359.94	5.07	0.33	1.01
575.56	6.90	44.40	574.16	-86.16	23.50	0.74	23.51	1.80	6.01	0.74	2.29
585.31	7.30	46.20	583.84	-95.84	24.34	1.60	24.40	3.75	7.03	0.46	1.41
595.09	7.70	45.50	593.54	-105.54	25.23	2.51	25.36	5.68	8.12	0.41	1.26
603.53	8.10	51.00	601.90	-113.90	26.00	3.38	26.22	7.40	9.14	0.85	3.04

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613.22	8.20	51.10	611.49	-123.49	26.87	4.44	27.23	9.39	10.37	0.10	0.31
622.96	8.30	49.00	621.13	-133.13	27.77	5.52	28.31	11.24	11.62	0.32	0.98
632.21	7.90	51.00	630.29	-142.29	28.60	6.51	29.34	12.83	12.78	0.49	1.59
641.63	8.00	50.10	639.61	-151.61	29.43	7.52	30.38	14.33	13.95	0.16	0.51
651.38	8.10	48.70	649.27	-161.27	30.32	8.56	31.50	15.76	15.16	0.22	0.68
660.89	7.70	50.20	658.69	-170.69	31.17	9.55	32.60	17.03	16.32	0.45	1.42
670.31	7.60	48.50	668.02	-180.02	31.99	10.50	33.67	18.17	17.43	0.25	0.79
680.04	7.00	50.40	677.68	-189.68	32.79	11.44	34.73	19.23	18.52	0.65	1.99
689.30	7.30	53.90	686.86	-198.86	33.50	12.35	35.70	20.24	19.57	0.53	1.71
696.00	7.60	55.20	693.51	-205.51	34.00	13.06	36.42	21.01	20.37	0.34	1.54
711.00	7.60	52.67	708.38	-220.38	35.17	14.66	38.10	22.63	22.20	0.33	0.67
719.15	7.60	51.30	716.45	-228.45	35.83	15.51	39.05	23.40	23.17	0.18	0.67
728.91	7.50	53.40	726.13	-238.13	36.62	16.52	40.17	24.29	24.34	0.29	0.90
738.44	6.90	57.60	735.58	-247.58	37.29	17.51	41.20	25.15	25.45	0.80	2.51
748.12	6.20	62.70	745.20	-257.20	37.84	18.46	42.11	26.01	26.50	0.91	2.82
756.97	5.80	67.80	754.00	-266.00	38.23	19.30	42.83	26.79	27.41	0.67	2.26
766.29	5.10	77.80	763.28	-275.28	38.50	20.14	43.45	27.62	28.29	1.18	3.79
776.05	4.30	86.30	773.01	-285.01	38.61	20.93	43.92	28.46	29.08	1.06	3.25
785.79	3.90	89.40	782.72	-294.72	38.64	21.63	44.28	29.24	29.76	0.46	1.41
795.56	3.50	92.80	792.47	-304.47	38.63	22.26	44.58	29.95	30.38	0.46	1.40
805.29	3.00	94.20	802.19	-314.19	38.60	22.81	44.83	30.58	30.91	0.51	1.56
814.77	2.70	99.60	811.65	-323.65	38.54	23.28	45.02	31.13	31.35	0.40	1.27
824.48	2.40	87.20	821.36	-333.36	38.51	23.70	45.22	31.61	31.76	0.63	1.93

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834.05	2.30	94.90	830.92	-342.92	38.51	24.10	45.42	32.04	32.14	0.33	1.04
843.78	1.90	92.80	840.64	-352.64	38.48	24.45	45.59	32.43	32.48	0.41	1.26
853.31	1.90	80.70	850.17	-362.17	38.50	24.76	45.78	32.75	32.79	0.40	1.26
862.82	2.00	80.10	859.67	-371.67	38.55	25.08	46.00	33.05	33.11	0.10	0.32
872.58	2.10	82.10	869.42	-381.42	38.61	25.43	46.23	33.37	33.46	0.12	0.38
892.07	2.00	94.50	888.90	-400.90	38.63	26.12	46.63	34.07	34.14	0.45	0.70
901.55	2.40	95.60	898.37	-410.37	38.60	26.48	46.81	34.46	34.49	0.40	1.27
920.99	2.20	96.70	917.80	-429.80	38.51	27.26	47.18	35.29	35.22	0.20	0.32
930.52	2.30	93.10	927.32	-439.32	38.48	27.63	47.38	35.68	35.58	0.17	0.54
940.00	2.20	86.80	936.79	-448.79	38.48	28.00	47.59	36.04	35.94	0.27	0.84
949.70	2.20	76.10	946.49	-458.49	38.54	28.37	47.85	36.36	36.31	0.41	1.27
968.78	2.50	63.80	965.55	-477.55	38.81	29.10	48.51	36.86	37.08	0.59	0.92
987.76	2.30	70.30	984.51	-496.51	39.12	29.83	49.20	37.33	37.86	0.34	0.53
997.30	2.40	73.30	994.05	-506.05	39.24	30.20	49.52	37.58	38.25	0.16	0.50
1006.61	2.40	69.90	1003.35	-515.35	39.37	30.57	49.84	37.83	38.64	0.14	0.46
1025.31	2.50	81.20	1022.03	-534.03	39.56	31.34	50.47	38.39	39.44	0.49	0.79
1034.85	2.60	76.80	1031.56	-543.56	39.64	31.76	50.80	38.70	39.86	0.22	0.69
1044.59	2.40	79.60	1041.29	-553.29	39.73	32.17	51.12	39.00	40.29	0.23	0.72
1063.35	1.70	78.50	1060.04	-572.04	39.86	32.83	51.64	39.48	40.96	0.70	1.12
1082.60	1.70	68.20	1079.28	-591.28	40.02	33.38	52.11	39.83	41.52	0.31	0.48
1101.66	1.40	82.80	1098.34	-610.34	40.15	33.87	52.53	40.15	42.04	0.49	0.78
1130.81	1.60	98.10	1127.48	-639.48	40.14	34.63	53.01	40.78	42.77	0.45	0.46
1158.98	1.90	93.70	1155.63	-667.63	40.06	35.48	53.51	41.53	43.58	0.33	0.35

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 2 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
1178.46	2.30	96.80	1175.10	-687.10	39.99	36.19	53.94	42.15	44.26	0.42	0.64
1197.23	2.20	90.50	1193.85	-705.85	39.94	36.93	54.40	42.75	44.97	0.27	0.43
1226.31	2.30	85.10	1222.91	-734.91	39.99	38.07	55.21	43.59	46.09	0.23	0.24
1245.79	2.00	75.90	1242.38	-754.38	40.10	38.79	55.79	44.04	46.81	0.46	0.70
1265.05	2.60	71.70	1261.62	-773.62	40.32	39.53	56.46	44.43	47.58	0.62	0.97
1284.13	3.00	72.60	1280.68	-792.68	40.61	40.41	57.29	44.86	48.51	0.40	0.63
1303.61	3.00	73.60	1300.13	-812.13	40.90	41.39	58.19	45.34	49.53	0.05	0.08
1322.67	3.40	78.40	1319.16	-831.16	41.16	42.42	59.11	45.87	50.59	0.48	0.76
1341.21	4.10	77.70	1337.66	-849.66	41.41	43.61	60.14	46.48	51.80	0.70	1.14
1360.51	4.30	68.30	1356.91	-868.91	41.82	44.95	61.40	47.07	53.21	0.72	1.11
1379.66	4.40	71.00	1376.01	-888.01	42.33	46.32	62.74	47.58	54.65	0.23	0.36
1398.97	4.80	73.60	1395.25	-907.25	42.80	47.79	64.15	48.15	56.19	0.45	0.70
1408.63	4.80	75.70	1404.88	-916.88	43.01	48.57	64.88	48.47	57.00	0.18	0.55
1418.28	4.50	78.90	1414.50	-926.50	43.18	49.33	65.56	48.80	57.78	0.40	1.23
1427.85	4.10	79.80	1424.04	-936.04	43.32	50.04	66.18	49.12	58.50	0.41	1.27
1437.25	3.70	82.80	1433.42	-945.42	43.41	50.67	66.72	49.41	59.14	0.45	1.43
1447.00	3.40	84.50	1443.15	-955.15	43.48	51.27	67.22	49.70	59.74	0.32	0.98
1456.75	3.20	87.00	1452.89	-964.89	43.52	51.83	67.68	49.98	60.29	0.25	0.76
1475.22	3.00	94.70	1471.33	-983.33	43.51	52.83	68.44	50.52	61.26	0.46	0.75
1494.71	2.90	93.10	1490.79	-1002.79	43.44	53.83	69.17	51.09	62.22	0.13	0.20
1513.08	2.60	82.20	1509.14	-1021.14	43.47	54.70	69.87	51.52	63.08	0.60	0.98
1532.16	3.20	78.70	1528.20	-1040.20	43.64	55.65	70.72	51.90	64.04	0.63	0.98
1560.33	3.80	74.50	1556.31	-1068.31	44.04	57.32	72.29	52.47	65.76	0.65	0.69

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 2 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
1589.11	3.60	79.10	1585.03	-1097.03	44.47	59.13	73.98	53.06	67.62	0.36	0.37
1607.90	3.60	78.00	1603.79	-1115.79	44.70	60.29	75.05	53.44	68.80	0.07	0.11
1627.96	4.10	69.90	1623.80	-1135.80	45.08	61.58	76.31	53.79	70.14	0.74	1.10
1647.16	4.70	68.20	1642.95	-1154.95	45.61	62.95	77.74	54.08	71.60	0.61	0.96
1666.45	5.20	69.40	1662.16	-1174.16	46.21	64.50	79.35	54.38	73.24	0.51	0.79
1685.57	5.40	73.40	1681.20	-1193.20	46.77	66.18	81.03	54.75	75.00	0.42	0.66
1704.55	5.70	70.10	1700.09	-1212.09	47.34	67.92	82.79	55.12	76.83	0.44	0.69
1723.76	5.40	65.50	1719.21	-1231.21	48.04	69.64	84.60	55.40	78.66	0.54	0.84
1743.01	4.80	68.00	1738.39	-1250.39	48.72	71.21	86.28	55.62	80.34	0.64	1.00
1760.00	4.60	68.20	1755.32	-1267.32	49.24	72.50	87.64	55.82	81.72	0.20	0.35
1771.23	4.30	73.30	1766.52	-1278.52	49.53	73.32	88.48	55.96	82.58	0.50	1.33
1780.75	4.30	74.70	1776.01	-1288.01	49.73	74.01	89.16	56.10	83.30	0.10	0.33
1790.47	4.30	75.00	1785.70	-1297.70	49.92	74.71	89.85	56.25	84.03	0.02	0.07
1800.13	4.20	69.20	1795.34	-1307.34	50.14	75.39	90.54	56.38	84.74	0.44	1.37
1809.70	4.20	68.90	1804.88	-1316.88	50.39	76.05	91.22	56.47	85.43	0.02	0.07
1819.22	4.00	76.60	1814.38	-1326.38	50.59	76.70	91.88	56.59	86.11	0.59	1.84
1828.69	4.00	72.40	1823.82	-1335.82	50.77	77.33	92.51	56.72	86.77	0.29	0.93
1838.25	3.80	68.30	1833.36	-1345.36	50.98	77.94	93.14	56.81	87.41	0.34	1.08
1848.39	3.80	73.50	1843.48	-1355.48	51.20	78.58	93.79	56.91	88.08	0.34	1.02
1867.10	3.60	73.60	1862.15	-1374.15	51.54	79.74	94.95	57.12	89.29	0.20	0.32
1876.70	3.40	68.20	1871.73	-1383.73	51.74	80.29	95.51	57.20	89.87	0.39	1.20
1884.00	3.40	68.00	1879.02	-1391.02	51.90	80.69	95.94	57.25	90.30	0.01	0.05
1892.16	3.60	63.40	1887.16	-1399.16	52.10	81.14	96.43	57.30	90.79	0.34	1.27

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 2 60-40-123-30
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K.B. Elevation = 488.00
Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
1901.84	3.70	64.00	1896.82	-1408.82	52.38	81.70	97.04	57.34	91.38	0.11	0.33
1912.43	3.90	65.70	1907.39	-1419.39	52.67	82.33	97.74	57.39	92.07	0.23	0.65
1921.02	3.90	67.50	1915.96	-1427.96	52.91	82.87	98.32	57.44	92.65	0.12	0.43
1930.62	4.00	68.50	1925.54	-1437.54	53.15	83.48	98.97	57.51	93.30	0.12	0.38
1940.04	4.20	70.50	1934.93	-1446.93	53.39	84.11	99.63	57.60	93.97	0.25	0.78
1949.62	4.30	71.70	1944.49	-1456.49	53.62	84.78	100.32	57.69	94.67	0.13	0.42
1958.82	4.40	73.30	1953.66	-1465.66	53.83	85.45	100.99	57.79	95.37	0.16	0.51
1968.31	4.80	82.10	1963.12	-1475.12	53.99	86.19	101.70	57.94	96.13	0.81	2.56
1977.70	4.80	94.90	1972.48	-1484.48	54.01	86.97	102.38	58.16	96.89	1.07	3.41
1987.37	4.50	109.50	1982.12	-1494.12	53.85	87.73	102.94	58.46	97.60	1.22	3.78
1997.04	4.40	123.80	1991.76	-1503.76	53.51	88.40	103.33	58.81	98.17	1.11	3.45
2006.69	4.70	133.60	2001.38	-1513.38	53.04	88.99	103.60	59.21	98.64	0.83	2.59
2016.19	4.80	138.30	2010.84	-1522.84	52.47	89.54	103.78	59.63	99.05	0.40	1.27
2025.70	4.30	139.90	2020.32	-1532.32	51.90	90.03	103.92	60.04	99.40	0.52	1.63
2035.35	4.00	145.20	2029.95	-1541.95	51.35	90.46	104.02	60.42	99.69	0.49	1.51
2044.85	3.70	147.60	2039.43	-1551.43	50.82	90.81	104.06	60.77	99.92	0.34	1.08
2053.54	3.20	143.90	2048.10	-1560.10	50.38	91.10	104.11	61.06	100.10	0.55	1.89
2063.61	3.20	139.00	2058.16	-1570.16	49.94	91.45	104.20	61.36	100.35	0.27	0.81
2073.27	3.30	132.70	2067.80	-1579.80	49.55	91.84	104.35	61.65	100.63	0.37	1.15
2083.09	3.40	128.60	2077.60	-1589.60	49.18	92.27	104.56	61.94	100.97	0.26	0.79
2092.59	3.60	129.20	2087.09	-1599.09	48.81	92.72	104.79	62.24	101.33	0.20	0.64
2102.33	3.60	132.50	2096.81	-1608.81	48.41	93.18	105.01	62.55	101.69	0.21	0.64
2111.77	3.30	135.70	2106.23	-1618.23	48.02	93.59	105.19	62.84	102.00	0.36	1.13

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Vertical Section = 77.00

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2121.37	2.60	138.50	2115.82	-1627.82	47.66	93.93	105.33	63.10	102.24	0.71	2.23
2131.05	2.10	137.30	2125.49	-1637.49	47.36	94.20	105.43	63.31	102.44	0.50	1.56
2140.50	1.80	135.50	2134.93	-1646.93	47.13	94.42	105.53	63.47	102.60	0.31	0.97
2150.10	1.40	127.60	2144.53	-1656.53	46.95	94.62	105.63	63.61	102.75	0.46	1.42
2159.67	1.10	130.10	2154.10	-1666.10	46.82	94.78	105.71	63.71	102.88	0.30	0.96
2169.34	1.10	130.10	2163.77	-1675.77	46.70	94.92	105.79	63.80	102.99	0.00	0.00
2178.93	0.90	136.20	2173.35	-1685.35	46.59	95.04	105.85	63.89	103.09	0.23	0.71
2187.10	1.00	129.90	2181.52	-1693.52	46.50	95.14	105.90	63.96	103.16	0.14	0.53
2196.70	1.10	141.60	2191.12	-1703.12	46.37	95.26	105.95	64.05	103.25	0.24	0.74
2205.94	1.50	139.20	2200.36	-1712.36	46.21	95.40	106.00	64.16	103.35	0.40	1.31
2215.60	1.70	139.70	2210.01	-1722.01	46.00	95.57	106.07	64.30	103.47	0.20	0.62
2225.06	1.90	146.60	2219.47	-1731.47	45.77	95.75	106.13	64.45	103.59	0.29	0.93
2234.64	2.30	151.70	2229.04	-1741.04	45.46	95.93	106.16	64.64	103.70	0.44	1.38
2244.19	2.50	161.20	2238.59	-1750.59	45.10	96.09	106.14	64.86	103.77	0.44	1.40
2253.91	2.80	168.90	2248.29	-1760.29	44.67	96.20	106.06	65.10	103.78	0.46	1.43
2264.38	2.60	171.70	2258.75	-1770.75	44.18	96.28	105.94	65.35	103.76	0.24	0.69
2273.91	2.80	172.80	2268.27	-1780.27	43.73	96.35	105.81	65.59	103.71	0.21	0.65
2283.41	3.00	169.90	2277.76	-1789.76	43.26	96.42	105.68	65.84	103.68	0.25	0.78
2293.06	2.90	165.40	2287.40	-1799.40	42.77	96.52	105.58	66.10	103.67	0.25	0.78
2302.72	3.30	168.40	2297.04	-1809.04	42.27	96.64	105.48	66.38	103.67	0.43	1.34
2312.31	3.40	168.20	2306.62	-1818.62	41.72	96.75	105.37	66.68	103.66	0.10	0.31
2321.66	3.50	166.60	2315.95	-1827.95	41.17	96.88	105.26	66.98	103.66	0.14	0.45
2330.00	3.50	166.60	2324.27	-1836.27	40.67	97.00	105.18	67.25	103.66	0.00	0.00

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SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)

No directional survey records taken during drilling of the Sidetrack No. 2 // Survey at 2330.0 m K.B. is an extrapolation of the survey record from C31

ADDENDUM D – DIRECTIONAL SURVEY RECORD C–31A SIDETRACK NO. 3

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 3 60-40-123-30
DIRECTIONAL SURVEY RECORD

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Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
0.00	0.00	0.00	0.00	488.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
39.00	0.50	2.00	39.00	449.00	0.17	0.01	0.00	0.00	0.00	0.00	0.00
71.00	0.25	336.00	71.00	417.00	0.37	-0.01	0.37	357.93	0.28	0.30	0.28
88.00	0.50	58.00	88.00	400.00	0.45	0.03	0.45	4.39	0.30	0.53	0.93
116.00	0.50	217.00	116.00	372.00	0.41	0.06	0.42	8.85	0.25	0.98	1.05
145.00	0.50	11.00	145.00	343.00	0.44	0.01	0.44	1.62	0.31	0.97	1.01
181.16	0.50	86.00	181.16	306.84	0.60	0.20	0.63	18.35	0.30	0.61	0.51
201.00	0.50	301.00	201.00	287.00	0.65	0.21	0.69	17.98	0.33	0.95	1.44
210.72	0.60	339.00	210.72	277.28	0.72	0.16	0.74	12.29	0.41	0.37	1.14
213.44	0.40	39.00	213.44	274.56	0.74	0.16	0.76	12.02	0.43	0.53	5.84
223.00	0.30	36.00	223.00	265.00	0.79	0.19	0.81	13.81	0.44	0.10	0.32
232.73	0.30	16.00	232.73	255.27	0.83	0.22	0.86	14.51	0.45	0.10	0.32
242.60	0.60	358.20	242.60	245.40	0.91	0.22	0.94	13.66	0.51	0.33	1.00
252.00	0.60	12.60	252.00	236.00	1.01	0.23	1.03	12.89	0.57	0.15	0.48
261.50	2.00	356.10	261.49	226.51	1.22	0.23	1.24	10.67	0.72	1.43	4.53
270.90	0.40	287.00	270.89	217.11	1.40	0.19	1.41	7.66	0.88	1.89	6.05
280.62	0.90	298.10	280.61	207.39	1.44	0.09	1.44	3.49	0.98	0.51	1.58
290.35	1.30	315.90	290.34	197.66	1.56	-0.06	1.56	357.93	1.16	0.52	1.61
300.07	2.10	312.70	300.05	187.95	1.76	-0.26	1.78	351.46	1.45	0.81	2.49
309.50	3.00	317.11	309.47	178.53	2.05	-0.56	2.13	344.78	1.87	0.92	2.93
318.93	3.30	315.90	318.89	169.11	2.43	-0.92	2.60	339.36	2.39	0.31	0.98
326.48	3.00	313.70	326.43	161.57	2.72	-1.21	2.98	336.05	2.80	0.32	1.28
335.91	3.20	312.70	335.84	152.16	3.07	-1.58	3.46	332.76	3.31	0.21	0.66

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Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
356.89	4.00	320.00	356.78	131.22	4.03	-2.48	4.73	328.37	4.63	0.92	1.32
384.16	4.40	312.50	383.98	104.02	5.46	-3.86	6.69	324.73	6.62	0.68	0.75
413.02	5.70	328.30	412.73	75.27	7.43	-5.43	9.21	323.83	9.13	1.89	1.97
422.79	5.70	330.40	422.45	65.55	8.27	-5.93	10.17	324.35	10.07	0.21	0.64
432.54	6.90	343.30	432.14	55.86	9.25	-6.34	11.21	325.59	11.06	1.85	5.69
442.09	7.50	352.90	441.62	46.38	10.42	-6.58	12.32	327.73	12.08	1.34	4.22
451.40	7.40	359.30	450.85	37.15	11.62	-6.66	13.39	330.18	13.00	0.84	2.69
461.15	7.30	10.20	460.52	27.48	12.86	-6.56	14.43	332.97	13.83	1.40	4.30
470.04	7.10	17.40	469.34	18.66	13.94	-6.29	15.29	335.69	14.42	0.92	3.12
479.76	7.10	27.60	478.98	9.02	15.04	-5.84	16.14	338.79	14.91	1.26	3.89
489.31	6.90	29.10	488.46	-0.46	16.07	-5.28	16.91	341.80	15.26	0.27	0.85
499.01	6.70	33.50	498.10	-10.10	17.05	-4.69	17.68	344.62	15.56	0.56	1.73
508.76	6.90	35.70	507.78	-19.78	18.00	-4.03	18.44	347.37	15.79	0.33	1.01
518.04	6.50	42.00	516.99	-28.99	18.84	-3.36	19.14	349.90	15.94	0.84	2.70
527.56	6.30	42.20	526.45	-38.45	19.63	-2.64	19.81	352.33	16.01	0.20	0.63
536.72	6.00	39.70	535.56	-47.56	20.37	-2.00	20.47	354.39	16.10	0.40	1.32
546.49	6.10	39.00	545.28	-57.28	21.17	-1.35	21.21	356.36	16.23	0.12	0.38
556.03	6.30	37.40	554.76	-66.76	21.98	-0.71	21.99	358.15	16.37	0.26	0.83
565.79	6.60	38.60	564.46	-76.46	22.84	-0.04	22.84	359.91	16.53	0.33	1.01
575.56	6.90	44.40	574.16	-86.16	23.70	0.72	23.71	1.75	16.63	0.74	2.29
585.31	7.30	46.20	583.84	-95.84	24.54	1.58	24.60	3.69	16.65	0.46	1.41
595.09	7.70	45.50	593.53	-105.53	25.43	2.50	25.56	5.61	16.66	0.41	1.26
603.53	8.10	51.00	601.89	-113.89	26.20	3.36	26.42	7.31	16.61	0.85	3.04

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Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
613.22	8.20	51.10	611.49	-123.49	27.07	4.43	27.43	9.30	16.50	0.10	0.31
622.96	8.30	49.00	621.13	-133.13	27.96	5.50	28.50	11.13	16.41	0.32	0.98
632.21	7.90	51.00	630.28	-142.28	28.80	6.50	29.53	12.72	16.32	0.49	1.59
641.63	8.00	50.10	639.61	-151.61	29.63	7.51	30.57	14.22	16.23	0.16	0.51
651.38	8.10	48.70	649.27	-161.27	30.52	8.54	31.69	15.64	16.15	0.22	0.68
660.89	7.70	50.20	658.69	-170.69	31.37	9.54	32.79	16.91	16.08	0.45	1.42
670.31	7.60	48.50	668.02	-180.02	32.19	10.49	33.85	18.05	16.01	0.25	0.79
680.04	7.00	50.40	677.67	-189.67	32.99	11.43	34.91	19.10	15.95	0.65	1.99
689.30	7.30	53.90	686.86	-198.86	33.70	12.34	35.88	20.11	15.83	0.53	1.71
696.00	7.60	55.20	693.50	-205.50	34.20	13.04	36.60	20.88	15.70	0.34	1.54
711.00	7.60	52.67	708.37	-220.37	35.37	14.65	38.28	22.50	15.44	0.33	0.67
719.15	7.60	51.30	716.45	-228.45	36.03	15.50	39.22	23.27	15.33	0.18	0.67
728.91	7.50	53.40	726.13	-238.13	36.82	16.51	40.35	24.16	15.20	0.29	0.90
738.44	6.90	57.60	735.58	-247.58	37.49	17.49	41.37	25.01	15.01	0.80	2.51
748.12	6.20	62.70	745.20	-257.20	38.04	18.45	42.28	25.87	14.74	0.91	2.82
756.97	5.80	67.80	754.00	-266.00	38.43	19.29	43.00	26.65	14.45	0.67	2.26
766.29	5.10	77.80	763.28	-275.28	38.70	20.13	43.62	27.48	14.06	1.18	3.79
776.05	4.30	86.30	773.01	-285.01	38.81	20.92	44.09	28.32	13.59	1.06	3.25
785.79	3.90	89.40	782.72	-294.72	38.84	21.61	44.45	29.09	13.13	0.46	1.41
795.56	3.50	92.80	792.47	-304.47	38.83	22.24	44.75	29.81	12.69	0.46	1.40
805.29	3.00	94.20	802.18	-314.18	38.80	22.79	45.00	30.44	12.28	0.51	1.56
814.77	2.70	99.60	811.65	-323.65	38.74	23.26	45.19	30.98	11.92	0.40	1.27
824.48	2.40	87.20	821.35	-333.35	38.71	23.69	45.39	31.47	11.60	0.63	1.93

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834.05	2.30	94.90	830.91	-342.91	38.71	24.08	45.59	31.89	11.33	0.33	1.04
843.78	1.90	92.80	840.64	-352.64	38.68	24.44	45.75	32.28	11.07	0.41	1.26
853.31	1.90	80.70	850.16	-362.16	38.70	24.75	45.94	32.60	10.86	0.40	1.26
862.82	2.00	80.10	859.67	-371.67	38.75	25.07	46.16	32.90	10.68	0.10	0.32
872.58	2.10	82.10	869.42	-381.42	38.81	25.42	46.39	33.22	10.48	0.12	0.38
892.07	2.00	94.50	888.90	-400.90	38.83	26.11	46.79	33.92	10.02	0.45	0.70
901.55	2.40	95.60	898.37	-410.37	38.80	26.47	46.97	34.31	9.74	0.40	1.27
920.99	2.20	96.70	917.80	-429.80	38.71	27.25	47.34	35.14	9.15	0.20	0.32
930.52	2.30	93.10	927.32	-439.32	38.68	27.62	47.53	35.53	8.87	0.17	0.54
940.00	2.20	86.80	936.79	-448.79	38.68	27.99	47.75	35.89	8.61	0.27	0.84
949.70	2.20	76.10	946.48	-458.48	38.74	28.36	48.01	36.21	8.40	0.41	1.27
968.78	2.50	63.80	965.55	-477.55	39.01	29.09	48.66	36.71	8.09	0.59	0.92
987.76	2.30	70.30	984.51	-496.51	39.32	29.82	49.35	37.17	7.81	0.34	0.53
997.30	2.40	73.30	994.04	-506.04	39.44	30.19	49.67	37.43	7.64	0.16	0.50
1006.61	2.40	69.90	1003.35	-515.35	39.56	30.56	49.99	37.68	7.48	0.14	0.46
1025.31	2.50	81.20	1022.03	-534.03	39.76	31.33	50.62	38.23	7.08	0.49	0.79
1034.85	2.60	75.80	1031.56	-543.56	39.84	31.74	50.94	38.55	6.86	0.22	0.69
1044.59	2.40	79.60	1041.29	-553.29	39.93	32.16	51.27	38.85	6.63	0.23	0.72
1063.35	1.70	78.50	1060.04	-572.04	40.06	32.82	51.78	39.33	6.27	0.70	1.12
1082.60	1.70	68.20	1079.28	-591.28	40.22	33.36	52.26	39.68	6.01	0.31	0.48
1101.66	1.40	82.80	1098.33	-610.33	40.35	33.86	52.68	40.00	5.76	0.49	0.78
1130.81	1.60	98.10	1127.47	-639.47	40.34	34.61	53.16	40.63	5.23	0.45	0.46
1158.98	1.90	93.70	1155.63	-667.63	40.26	35.47	53.65	41.38	4.58	0.33	0.35

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1178.46	2.30	96.80	1175.10	-687.10	40.19	36.18	54.07	41.99	4.04	0.42	0.64
1197.23	2.20	90.50	1193.85	-705.85	40.14	36.91	54.53	42.60	3.50	0.27	0.43
1226.31	2.30	85.10	1222.91	-734.91	40.19	38.05	55.34	43.44	2.74	0.23	0.24
1245.79	2.00	75.90	1242.38	-754.38	40.30	38.77	55.92	43.89	2.33	0.46	0.70
1265.05	2.60	71.70	1261.62	-773.62	40.52	39.51	56.60	44.28	1.98	0.62	0.97
1284.13	3.00	72.60	1280.68	-792.68	40.81	40.40	57.42	44.71	1.57	0.40	0.63
1303.61	3.00	73.60	1300.13	-812.13	41.10	41.38	58.32	45.19	1.11	0.05	0.08
1322.67	3.40	78.40	1319.16	-831.16	41.36	42.41	59.23	45.72	0.58	0.48	0.76
1341.21	4.10	77.70	1337.66	-849.66	41.61	43.59	60.26	46.33	-0.06	0.70	1.14
1360.51	4.30	68.30	1356.91	-868.91	42.02	44.94	61.53	46.92	-0.69	0.72	1.11
1379.66	4.40	71.00	1376.00	-888.00	42.53	46.30	62.87	47.43	-1.27	0.23	0.36
1398.97	4.80	73.60	1395.25	-907.25	43.00	47.78	64.28	48.01	-1.95	0.45	0.70
1408.63	4.80	75.70	1404.88	-916.88	43.21	48.56	65.00	48.33	-2.33	0.18	0.55
1418.28	4.50	78.90	1414.50	-926.50	43.38	49.32	65.68	48.66	-2.73	0.40	1.23
1427.85	4.10	79.80	1424.04	-936.04	43.52	50.02	66.30	48.98	-3.12	0.41	1.27
1437.25	3.70	82.80	1433.42	-945.42	43.61	50.66	66.84	49.27	-3.49	0.45	1.43
1447.00	3.40	84.50	1443.15	-955.15	43.68	51.26	67.34	49.56	-3.86	0.32	0.98
1456.75	3.20	87.00	1452.88	-964.88	43.72	51.82	67.80	49.84	-4.21	0.25	0.76
1475.22	3.00	94.70	1471.33	-983.33	43.71	52.81	68.55	50.39	-4.91	0.46	0.75
1494.71	2.90	93.10	1490.79	-1002.79	43.64	53.81	69.28	50.96	-5.65	0.13	0.20
1513.08	2.60	82.20	1509.14	-1021.14	43.67	54.69	69.99	51.39	-6.23	0.60	0.98
1532.16	3.20	78.70	1528.19	-1040.19	43.84	55.64	70.83	51.77	-6.77	0.63	0.98
1560.33	3.80	74.50	1556.31	-1068.31	44.24	57.31	72.40	52.33	-7.64	0.65	0.69

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1589.11	3.60	79.10	1585.03	-1097.03	44.67	59.12	74.09	52.93	-8.58	0.36	0.37
1607.90	3.60	78.00	1603.79	-1115.79	44.90	60.27	75.16	53.32	-9.21	0.07	0.11
1627.96	4.10	69.90	1623.80	-1135.80	45.28	61.56	76.42	53.67	-9.83	0.74	1.10
1647.16	4.70	68.20	1642.94	-1154.94	45.81	62.94	77.84	53.95	-10.39	0.61	0.96
1666.45	5.20	69.40	1662.16	-1174.16	46.41	64.49	79.45	54.26	-11.03	0.51	0.79
1685.57	5.40	73.40	1681.20	-1193.20	46.97	66.16	81.14	54.63	-11.78	0.42	0.66
1704.55	5.70	70.10	1700.09	-1212.09	47.54	67.91	82.89	55.00	-12.57	0.44	0.69
1723.76	5.40	65.50	1719.21	-1231.21	48.24	69.62	84.71	55.28	-13.25	0.54	0.84
1743.01	4.80	68.00	1738.38	-1250.38	48.92	71.20	86.38	55.51	-13.85	0.64	1.00
1760.00	4.80	72.00	1755.31	-1267.31	49.41	72.53	87.76	55.74	-14.42	0.33	0.59
1771.23	4.30	73.30	1766.51	-1278.51	49.67	73.38	88.61	55.91	-14.82	0.51	1.36
1780.75	4.30	74.70	1776.00	-1288.00	49.87	74.07	89.29	56.05	-15.15	0.10	0.33
1790.47	4.30	75.00	1785.70	-1297.70	50.06	74.77	89.98	56.20	-15.50	0.02	0.07
1800.13	4.20	69.20	1795.33	-1307.33	50.28	75.45	90.67	56.32	-15.81	0.44	1.37
1809.70	4.20	68.90	1804.87	-1316.87	50.53	76.11	91.35	56.42	-16.08	0.02	0.07
1819.22	4.00	76.70	1814.37	-1326.37	50.73	76.75	92.01	56.54	-16.38	0.59	1.87
1828.69	4.00	72.40	1823.82	-1335.82	50.91	77.39	92.63	56.66	-16.69	0.30	0.95
1838.25	3.80	68.30	1833.35	-1345.35	51.13	78.00	93.26	56.76	-16.96	0.34	1.08
1848.39	3.80	73.50	1843.47	-1355.47	51.35	78.64	93.92	56.86	-17.24	0.34	1.02
1867.10	3.60	73.60	1862.14	-1374.14	51.69	79.79	95.07	57.07	-17.79	0.20	0.32
1876.70	3.40	68.20	1871.72	-1383.72	51.88	80.35	95.64	57.15	-18.04	0.39	1.20
1864.00	3.40	68.00	1879.01	-1391.01	52.04	80.75	96.07	57.20	-18.20	0.01	0.05
1892.16	3.60	63.40	1887.16	-1399.16	52.25	81.20	96.56	57.24	-18.36	0.34	1.27

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1901.84	3.70	64.00	1896.82	-1408.82	52.52	81.76	97.17	57.28	-18.55	0.11	0.33
1911.43	3.90	65.70	1906.39	-1418.39	52.79	82.33	97.80	57.33	-18.75	0.23	0.72
1921.02	3.90	67.50	1915.95	-1427.95	53.05	82.93	98.44	57.39	-18.98	0.12	0.38
1930.62	4.00	68.50	1925.53	-1437.53	53.29	83.54	99.09	57.46	-19.22	0.12	0.38
1940.04	4.20	70.50	1934.93	-1446.93	53.53	84.17	99.75	57.55	-19.49	0.25	0.78
1949.62	4.30	71.70	1944.48	-1456.48	53.76	84.85	100.44	57.64	-19.79	0.13	0.42
1958.82	4.40	73.30	1953.65	-1465.65	53.97	85.51	101.12	57.74	-20.09	0.16	0.51
1968.31	4.80	82.10	1963.11	-1475.11	54.13	86.25	101.83	57.89	-20.49	0.81	2.56
1977.70	4.80	94.90	1972.47	-1484.47	54.15	87.03	102.50	58.11	-21.02	1.07	3.41
1987.37	4.50	109.50	1982.11	-1494.11	53.99	87.79	103.07	58.41	-21.66	1.22	3.78
1997.04	4.40	123.80	1991.75	-1503.75	53.66	88.46	103.46	58.76	-22.36	1.11	3.45
2006.69	4.70	133.60	2001.37	-1513.37	53.18	89.05	103.72	59.16	-23.12	0.83	2.59
2016.19	4.80	138.30	2010.84	-1522.84	52.61	89.60	103.90	59.58	-23.90	0.40	1.27
2025.70	4.30	139.90	2020.32	-1532.32	52.04	90.09	104.05	59.99	-24.66	0.52	1.63
2035.35	4.00	145.20	2029.94	-1541.94	51.49	90.52	104.14	60.37	-25.35	0.49	1.51
2044.85	3.70	147.60	2039.42	-1551.42	50.96	90.87	104.19	60.72	-25.98	0.34	1.08
2054.54	3.20	143.90	2049.09	-1561.09	50.48	91.20	104.24	61.04	-26.55	0.55	1.69
2063.61	3.20	139.00	2058.15	-1570.15	50.08	91.52	104.32	61.31	-27.06	0.27	0.90
2073.27	3.30	132.70	2067.79	-1579.79	49.65	91.90	104.47	61.60	-27.60	0.37	1.15
2083.09	3.40	128.60	2077.60	-1589.60	49.31	92.33	104.68	61.89	-28.17	0.25	0.79
2092.59	3.60	129.20	2087.08	-1599.08	48.96	92.78	104.90	62.19	-28.75	0.20	0.64
2102.33	3.60	132.50	2096.80	-1608.80	48.55	93.25	105.13	62.50	-29.36	0.21	0.64
2111.77	3.30	135.70	2106.22	-1618.22	48.16	93.65	105.31	62.79	-29.92	0.36	1.13

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2121.37	2.60	138.50	2115.81	-1627.81	47.79	93.99	105.44	63.05	-30.42	0.71	2.23
2131.05	2.10	137.30	2125.48	-1637.48	47.50	94.26	105.55	63.25	-30.81	0.50	1.56
2140.50	1.80	135.50	2134.93	-1646.93	47.27	94.48	105.64	63.42	-31.14	0.31	0.97
2150.10	1.40	127.60	2144.52	-1656.52	47.09	94.68	105.74	63.56	-31.40	0.46	1.42
2159.67	1.10	130.10	2154.09	-1666.09	46.96	94.84	105.83	63.66	-31.61	0.30	0.96
2169.34	1.10	130.40	2163.76	-1675.76	46.84	94.98	105.90	63.75	-31.79	0.01	0.02
2178.93	0.90	136.20	2173.35	-1685.35	46.72	95.10	105.96	63.84	-31.96	0.22	0.70
2187.10	1.00	129.90	2181.52	-1693.52	46.63	95.20	106.01	63.90	-32.10	0.14	0.53
2196.70	1.10	141.60	2191.11	-1703.11	46.51	95.32	106.06	63.99	-32.27	0.24	0.74
2205.94	1.50	139.20	2200.35	-1712.35	46.34	95.46	106.11	64.10	-32.48	0.40	1.31
2213.52	1.70	139.70	2207.93	-1719.93	46.18	95.60	106.17	64.21	-32.69	0.20	0.79
2225.06	1.90	146.60	2219.46	-1731.46	45.89	95.81	106.24	64.41	-33.05	0.29	0.77
2234.64	2.30	151.70	2229.04	-1741.04	45.59	95.99	106.27	64.59	-33.39	0.44	1.38
2244.19	2.50	161.20	2238.58	-1750.58	45.23	96.15	106.25	64.81	-33.77	0.44	1.40
2253.91	2.80	168.90	2248.29	-1760.29	44.79	96.26	106.17	65.05	-34.16	0.46	1.43
2264.38	2.60	171.70	2258.75	-1770.75	44.31	96.35	106.04	65.30	-34.57	0.24	0.69
2273.91	2.80	172.80	2268.27	-1780.27	43.86	96.41	105.91	65.54	-34.93	0.21	0.65
2283.41	3.00	169.40	2277.75	-1789.75	43.39	96.48	105.79	65.79	-35.33	0.26	0.83
2293.06	2.90	165.40	2287.39	-1799.39	42.90	96.59	105.69	66.05	-35.75	0.23	0.71
2303.23	6.30	230.00	2297.53	-1809.53	42.29	96.23	105.11	66.27	-35.94	5.69	16.79
2312.88	7.90	245.00	2307.11	-1819.11	41.67	95.22	103.94	66.36	-35.69	2.44	7.57
2322.32	9.10	255.00	2316.45	-1828.45	41.21	93.91	102.55	66.31	-35.12	1.90	6.04
2331.92	9.70	255.40	2325.92	-1837.92	40.81	92.39	101.00	66.17	-34.37	0.60	1.89

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 3 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2341.56	9.90	252.70	2335.42	-1847.42	40.35	90.82	99.38	66.04	-33.60	0.50	1.56
2353.40	10.50	260.60	2347.07	-1859.07	39.88	88.78	97.32	65.81	-32.54	1.52	3.85
2362.90	10.60	266.80	2356.41	-1868.41	39.68	87.05	95.67	65.49	-31.49	1.14	3.60
2372.70	10.90	268.60	2366.04	-1878.04	39.61	85.23	93.98	65.07	-30.28	0.45	1.38
2382.30	11.50	270.30	2375.45	-1887.45	39.59	83.36	92.29	64.59	-29.00	0.68	2.14
2391.00	12.40	271.70	2383.97	-1895.97	39.63	81.56	90.68	64.09	-27.73	0.95	3.26
2400.40	12.40	273.30	2393.15	-1905.15	39.72	79.55	88.91	63.47	-26.27	0.34	1.10
2410.00	12.70	277.50	2402.52	-1914.52	39.91	77.47	87.15	62.74	-24.70	0.96	3.00
2419.40	13.30	283.30	2411.68	-1923.68	40.30	75.39	85.49	61.88	-22.98	1.44	4.58
2428.60	13.80	288.40	2420.62	-1932.62	40.89	73.32	83.95	60.86	-21.13	1.29	4.22
2438.20	14.80	287.50	2429.92	-1941.92	41.62	71.07	82.36	59.65	-19.04	1.02	3.20
2447.60	15.90	285.40	2438.99	-1950.99	42.32	68.68	80.67	58.36	-16.88	1.23	3.93
2457.28	17.30	283.10	2448.26	-1960.26	43.00	66.00	78.77	56.92	-14.54	1.55	4.79
2466.80	18.70	277.90	2457.32	-1969.32	43.53	63.11	76.67	55.41	-12.16	2.13	6.71
2476.40	20.40	275.20	2466.36	-1978.36	43.89	59.92	74.27	53.78	-9.69	1.92	6.01
2485.90	21.80	271.00	2475.23	-1987.23	44.07	56.51	71.66	52.05	-7.20	2.06	6.50
2495.30	23.50	270.10	2483.90	-1995.90	44.11	52.89	68.86	50.17	-4.68	1.73	5.54
2504.90	24.40	267.90	2492.68	-2004.68	44.04	48.99	65.87	48.05	-2.03	1.27	3.96
2514.40	25.50	268.00	2501.29	-2013.29	43.89	44.99	62.85	45.70	0.63	1.10	3.48
2524.10	26.70	267.20	2510.00	-2022.00	43.71	40.72	59.74	42.97	3.45	1.25	3.87
2533.70	27.70	265.60	2518.54	-2030.54	43.44	36.34	56.64	39.92	6.27	1.24	3.87
2542.80	28.10	264.30	2526.58	-2038.58	43.06	32.10	53.71	36.70	8.93	0.73	2.40
2552.20	28.60	263.60	2534.85	-2046.85	42.59	27.66	50.79	33.00	11.66	0.60	1.92

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 3 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2561.90	28.80	264.00	2543.36	-2055.36	42.09	23.03	47.98	28.69	14.50	0.28	0.86
2571.60	29.50	264.90	2551.83	-2063.83	41.63	18.33	45.49	23.76	17.42	0.83	2.55
2581.40	29.50	265.00	2560.36	-2072.36	41.21	13.52	43.37	18.17	20.44	0.05	0.15
2591.00	29.60	264.70	2568.71	-2080.71	40.78	8.81	41.72	12.19	23.39	0.18	0.56
2601.50	29.40	266.60	2577.85	-2089.85	40.39	3.65	40.55	5.17	26.67	0.96	2.73
2610.00	29.00	268.20	2585.27	-2097.27	40.20	-0.49	40.20	359.30	29.39	0.88	3.10
2619.70	28.80	268.60	2593.77	-2105.77	40.07	-5.18	40.40	352.64	32.54	0.28	0.86
2629.20	29.00	269.10	2602.08	-2114.08	39.98	-9.77	41.15	346.27	35.64	0.31	0.99
2638.70	29.10	269.10	2610.39	-2122.39	39.91	-14.38	42.42	340.19	38.78	0.10	0.32
2648.30	29.20	268.20	2618.77	-2130.77	39.80	-19.05	44.12	334.42	41.93	0.45	1.41
2657.51	29.60	267.20	2626.80	-2138.80	39.61	-23.57	46.10	329.25	44.92	0.63	2.06
2666.90	30.10	267.00	2634.94	-2146.94	39.38	-28.24	48.46	324.36	47.98	0.51	1.63
2676.70	30.30	267.90	2643.41	-2155.41	39.16	-33.16	51.31	319.74	51.22	0.49	1.52
2689.00	30.80	270.10	2654.00	-2166.00	39.05	-39.41	55.48	314.74	55.46	1.22	2.99
2696.30	30.00	270.10	2660.30	-2172.30	39.06	-43.11	58.17	312.18	58.02	0.80	3.29
2705.80	29.70	272.30	2668.54	-2180.54	39.15	-47.83	61.82	309.30	61.36	1.14	3.59
2717.10	28.70	271.40	2678.40	-2190.40	39.33	-53.34	66.28	306.40	65.29	1.09	2.90
2723.90	28.30	276.30	2684.38	-2196.38	39.55	-56.58	69.03	304.96	67.69	2.37	10.46
2729.10	28.70	277.50	2688.95	-2200.95	39.85	-59.04	71.23	304.02	69.60	0.70	4.03
2733.50	28.80	277.90	2692.81	-2204.81	40.13	-61.14	73.13	303.28	71.26	0.22	1.48
2743.10	29.70	277.50	2701.18	-2213.18	40.76	-65.79	77.39	301.78	74.93	0.92	2.88
2752.80	30.90	274.70	2709.56	-2221.56	41.28	-70.65	81.83	300.30	78.66	1.85	5.73
2762.40	32.40	272.60	2717.73	-2229.73	41.60	-75.68	86.36	298.80	82.37	1.86	5.82

CDN FOREST et al NORTH LIARD C-31A SIDETRACK NO. 3 60-40-123-30
DIRECTIONAL SURVEY RECORD

Calculations Based On Survey Data Provided By Ryan Energy Technologies Inc.

K.B. Elevation = 488.00
Vertical Section = 316.28

SURVEY DEPTH (m)	INCLINATION (deg)	AZIMUTH (deg)	TVD (m)	TVD SUBSEA (m)	LATITUDE N(+) / S(-) (m)	DEPARTURE E(+) / W(-) (m)	CLOSURE (m)	CLOSURE AZIMUTH (deg)	VERTICAL SECTION (m)	DOGLEG (deg)	DOGLEG SEVERITY (°/30m)
2767.40	33.00	273.30	2721.94	-2233.94	41.74	-78.38	88.80	298.04	84.33	0.71	4.26
2772.10	33.00	273.00	2725.88	-2237.88	41.88	-80.93	91.12	297.36	86.20	0.16	1.04
2781.20	33.80	271.90	2733.48	-2245.48	42.09	-85.94	95.69	296.09	89.81	1.00	3.31
2790.90	33.90	271.70	2741.53	-2253.53	42.26	-91.34	100.64	294.83	93.67	0.15	0.46
2800.60	33.10	272.30	2749.62	-2261.62	42.45	-96.69	105.59	293.70	97.50	0.87	2.68
2810.30	32.50	271.40	2757.77	-2269.77	42.62	-101.94	110.49	292.69	101.25	0.77	2.39
2820.00	32.50	270.90	2765.96	-2277.96	42.72	-107.15	115.35	291.74	104.93	0.27	0.83
2829.70	33.20	270.30	2774.10	-2286.10	42.78	-112.41	120.27	290.83	108.61	0.77	2.39
2835.50	33.20	270.30	2778.96	-2290.96	42.79	-115.59	123.25	290.32	110.81	0.00	0.00
2839.40	34.00	270.00	2782.21	-2294.21	42.80	-117.74	125.28	289.98	112.31	0.82	6.28
2849.10	34.70	267.90	2790.21	-2302.21	42.70	-123.22	130.40	289.11	116.02	1.38	4.26
2858.80	35.30	269.30	2798.16	-2310.16	42.56	-128.78	135.63	288.29	119.76	1.00	3.10
2868.50	36.00	269.30	2806.04	-2318.04	42.49	-134.43	140.99	287.54	123.62	0.70	2.16
2878.22	36.20	269.40	2813.90	-2325.90	42.43	-140.16	146.44	286.84	127.53	0.21	0.64
2881.20	36.10	269.30	2816.30	-2328.30	42.41	-141.92	148.12	286.64	128.73	0.12	1.17
2888.30	36.00	270.50	2822.04	-2334.04	42.40	-146.09	152.12	286.18	131.61	0.71	3.01
2898.10	36.00	272.40	2829.97	-2341.97	42.55	-151.85	157.70	285.65	135.70	1.12	3.42
2907.80	36.00	271.50	2837.82	-2349.82	42.74	-157.55	163.24	285.18	139.78	0.53	1.64
2917.40	35.20	273.10	2845.62	-2357.62	42.96	-163.13	168.70	284.75	143.80	1.23	3.84
2927.10	35.10	272.80	2853.56	-2365.56	43.25	-168.71	174.17	284.38	147.86	0.20	0.62
2941.50	35.10	272.80	2865.34	-2377.34	43.66	-176.98	182.28	283.86	153.87	0.00	0.00

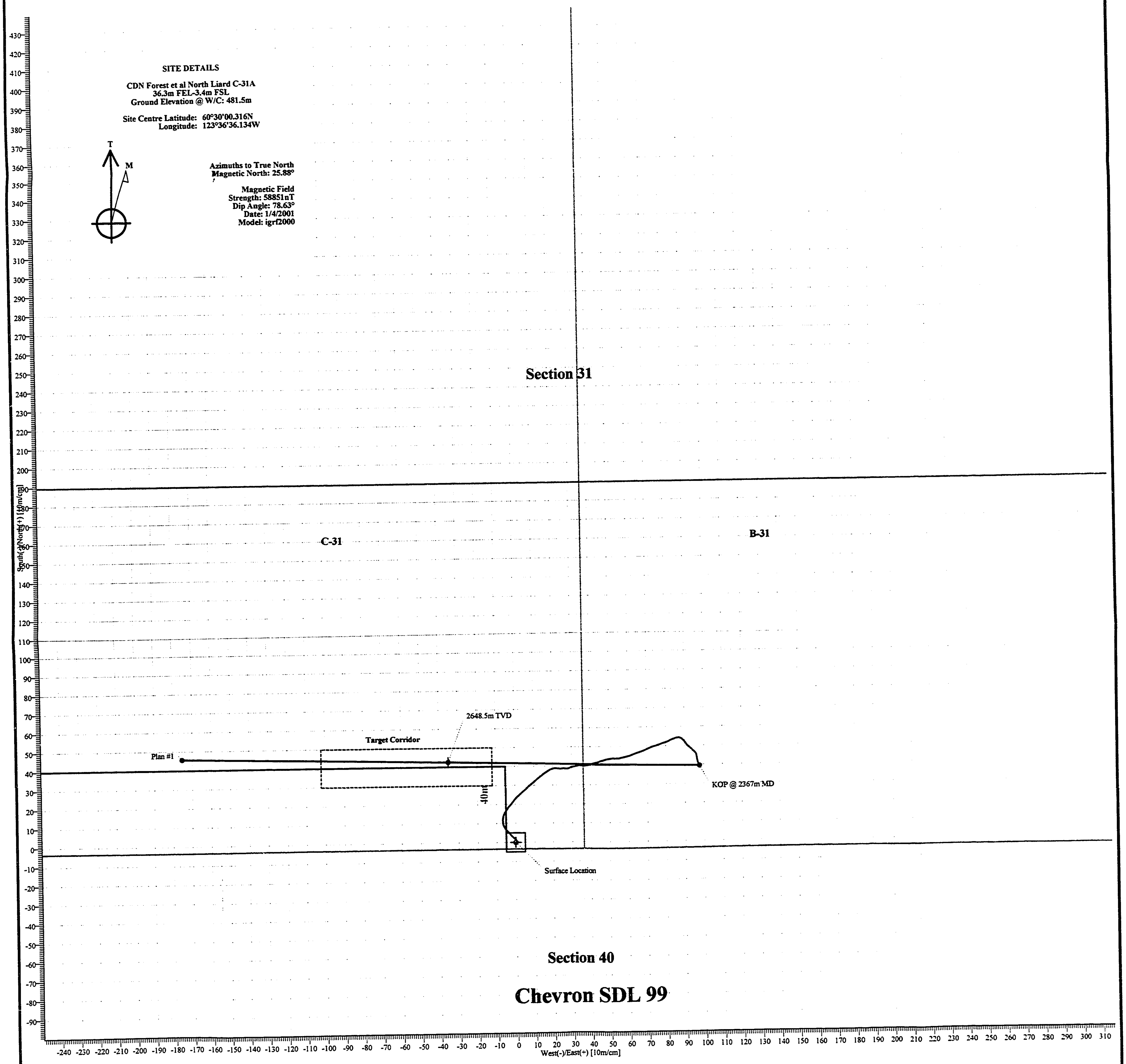
ADDENDUM E – GEOLOGICAL STRIP LOGS

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

LEGIBILITY
OF LOG
COULD VARY
DUE TO
COLOR
CONTENT

Canadian Forest Oil Ltd.

Field: North Liard
Site: CDN Forest et al North Liard C-31A
Well: Grid Area N60/40 W123/30
Wellpath: 3134 ST
Plan: Plan #1



REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Site Centre CDN Forest et al North Liard C-31A, True North
Vertical (TVD) Reference: RKB 485.00
Section (VS) Reference: Site Centre (0.00N,0.00E)
Measured Depth Reference: RKB 485.00
Calculation Method: Minimum Curvature

Plan: Plan #1 (Grid Area N60/40 W123/30/3134 ST)

Created By: Chris Gallant Date: 1/4/2001

Ryan The leader in UNDERGROUND INTELLIGENCE™

Ryan Energy Technologies Inc.
Suite 700, 505 - 2nd Street SW

HEF PETROPHYSICAL CONSULTING INC.

WELL NAME : CDN FOREST ET AL NORTH LIARD C-31A

SIDETRACK 3

CROSS SECTION

PILOT HOLE

HEF PETROPHYSICAL CONSULTING INC.

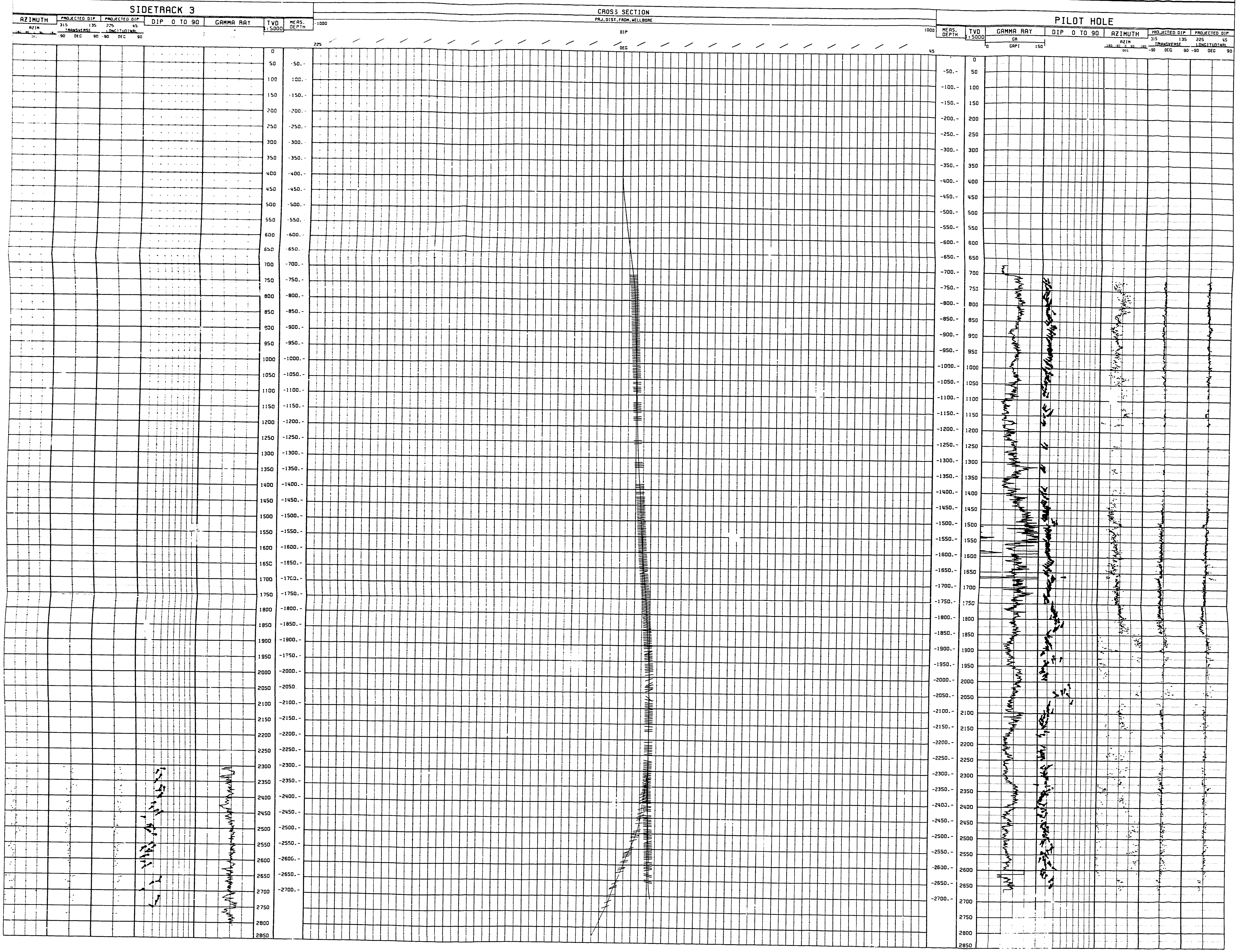
N.E.B. COPY

CONTINUED ON NEXT

HEF PETROPHYSICAL CONSULTING INC.

N.E.B. COPY

WELL NAME : CON FOREST ET AL NORTH LIARD C-31A



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HEF PETROPHYSICAL CONSULTING INC.

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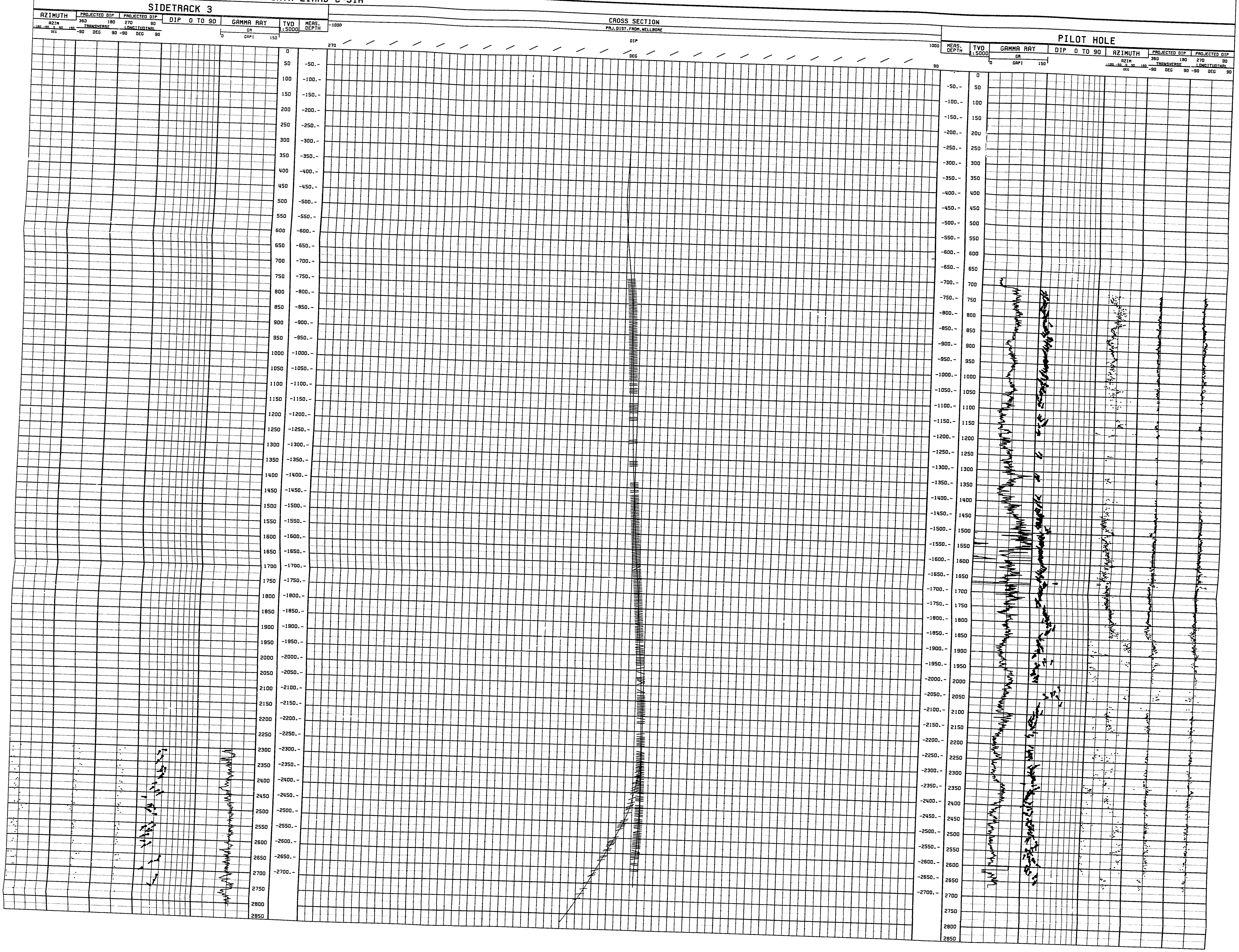

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HEF PETROPHYSICAL CONSULTING INC.

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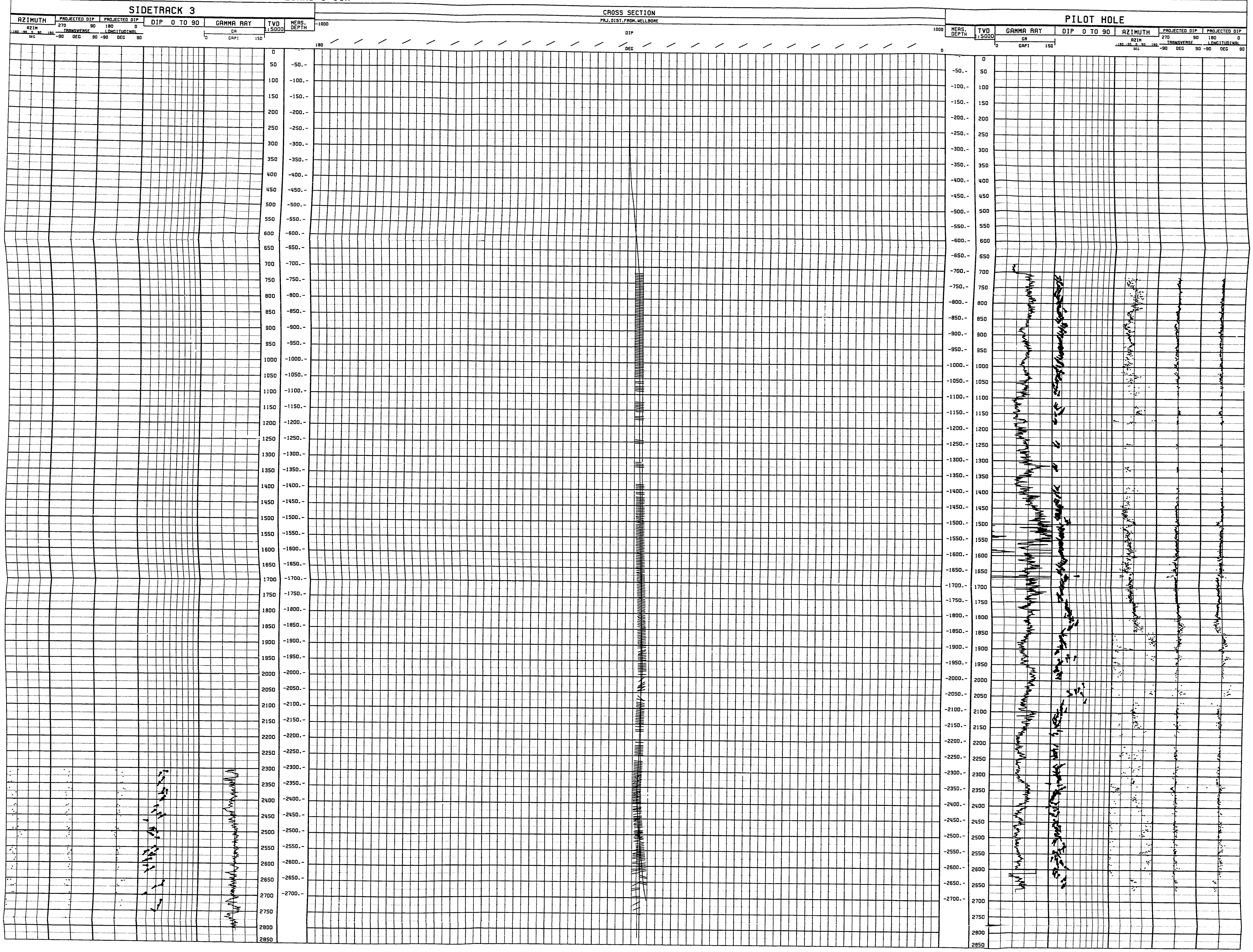

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WELL NAME : CON FOREST ET AL NORTH LIARD C-31A

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WELL NAME : CDN FOREST ET AL NORTH LIARD C-31A

SIDETRACK 3

CROSS SECTION

PILOT HOLE

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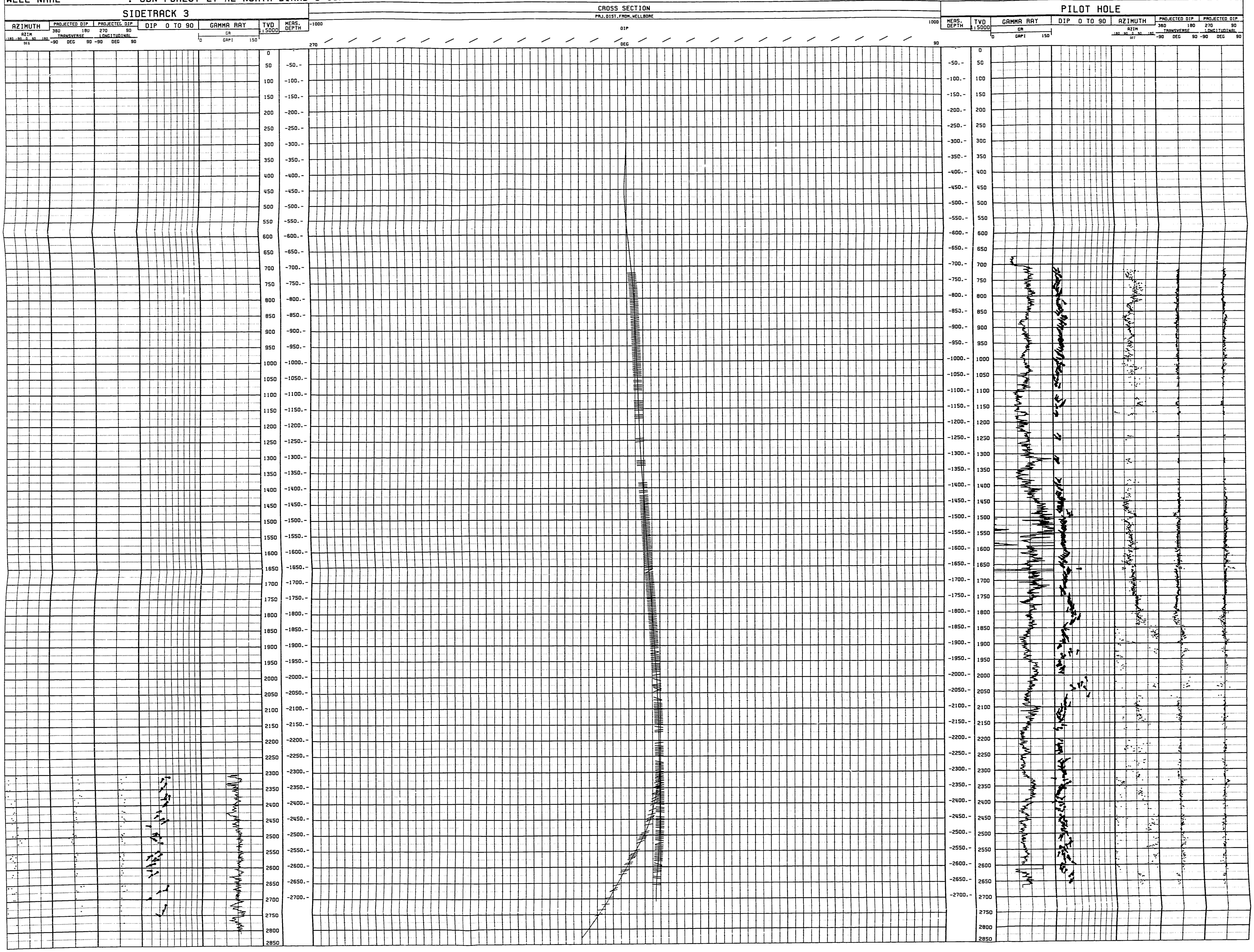
WELL NAME : CDN FOREST ET AL NORTH LIARD C-31A



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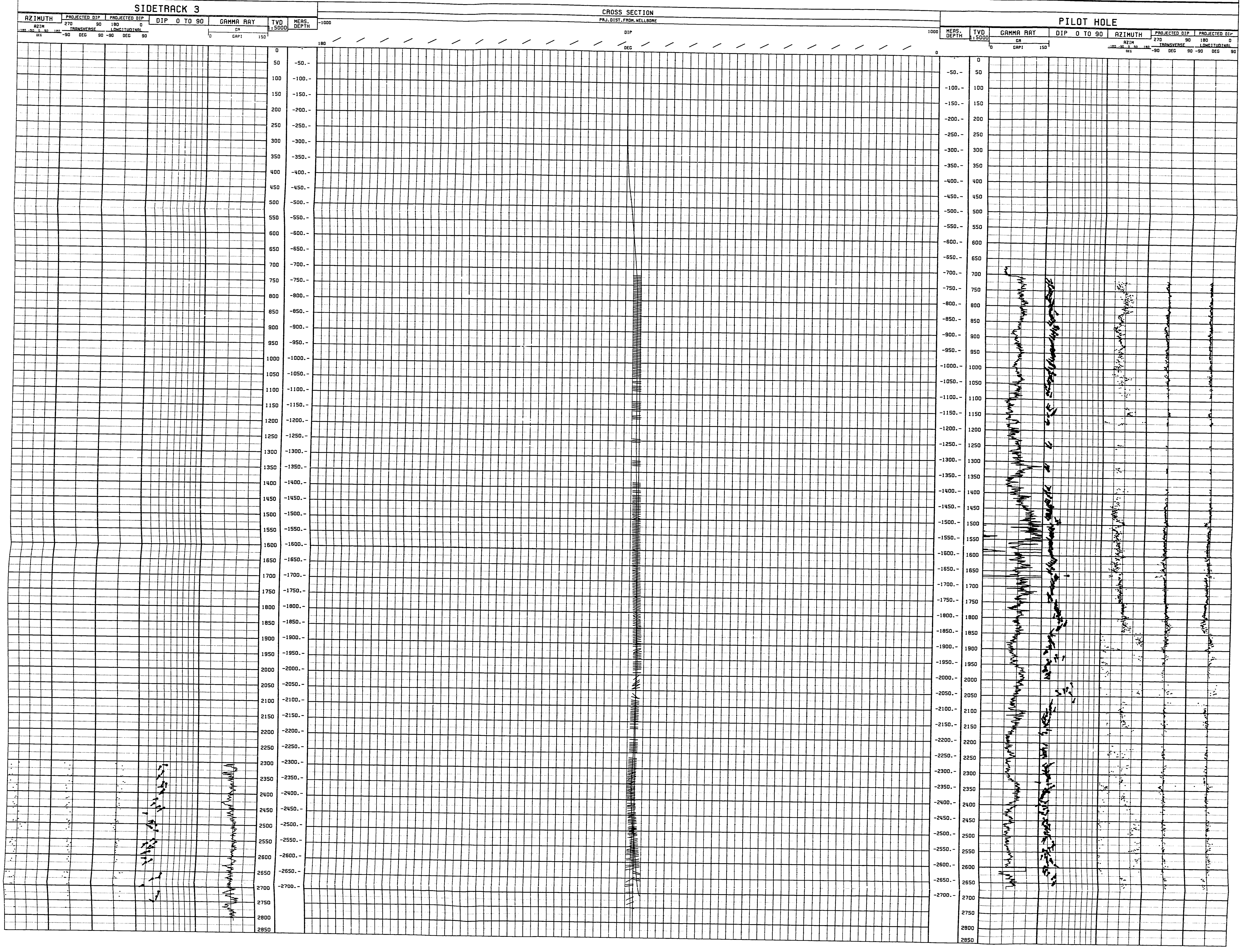
WELL NAME : CDN FOREST ET AL NORTH LIARD C-31A



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HEF PETROPHYSICAL CONSULTING INC.

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WELL NAME : CON FOREST ET AL NORTH LIARD C-31A

SIDETRACK 3

CONTINUED

TOUR SHEETS

CDN Forest et al
North Liard C-31A
Tour Sheets

WID 1907

FOLD HERE →

164683

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H₂S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Furnaces & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) [illegible] Checked		Initial

YEAR: 2001 MONTH: 04

RIG NO. 58

FUEL

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al North Liard C31

OPERATOR: [illegible]

CONTRACTOR: Akita Drilling Ltd.

SURFACE LOCATION: [illegible]

UNIQUE ID: 300-C31-60 [illegible] -123 30-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																					
DAY																					
EVE.																					
TOTAL																					

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_I / T_O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM / TO / DRG. RIG CORE / ROTARY R.P.M.

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

[illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_I / T_O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM / TO / DRG. RIG CORE / ROTARY R.P.M.

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_I / T_O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM / TO / DRG. RIG CORE / ROTARY R.P.M.

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial ____	Initial ____
(2) Detailed Inspection-Weekly (using checklist)	Initial ____	Initial ____
(3) H2S Signs Posted (4 required)	Initial ____	Initial ____
(4) Well License & Stick Diagram Posted	Initial ____	Initial ____
(5) Flare Lines Staked	Initial ____	Initial ____
(6) BOP Drills Performed	Initial ____	Initial ____
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial ____	Initial ____
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial ____
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial ____
(3) Mast Inspection Before Raising or Lowering		Initial ____
(4) Crown Saver Checked		Initial ____
(5) Motor Kills checked		Initial ____

YEAR 2001 MONTH 4 DAY 18

RIG NO. 58

FUEL @ 8:00

RIG | BOILER

WEATHER

TEMPERATURE °C

CURRENT CONDITIONS

WIND DIRECTION

ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
									5

SAFETY MTG.

TOTALS

SHALE SHAKERS

NO. | TYPE

SCREENS CHANGED ☐ YES ☐ NO

TOP | TOP

MIDDLE | MIDDLE

BOTTOM | BOTTOM

RENTALS SERVICES

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	Comp & RiG Watch
			Check Fuel Farm For leaks
			APRiL 18 2001

NOTES

Harry Patrick

0

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	Comp & RiG Watch
			Check Fuel Farm For leaks
			APRiL 19 2001

NOTES

Harry Patrick

0

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

NOTES

DRILLER SIGNATURE

164682

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LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest etal North Liard C31

OPERATOR:	CONTRACTOR:
Canadian Forest Oil	Akita Drilling LTD
SURFACE LOCATION:	UNIQUE ID.:
300-C31-6040-12330-0	300-C31-6040-12330-C
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well Licence & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 04

RIG NO. 58

FUEL

RIG | BOILER

WEATHER: TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPL. UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																				
DAY																				
EVE.																				
TOTAL																				

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS
D.P.	SINGLES
KELLYDOWN	
TOTAL	
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

Barry Patrick

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS
D.P.	SINGLES
KELLYDOWN	
TOTAL	
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

Barry Patrick

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS
D.P.	SINGLES
KELLYDOWN	
TOTAL	
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

Barry Patrick

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (3 required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Ins. action Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 04 DAY 15

RIG NO 58

FUEL @ 8:00

RIG | BOILER

WEATHER: TEMPERATURE °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)

SAFETY MTG. | TOTALS

SHALE SHAKER(S) | RENTALS SERVICES

NO. TYPE

SCREENS CHANGED ☐ YES ☐ NO

TOP | TOP

MIDDLE | MIDDLE

BOTTOM | BOTTOM

MORNING TOUR

RECORD

METRES DRILLED: FROM | TO | DRG RMR CORE | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

DEPTH (m) | DEVIATION (°) | DIRECTION

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	Rig & Camp Watch
			Check Fuel Farm for leaks
			APRIL 15 2001

NOTES

DAY TOUR

RECORD

METRES DRILLED: FROM | TO | DRG RMR CORE | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

DEPTH (m) | DEVIATION (°) | DIRECTION

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	Rig & Camp Watch
			Check fuel farm for leaks
			Change oil in Camp light Plant
			APRIL 16 2001

NOTES

EVENING TOUR

RECORD

METRES DRILLED: FROM | TO | DRG RMR CORE | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

DEPTH (m) | DEVIATION (°) | DIRECTION

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	Rig & Camp Watch
			Check fuel farm for leaks
			APRIL 17 2001

NOTES

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YEAR	MONTH
2001	04

RIG NO. 58

FUEL

RIG | BOILER

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest [illegible] North [illegible] C31

OPERATOR: [illegible]

CONTRACTOR: [illegible] LTD

SURFACE LOCATION: 300-C31-60-40-12230-[illegible]

UNIQUE ID.: 300-C31-60-40-12230-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

DAILY CHECKS — OPR. — R.M.

(1) Daily Walk Around Inspection — Initial ____ Initial ____
(2) Detailed Inspection-Weekly (using checklist) — Initial ____ Initial ____
(3) H2S Signs Posted (if required) — Initial ____ Initial ____
(4) Well License & Stick Diagram Posted — Initial ____ Initial ____
(5) Flare Lines Staked — Initial ____ Initial ____
(6) BOP Drills Performed — Initial ____ Initial ____
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial ____ Initial ____

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial ____
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial ____
(3) Mast Inspection Before Raising or Lowering — Initial ____
(4) Crown Saver Checked — Initial ____
(5) Motor Kills checked — Initial ____

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME - HRS

CODE NO.																					
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																					
DAY																					
EVE.																					
TOTAL																					

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T_i	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD-RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)

Gary Patrick

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T_i	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD-RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

Gary Patrick

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T_i	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD-RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

Gary Patrick

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DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial / Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial / Initial
(3) H2S Signs Posted (if required) — Initial / Initial
(4) Well License & Stick Diagram Posted — Initial / Initial
(5) Flare Lines Staked — Initial / Initial
(6) BOP Drills Performed — Initial / Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial / Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR 2001 MONTH 04 12
RIG NO 58
FUEL @ 8:00
RIG / BOILER

WEATHER: TEMPERATURE °C / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)

SAFETY MTG. / TOTALS

SHALE SHAKERS — NO. / TYPE — SCREENS CHANGED ☐ YES ☐ NO — TOP / MIDDLE / BOTTOM

RENTALS/SERVICES

MORNING TOUR

RECORD — METRES DRILLED: FROM / TO / DRLD RM-R CORE-C / ROTARY R.P.M. / WT. ON BIT (1000 daN)

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm) / S.P.M.

DEPTH (m) / DEVIATION (°) / DIRECTION

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	RiG & Camp Watch
			Check Fuel Form For leaks.
			[illegible]
			APRIL 13 2001

NOTES

Gary Tabak — 0

DAY TOUR

RECORD — METRES DRILLED: FROM / TO / DRLD RM-R CORE-C / ROTARY R.P.M. / WT. ON BIT (1000 daN)

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm) / S.P.M.

DEPTH (m) / DEVIATION (°) / DIRECTION

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	RiG & CampWatch
			Check Fuel Form For leaks.
			Clean UP lease & RiG
			APRIL 15 2001

NOTES

Gary Tabak — 0

EVENING TOUR

MUD RECORD — METRES DRILLED: FROM / TO / DRLD RM-R CORE-C / ROTARY R.P.M. / WT. ON BIT (1000 daN)

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm) / S.P.M.

DEPTH (m) / DEVIATION (°) / DIRECTION

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	RiG & Camp Watch
			Check Fuel Form For leaks.
			Clean UP lease & RiG.
			APRIL 14 2001 / APRIL 17 2001

NOTES

DRILLER'S SIGNATURE: Gary Tabak — 0

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well Licence & Sack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOPs - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible]

RIG NO. 58

FUEL @ 8:00 — RIG — BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest [illegible] North [illegible] C31

OPERATOR: [illegible]

CONTRACTOR: [illegible]

SURFACE LOCATION: [illegible]

UNIQUE ID: 3[illegible]-C31-[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

CODE NO.																					
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																					
DAY																					
EVE.																					
TOTAL																					

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(4) H₂S Signs Posted (if required)	Initial	Initial
(4) Well License & Slack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
01	04	09

RIG NO 58

FUEL @ 8:00

RIG	BOILER

WEATHER

TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)

SAFETY MTG.

TOTALS

SHALE SHAKER(S)

NO.	TYPE

SCREENS CHANGED ☐ YES ☐ NO

TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS SERVICES

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	8:00	12		Rig Watch
				Check Fuel Farm for leaks
				Clean lease & Rig
				Camp Watch
				APR 9 2001

NOTES

Harry Patrick | 0 | – | –

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12		Rig Watch
				Camp Watch
				Check Fuel Farm for leaks
				Clean lease & Rig
				APR 10 2001

NOTES

Harry Patrick | 0 | – | –

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12		Rig Watch
				Camp Watch
				Check Fuel Farm for leaks
				Clean lease & Rig
				[illegible]
				[illegible]

NOTES

DRILLER'S SIGNATURE

Harry Patrick | – | –

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164679

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H_2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 01 MONTH 07

RIG NO. 58

FUEL 8

RIG 1.25

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest [illegible] 631

OPERATOR:

CONTRACTOR:

SURFACE LOCATION:

UNIQUE ID.:

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: Dave [illegible]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																					
DAY																					
EVE.																					
TOTAL																					

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. REAM. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

FOLD HERE →

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial ___ Initial ___
(2) Detailed Inspection/Weekly (using checklist) — Initial ___ Initial ___
(3) H²S Signs Posted (if required) — Initial ___ Initial ___
(4) Well License & Stick Diagram Posted — Initial ___ Initial ___
(5) Flare Lines Staked — Initial ___ Initial ___
(6) BOP Drills Performed — Initial ___ Initial ___
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial ___ Initial ___

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial ___
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial ___
(3) Mast Inspection Before Raising or Lowering — Initial ___
(4) Crown Saver Checked — Initial ___
(5) Motor Kills checked — Initial ___

YEAR / MONTH / DAY

RIG NO.

FUEL @ 8:00

RIG 1.25 — BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)

SAFETY MTG.

TOTALS

SHALE SHAKER(S) — NO. TYPE; SCREENS CHANGED ☐ YES ☐ NO; TOP / TOP; MIDDLE / MIDDLE; BOTTOM / BOTTOM

RENTALS SERVICES

MORNING TOUR

RECORD

METRES DRILLED — FROM | TO | DRD RMR CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

[illegible]

NOTES [illegible] 3

DAY TOUR

RECORD

METRES DRILLED — FROM | TO | DRD RMR CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000	12	1	CLEAN RIG & LEASE
				DRAIN BOILER
				RIG OUT WATER LINES

NOTES

EVENING TOUR

RECORD

METRES DRILLED — FROM | TO | DRD RMR CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

2000 0800	CLEAN RIG & LEASE
	CLEAN MUD STORAGE AREA.

NOTES

DRILLER'S SIGNATURE

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164678

LICENCE NO.:	WELL NAME AND NO.:	
1900	Canadian Forest et al North Liard C31	
OPERATOR:	CONTRACTOR:	
Canadian Forest Oil	AK ... Drilling LTD	
SURFACE LOCATION:	UNIQUE ID.:	
300-C31-6040-12330-0	300-C31-6040-12330-0	
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]	SIGNATURE OF CONTRACTOR'S RIG MANAGER:	

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection - Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 04

RIG NO. 58

FUEL @ 8:0

RIG 1.28 BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME - HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.	8																				
DAY	8																				
EVE.	8																				
TOTAL	24																				

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RMG. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DI

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RMG. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RMG. CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H_2S Signs Posted (if required)	Initial	Initial
(4) W-4 License & Stock Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	04	07

RIG NO. 58

FUEL @ 8:00

RIG 1.28 | BOILER

	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
LAST CASING									
TUBING									
LINER									

WEATHER	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)

21 22 24 | TOTALS

SAFETY MTG.

SHALE SHAKER(S)

NO.	TYPE	
SCREENS CHANGED ☐ YES ☐ NO		
TOP		TOP
MIDDLE		MIDDLE
BOTTOM		BOTTOM

RENTALS SERVICES

RECORD — MORNING TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

[illegible]	[illegible]	[illegible]	1	Monitor Boiler & Wait [illegible]
[illegible]	[illegible]	7	1	[illegible] Rental Equipment
				[illegible]
				Wait on Trucks
				[illegible]

NOTES Boiler Blowdown 3X

8 | 165 | 350 —

RECORD — DAY TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000		1	CLEAN LEASE & MUD PRODUCT STORAGE SITE
				LOAD OUT 3½ RENTAL DRILL PIPE
				CLEAN RIG & WAIT ON TRUCKS
				REPLACE BRIDGE GATE Rubbers IN TANKS

NOTES

BOILER BLOWN DOWN 3X

8 | 165 | 350

RECORD — EVENING TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	2000			CLEAN RIG & WAIT ON TRUCKS
				LOAD OUT 3½ RENTAL [illegible]
				REPLACE STRAPS on Shaker BED
				[illegible]

NOTES [illegible] Blowdown 3X

8 | 165 | 350

FOLD HERE →

164677

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills Checked		Initial

YEAR 2001 MONTH 07

RIG NO. 53

LICENCE NO.: 1863

WELL NAME AND NO.: Canadian Forest etal North Liard C31

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita [illegible] Ltd

SURFACE LOCATION: 200-C31-040-12330-0

UNIQUE ID: 300-C31-60?0-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

FUEL / BOILER

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.																					
DAY																					
EVE.																					
TOTAL																					

DRILLING ASSEMBLY

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

D.P.	STANDS	m
D.P.	SINGLES	m
	KELLYDOWN	m
	TOTAL	m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

HOLE DRAG

TORQUE AT BOTTOM

PULL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRILL CORE C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

DRILLING ASSEMBLY

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

D.P.	STANDS	m
D.P.	SINGLES	m
	KELLYDOWN	m
	TOTAL	m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

HOLE DRAG

TORQUE AT BOTTOM

PULL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRILL CORE C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

DRILLING ASSEMBLY

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

D.P.	STANDS	m
D.P.	SINGLES	m
	KELLYDOWN	m
	TOTAL	m
WT. OF DC		1000 daN
WT. OF STRING		1000 daN

HOLE DRAG

TORQUE AT BOTTOM

PULL ON BOTTOM (m)

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRILL CORE C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

FOLD HERE →

DAILY CHECKS — OPR. — R.M.

1) Daily Walk Around Inspection — initial — initial
2) Detailed Inspection-Weekly (using checklist) — initial — initial
3) H2S Signs Posted (if required) — initial — initial
4) Well License & Stick Diagram Posted — initial — initial
5) Flare Lines Staked — initial — initial
6) BOP Drills Performed — initial — initial
7) Visually inspect BOPs - Pumps & Degasser Lines — initial — initial

1) Rig Site Health and Safety Meeting — initial
2) C.A.O.D.C. Rig Safety Inspection Checklist — initial
3) Mast Inspection Before Raising or Lowering — initial
4) Crown Saver Checked — initial
5) Motor Kills checked — initial

YEAR	MONTH	DAY
2001	7	26

RIG NO 575

FUEL @ 8:00

RIG | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

WEATHER

- TEMPERATURE °C
- CURRENT CONDITIONS
- WIND DIRECTION
- ROAD

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)

SAFETY MTG.

TOTALS: 5, 5, 5, 24

SHALE SHAKER(S) — NO. — TYPE

SCREENS CHANGED ☐ YES ☐ NO

TOP | TOP
MIDDLE | MIDDLE
BOTTOM | BOTTOM

RENTALS SERVICES

RECORD — DAYLIGHT TOUR

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

0800	20:00	12	1	
				FILL WATER TANK
				Started 1 Boiler at 0900 [illegible]
				TIE DOWN WINCH LINES IN DERRICK
				SCRUB RIG

NOTES Wait on Ice Bridge to Move Loads Across to [illegible] SITE.

RECORD — DAY TOUR

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

0800	2000	12	1	Pull Back Lines in Derrick
				Rig up Boiler #1
				Clean up Lease
				Rig out Site Trailers
				Wash Rig & Wait on Trucks

NOTES

BOILER Blown Down 3X

1 | 10.5 | 350

RECORD — EVENING TOUR

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

0800	20:00	12	1	Ready RIG TO move
				Clean up Rig & Lease.
				Wait on Truck
				Monitor Boiler on Night Shift.
				Help load out Rental equipment.

NOTES

Boiler Blown Down 3x

8 | 1149 | RIGGING OUT

FOLD HERE →

164676

LICENCE NO.:	WELL NAME AND NO.:
1800	CANADIAN FOREST et al NORTH LIARD C-31

OPERATOR:	CONTRACTOR:
CANADIAN FOREST OIL	AKITA DRILLING LTD

SURFACE LOCATION:	UNIQUE ID.:
300-C31-6040-12330-0	300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH
2001	04

RIG NO. 55

FUEL @ 8

RIG	BOILER

WEATHER	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.	9																				
DAY																					
EVE.																					
TOTAL																					

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

	m
D.P. STANDS	m
D.P. SINGLES	m
KELLYDOWN	m
TOTAL	m
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

	m
D.P. STANDS	m
D.P. SINGLES	m
KELLYDOWN	m
TOTAL	m
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIRECTION

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

	m
D.P. STANDS	m
D.P. SINGLES	m
KELLYDOWN	m
TOTAL	m
WT. OF DC	1000 daN
WT. OF STRING	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T1	T0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIRECTION

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H_2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
[illegible]	1 24	25

RIG NO 60

FUEL @ 8:00

RIG | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)

WEATHER	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
							F-1000	EMSCO	254
							F-1000	EMSCO	254

SAFETY MTG.	23	24	25	26	TOTALS
					8
					8
					8
					24

SHALE SHAKER(S)

NO. | TYPE

SCREENS CHANGED ☐ YES ☐ NO

TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS SERVICES

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs		Details
00:00	(7:00)	8	1	Rig Out Shop Prefabs
				Finish Rig Out of Matting Shack
				Clear Rig Floor of misc. [illegible]
				[illegible] Mud pumps. Lub. Shaf.

NOTES

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs		Details
0800	1500	7	1	Rig out Floor
				Bridle up Derrick & Inspect
				Lower Derrick, unspool Blocks
				Rig out Mud Tanks
				Rig out Hydraulic lines
				Pull power cords
				Derrick down at 0215

NOTES

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs		Details
1500	2200	7	1	Rig Out Steamlines
				Rig Out Electrical Cables.
				Clean Out Suction Lines
				Wash Rig Floor

NOTES

164675

FOLD HERE →

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al North Liard C-31

OPERATOR:	CONTRACTOR:
Canadian Forest Oil	Akita Drilling Ltd

SURFACE LOCATION:	UNIQUE ID.:
300-C31-040-12330-0	300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH
2001	07

RIG NO. 59

FUEL @ 8:0

RIG | BOILER

WEATHER: TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22				
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	WELLHEAD				
MORN.	5¼																					2¾				
DAY	8																									
EVE.	8																									
TOTAL	21¼																					2 3/4				

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour): D.P. STANDS m | D.P. SINGLES m | KELLYDOWN m | TOTAL m | WT. OF DC 1000 daN | WT. OF STRING 1000 daN

BIT RECORD: BIT NO. | SIZE (mm) | IADC CODE | MFG. | TYPE | SERIAL NO. | JETS (mm) | DEPTH OUT (m) | DEPTH IN (m) | TOTAL METRES DRILLED (m) | TOTAL HOURS RUN | CUTTING STRUCTURE T_1 T_2 MDC LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr. | HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD: TIME | DENSITY kg/m³ | FUNNEL VIS. - (S/L) | W.L. (cm³) | pH | PRODUCT | AMOUNT X UNIT | HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED: FROM | TO | DR-D RM-R CORE-C | ROTARY R.P.M. | LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | DEPTH (m) | DEVIATION (°) | DIR

DAY TOUR

DRILLING ASSEMBLY (At End of Tour): D.P. STANDS m | D.P. SINGLES m | KELLYDOWN m | TOTAL m | WT. OF DC 1000 daN | WT. OF STRING 1000 daN

BIT RECORD: BIT NO. | SIZE (mm) | IADC CODE | MFG. | TYPE | SERIAL NO. | JETS (mm) | DEPTH OUT (m) | DEPTH IN (m) | TOTAL METRES DRILLED (m) | TOTAL HOURS RUN | CUTTING STRUCTURE T_1 T_2 MDC LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr. | HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD: TIME | DENSITY kg/m³ | FUNNEL VIS. - (S/L) | W.L. (cm³) | pH | PRODUCT | AMOUNT X UNIT | HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED: FROM | TO | DR-D RM-R CORE-C | ROTARY R.P.M. | LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | DEPTH (m) | DEVIATION (°) | DIR

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour): D.P. STANDS m | D.P. SINGLES m | KELLYDOWN m | TOTAL m | WT. OF DC 1000 daN | WT. OF STRING 1000 daN

BIT RECORD: BIT NO. | SIZE (mm) | IADC CODE | MFG. | TYPE | SERIAL NO. | JETS (mm) | DEPTH OUT (m) | DEPTH IN (m) | TOTAL METRES DRILLED (m) | TOTAL HOURS RUN | CUTTING STRUCTURE T_1 T_2 MDC LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr. | HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD: TIME | DENSITY kg/m³ | FUNNEL VIS. - (S/L) | W.L. (cm³) | pH | PRODUCT | AMOUNT X UNIT | HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED: FROM | TO | DR-D RM-R CORE-C | ROTARY R.P.M. | LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | DEPTH (m) | DEVIATION (°) | DIRE

FOLD HERE →

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial ___ Initial ___
(2) Detailed Inspection-Weekly (using checklist) — Initial ___ Initial ___
(3) H²S Signs Posted (if required) — Initial ___ Initial ___
(4) Well License & Stick Diagram Posted — Initial ___ Initial ___
(5) Flare Lines Staked — Initial ___ Initial ___
(6) BOP Drills Performed — Initial ___ Initial ___
(7) Visually inspect BOPs - Flarelines & Degasser Lines — Initial ___ Initial ___

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial ___
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial ___
(3) Mast Inspection Before Raising or Lowering — Initial ___
(4) Crown Saver Checked — Initial ___
(5) Motor Kills checked — Initial ___

YEAR	MONTH	DAY
[illegible]1	[illegible]	[illegible]

RIG NO. 59

FUEL @ 8:00 — RIG ___ BOILER ___

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	216.80	79.64	[illegible]	HC-80	190	2[illegible]	.75	2[illegible]

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS
127	430	S55	80	165	[illegible]	
127	38.09	E3	101	162	-	
127	29.06	E2	108	152	4½ IF	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
F-1000	EMSCO	254
F-1000	EMSCO	254

SAFETY MTG.	
WELLHEAD	
2/4	
2/4	

TOTALS: 24

SHALE SHAKER(S)

NO. 2 TYPE Derrick FLC

SCREENS CHANGED ☐ YES ☐ NO

TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS SERVICES

TMS
AMI
Accum. Oil -

MORNING TOUR

RECORD

METRES DRILLED FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To			Details
00:00	02:[illegible]	3A	1	Nipple [illegible] B.O.P.'s & Flare Lines
02:[illegible]	0[illegible]	2A	22	[illegible]
0[illegible]	08:00	2	1	Rig out - Flare Lines & [illegible]
				Continue to clean mud tanks.
				Rig Released @ 06:00 hrs
				April 04 2001

NOTES

DAY TOUR

RECORD

METRES DRILLED FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To			Details
0800				Tear out power cords for Top Drive
	16[illegible]	[illegible]	1	Rig out Top Drive & Torque Tube

NOTES

EVENING TOUR

RECORD

METRES DRILLED FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To			Details
16:00	1900	3	1	Rig out Torque Tube
1900	2400	3	1	Rig out mud tanks & rig floor
				with walls, clear floor of Top
				Drive parts.
				Finish rig out flare lines, [illegible]
				[illegible] BOP control lines, [illegible]
				Clean out mud pump suction lines

NOTES

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164674

LICENCE NO.	WELL NAME AND NO.	
19[illegible]	Canadian Forest [illegible] North [illegible] 6-31	
OPERATOR	CONTRACTOR	
Canadian Forest Oil	Akita [illegible] Ltd.	
SURFACE LOCATION	UNIQUE ID	
200-6-31-[illegible]-123[illegible]-0	[illegible]	
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER	
[signature]	[signature]	

DAILY CHECKS — OPR. / R.M.

YEAR	MONTH
NO.	58

FUEL: 1.72

TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	[illegible]	DA. SET B.V.	TEST B.V.	Displace [illegible]
MORN.						5 1/4	1/4															1/2	1/4	1/2	1 1/4
DAY	1/2																				1/4	1/2	[illegible]	[illegible]	1/2
EVE.	[illegible]																								
TOTAL	1/2					5 3/4	1/4														1/4	1	1/4	1/2	1 3/4

DRILLING ASSEMBLY (At End of Tour)

			m
1	6.7	157.3	.37
1	Setting Tool		1.27
1	X/O [illegible]		.29
30	HWDP	127	275.67
		BHA =	277.60
69	D.P.	STANDS	
74	D.P.	SINGLES	1957.[illegible]
	KELLYDOWN		
	TOTAL		2255
WT. OF DC			
WT. OF STRING			75,000

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_1 / T_2 / MDC / LDC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	GRD. RAD. CORE	ROTARY R.P.M.
2941			
2257			

LINER SIZE (mm) / S.P.M. / LINER SIZE: 152 / 1[illegible]

DEPTH (m)	DEVIATION (°)	DIR.

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_1 / T_2 / MDC / LDC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

METRES DRILLED

FROM / TO / GRD. RAD. CORE / ROTARY R.P.M.

DEPTH (m) / DEVIATION (°) / DIR.

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN

CUTTING STRUCTURE: T_1 / T_2 / MDC / LDC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

METRES DRILLED

FROM / TO / GRD. RAD. CORE / ROTARY R.P.M.

DEPTH (m) / DEVIATION (°) / DIR.

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Derrick Inspection		
(3) H2S Signs Posted		
(4) Well Location & Sketch Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOPs		
(1) Rig Site Hazards and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR / MONTH / DAY

RIG NO. 13

FUEL @ 8:00 — 1.72 — BOILER

TEMPERATURE °C
CURRENT CONDITIONS
WIND DIRECTION
ROAD

LAST CASING / TUBING OR LINER	O.D (mm)	MIN I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2029.53

DC/DP SIZE	LINEAR MASS	GRADE	MIN ID	TOOL JT O.D	TYPE THREAD	NO. OF JOINTS
127	43.0	S95		165		
127	35.09	E3	101	162		
127	29.0	E3	103	162		

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
F-1000	EMSCO	254
F-1000	EMSCO	254

SAFETY MTG — Hammer ... BOP TEST ... Derrick ...

	½	¼	½	1½			
¼	½				¼		
9¼	1	9¼	1½	[illegible]	7¼	24	

NO. 2 Derrick F.L.C.
SCREENS CHANGED YES NO
TOP / MIDDLE / BOTTOM

RENTALS/SERVICES
TNIT 246375
AMS [illegible]
ACCUMULATION OIL 35

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT
2941				
2257				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	[illegible]	½	22	Prep & lay out BOP, [illegible]
[illegible]	[illegible]	¼	7	[illegible] ... 7 sec.
[illegible]	[illegible]	3½		Make Bridge plug tool & RIH on 5" DP to 2255m.
[illegible]	[illegible]	¼	29	Set bridge plug @ 2255.
[illegible]	6:45	¼	24	P.O.O.H to 2245 circ press test plug against ... to 7000 kPa
06:45	[illegible]	1¼	15	[illegible] water

NOTES: Crown Saver, Fastline Clamp, Deadline Anchor. Blow Dn Boiler 3X

... 1DS 2530

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	[illegible]30	½	2	Displace well to inhibited fresh water
[illegible]30	[illegible]45	¼	21	Safety meeting w/ lay down truck
[illegible]45	1500	6¼	22	Lay down 127mm DP & ... w/ laydown truck
1500	1530	½	22	Rig out laydown truck
1530	1600	½	1	Nipple down BOPs

NOTES: Crown Saver, Fastline Clamp, Deadline Anchor. Boiler Blowdown 3x

... 350

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2400	8	1	Nipple down BOPs & clean mud tanks.

NOTES: Blow boiler Dn 3X

... 350

164673

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LICENCE NO.	WELL NAME AND NO.
1900	Canadian Forest et al North Liard C-31

OPERATOR	CONTRACTOR
Canadian Forest Oil	Akita Drilling Ltd.

SURFACE LOCATION	UNIQUE ID
300-C31-6040-12330-0	300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS — OPR. — R.M.
(1) Daily Walk Around Inspection — Initial — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial — Initial
(3) H2S Signs Posted (if required) — Initial — Initial
(4) Well License & Sites Diagram Posted — Initial — Initial
(5) Flare Lines Staked — Initial — Initial
(6) BOP Drills Performed — Initial — Initial
(7) Visually inspect BOPs - Flarelines & Degasser Lines — Initial — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR / MONTH: 2001 / 02

RIG NO.: 59

FUEL @ 8:00 — RIG: 199 — BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME – HRS

	OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Open hole	Unstuck	Flow
MORN.						2½								3½									2		
DAY						¼	5¾	½																1¼	
EVE.						1¾	6¼																		¼
TOTAL						4½	12	½						3½									2	1¼	¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

	Cut Thread	
11	DC 3½	142.8 m
		1.6 m
		144.4 m
73	D.P. STANDS	
xx	D.P. SINGLES	2112.34
	KELLYDOWN	
	TOTAL	2256.[illegible]
	WT. OF DC	
	WT. OF STRING	

BIT RECORD: BIT NO. / SIZE (mm) / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS (mm) / DEPTH OUT (m) / DEPTH IN (m) / TOTAL METRES DRILLED (m) / TOTAL HOURS RUN / CUTTING STRUCTURE T, To, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr. / HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME	01:00	03:00	06:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	73	70	66
W.L. (cm³)	8.7	8.6	8.8
pH	10.5	10.5	11.0
P.V.T. m³	47.0	46.6	45.0

PRODUCT	AMOUNT X UNIT
Sulfamic Acid	6 sx
Soda Ash	2 sx

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED: FROM 2941 / TO / DRG. RMG. CORE-C / ROTARY R.P.M.

PUMP: 4950 / LINER SIZE (mm) 152 / S.P.M. / LINER SIZE (mm) 152

DEPTH (m) / DEVIATION (°) / DIR.

N/A

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
1	Scraper	1.11 m
1	Bit Sub	1.07 m
30	DC	272.[illegible] m
	BHA	277.50 m
69	D.P. STANDS	
xx	D.P. SINGLES	[illegible]
	Singles / KELLYDOWN	15.19 m
	Tie ... TOTAL	2257
	WT. OF DC	
	WT. OF STRING	67 000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD 14MS
SERIAL NO.	152159
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD: TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT
Ferric	4
Feric	15
Sea Lite	15
Soc Wool	15

METRES DRILLED: FROM 2941 / TO / DRG. RMG. CORE-C / ROTARY R.P.M.

LINER SIZE (mm) 152 / S.P.M. / LINER SIZE (mm) 152

DEPTH (m) / DEVIATION (°) / DIRECTION

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour): D.P. STANDS / D.P. SINGLES / KELLYDOWN / TOTAL / WT. OF DC / WT. OF STRING

BIT RECORD

BIT NO.	
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD 14MS
SERIAL NO.	152159
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (m)

MUD RECORD

TIME	19:30
DENSITY kg/m³	1655
FUNNEL VIS. - (S/L)	66
W.L. (cm³)	
pH	11.0
P.V.T. m³	41.6

PRODUCT / AMOUNT X UNIT

METRES DRILLED: FROM 2941 / TO / DRG. RMG. CORE-C / ROTARY R.P.M.

LINER SIZE (mm) 152 / S.P.M. / LINER SIZE (mm) 152

DEPTH (m) / DEVIATION (°) / DIRECTION

Trip Record
Actual - 12.35
Calc - 11.40
+ .95
N/A

73

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DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOPs - Flowlines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)	Initial	
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)	Initial	
(3) Mast Inspection Before Raising or Lowering	Initial	
(4) Crown Saver Checked	Initial	
(5) Motor Kills checked	Initial	

YEAR: [illegible] MONTH: 04 DAY: 02

RIG NO: 50

FUEL @ 8:00

RIG: 199 BOILER:

W E A T H E R	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	1.9	2023.9	[illegible]	2029.[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	43.00	S545	69	165			F-1000	EMSCO	254
127	35.09	E3	101	162			F-1000	EMSCO	254
127	29.06	E2	108	162	4½ IF				

DR. WORK	SAFETY MTG.	UPPER BAIL	WORK	FLOW		
	2					
		1¼				
			½			
	2	1¼	½			

TOTALS	SHALE SHAKER(S)	
8	NO./TYPE 2 DERRICK F.L.C	
8	SCREENS CHANGED ☐ YES ☐ NO	
8	TOP	TOP
8	MIDDLE	MIDDLE
24	BOTTOM	BOTTOM

RENTALS SERVICES

TMS - 554979

AMS 15428

ACCUMULATOR [illegible] - 35

MORNING TOUR

MUD RECORD

03:00	06:00
1660	1660
70	66
8.6	8.8
10.5	11.0
46.6	45.0

METRES DRILLED

FROM	TO	DRLG REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
4950	152		152	92

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
[illegible]	02:30	3½	13	[illegible] & WAIT ON CEMENT @ 2190
02:30	[illegible]	2	22	R.I.H. F/2188 TO 22[illegible] TO FIND
				TOP OF PLUG #2. (WASH DOWN)
[illegible]:30	08:00	2½	5	CIRC & WORK [illegible] F.

NOTES: [illegible] FASTLINE CLAMP, DEADLINE ANCHOR. [illegible]

[illegible] 108 350

DAY TOUR

MUD RECORD

METRES DRILLED

FROM	TO	DRLG REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0830	½	5	CIRC. & WORK PIPE
0830	1045	2¼	6	POOH [illegible] 30 [illegible]
1045	1115	½	7	RIG SERVICE: SERVICE TOP DRIVE
1115	1245	1½	6	POOH [illegible]
1245	1400	1¼	23	LAY DOWN 15 JTS. 3½ DP
1400	1600	2	6	M/U SCRAPER & RIH

TRIP [illegible] 2.74 m³

[illegible] 11.13 m³

[illegible] 2.36 m³

NOTES: [illegible] SAVER [illegible] CLAMP DEADLINE ANCHOR

[illegible] 3X

[illegible] 108 350 | 75000 | 6

EVENING TOUR

MUD RECORD

METRES DRILLED

FROM	TO	DRLG REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

DEPTH (m)	DEVIATION (°)	DIRECTION
TRIP TANK		
ACTUAL - 12.35		
CALCU - 11.40		
+ .95		

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1815	2¼	6	RIH W/SCRAPPER TAG CEMENT @ 2257m.
1815	19.45	1½	5	CIRC & WORK PIPE TILL HOLE CLEAN.
19.45	20:00	¼	2[illegible]	[illegible] @ 2256 m.
2000	2400	4	6	P.O.O.H. [illegible] 1900 & BHA OUT
				[illegible]

[illegible] 2258.40

CALCU - 2257.00

DIFF 1.40

NOTES: [illegible] SAVER FASTLINE CLAMP, DEADLINE ANCHOR.

[illegible] 3X

[illegible] 108 350 | 70000

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164672

LICENCE NO.:	1900
WELL NAME AND NO.:	Canadian Forest et al North Liard C-3
OPERATOR:	Canadian Forest Oil
CONTRACTOR:	[illegible] Ltd.
SURFACE LOCATION:	300-C-31-[illegible]
UNIQUE ID.:	[illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE	[illegible]
SIGNATURE OF CONTRACTOR'S RIG MANAGER	Dave Lauck

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (using checklist)
(3) H²S Signs Posted (if required)
(4) Well Licence & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually inspect BOP's - Flarelines & Degasser Lines

(1) Rig Site Health and Safety Meeting (one/crew/month)
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills checked

YEAR 2001 MONTH 07
RIG NO. 58
FUEL @ 8
RIG 1.01
WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

OPER.	Rig up & tear down	Drill actual	Reaming	Coring	Cond. mud & circ	Trips	Rig service	Repair rig	Cut off drill line	Dev survey	Wire line logs	Run case & cement	Wait on cement	Nipple up B.O.P.	Test B.O.P.	Drill stem test	Plug back	Squeeze cement	Fishing	Dir. work	Safety mtg.	LA [illegible]
MORN.					1½	1¼							4½				¾					
DAY						¾							10¾									2½
EVE													8									
TOTAL					1½	2							17¾				¾					2½

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)
- Cmt Stinger
- 15 DP 2⅞ 143.0
- 1 X/O 155/65 .55
- 144.42
- 71 D.P. STANDS 2035.94
- WT. OF STRING 65 000

MUD RECORD
TIME	01:00
DENSITY kg/m³	1660
FUNNEL VIS. - (S/L)	50
W.L. (cm³)	8.4
pH	10.5
P.V.T. m³	14.8

METRES DRILLED: FROM 2941

PUMP: 6500 | 152 | 15[illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)
- Cmt Stinger
- 15 DP 3½ 142.56
- 1 X/O [illegible] .55
- 144.45
- 71 D.P. STANDS
- W D.P. SINGLES 2155.10
- TOTAL 2180.[illegible]
- WT. OF STRING 65 000

MUD MATERIALS ADDED
PRODUCT	AMOUNT X UNIT
Soda Ash	6 sx
Lignite	3 sx
[illegible]	6 sx

METRES DRILLED: FROM 2941

PUMP: 5200 | 152 | 15[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)
- Cmt Stinger
- 15 DP 3½ 142.84
- 1 X/O 155/65 .55
- 144.45
- 71 D.P. STANDS
- 71 D.P. SINGLES 2055.[illegible]
- TOTAL 2180.0
- WT. OF STRING 65 000

MUD RECORD
TIME	21:00
DENSITY kg/m³	1660
FUNNEL VIS. - (S/L)	80
W.L. (cm³)	8.7
pH	10.5
P.V.T. m³	49.3

METRES DRILLED: FROM 2941

PUMP: 5020 | 152 | 15[illegible]

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial
(3) H²S Signs Posted (if required)	Initial [illegible]	Initial
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	09	31

RIG NO 48

FUEL @ 8:00

RIG 1.01 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.8	79.64	Lonestar	HS-80	194	2633.9	4.34	2029.5

WEATHER	°C
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	T. OL.JT O.D (mm)	TYPE THREAD	NO OF JOINTS
127	74.5	4¼		184	4½ IF	
127	43.00	S591	99	165		
127	38.09	E3	101	162		
127	29.06	E2	108	152	4½ IF	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
F-1600	EMSCO	254
F-1600	EMSCO	254

20	21	22	23	24	25	26	TOTALS
SAFETY MTG.	LH 1⅓ [illegible]						S
		2½					S
							S
							8
		2½					24

SHALE SHAKER(S)	
NO. 2 TYPE Derrick	F.L.C.
SCREENS CHANGED ☐ YES ☐ NO	
TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS SERVICES	
T.M.S.	502104
A.M.S.	10817
Accummulator Oil - 35	

MORNING TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6500	152		152	56

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	00:15	¼	6	P.O.O.H. TO 2400m. FLOW ✓
00:15	01:45	1½	5	CIRC.
01:45	02:30	¾	17	SPOT CMT PLUG # 2 @ 2400 TO 2280m.
02:30	03:30	1	6	POOH TO 2178.
03:30	0800	4½	13	CIRC & WORK PIPE & W.O.C.

PLUG #2 fr 2400m to 2280 EXCESS USED 100% SLURRY 15m³ 20 Tonne THERMAL 40 + 1% CFR. 4% LTR. 9 CFL-3 1% FWCA-H. PUMPED 4m³ VISSWEEP AHEAD & 1m³ H2O BEHIND 1m³ GOOD CMT RETURNS ON BOTTOMS UP

NOTES CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR. BOILER BLOWN. 2X

DRILLER SIGNATURE [illegible]

5	105 350	75,000.	CMT PLUGS	0

DAY TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5200	152		152	90

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1130	3½	13	CIRC. & WORK PIPE & W.O.C.
1130	1400	2½	2	LAY DOWN [illegible] D.P. w/[illegible] TRUCK
1400	1445	¾	6	RIH [illegible] STANDS FROM DERRICK
1445	1600	1¼	13	CIRC. & [illegible] & WAIT ON CEMENT

NOTES CROWN SAVER FASTLINE CLAMP DEADLINE ANCHOR BOILER BLOWN DOWN 2X

DRILLER SIGNATURE [illegible]

5	105 350	75000		0

EVENING TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5020	152		152	92

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2400	8	13	CIRC. & WAIT ON CEMENT @ 2199m.

NOTES

DRILLER SIGNATURE

8	105 350	65,000		0

164671

FOLD HERE →

YEAR	MONTH
2001	03

RIG NO. 59

FUEL

REC.	127	SOLD

TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	initial [illegible]	initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	initial [illegible]	initial [illegible]
(3) H_2S Signs Posted (if required)	initial [illegible]	initial [illegible]
(4) Well License & Stn. Diagram Posted	initial [illegible]	initial [illegible]
(5) Flare Lines Staked	initial [illegible]	initial [illegible]
(6) BOP Drills Performed	initial [illegible]	initial [illegible]
(7) Visually inspect BOPs - Flowlines & Degasser Lines	initial [illegible]	initial R2

(1) Rig Site Health and Safety Meeting	initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist	initial
(3) Mast Inspection Before Raising or Lowering	initial R2
(4) Crown Saver Checked	initial
(5) Motor Kills checked	initial

LICENCE NO.: 190[illegible]

WELL NAME AND NO.: [illegible] 4-31

OPERATOR: [illegible]

CONTRACTOR: [illegible] LTD.

SURFACE LOCATION: [illegible]

UNIQUE ID: [illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	WASH LU	ATTEMPT CIRC	UNPLUG	HIVAC
MORN.					3/4	6 1/2	1/4																1/2		
DAY						7 1/2	1/4																	1/4	1
EVE.					1 1/4	5																3/4			1
TOTAL					2	19	1/2															3/4	1/2	1/4	1

DRILLING ASSEMBLY — BIT RECORD — MUD RECORD (MORN.)

DRILLING ASSEMBLY	m
UNIT STINGER	
3 1/2	143.[illegible]
W [illegible]	.56
[illegible]	141.42
97 D.P. STANDS	
X D.P. SINGLES	2792.17
KELLYDOWN	
TOTAL	
WT. OF DC	
WT. OF STRING	

BIT RECORD: BIT NO., SIZE (mm), IADC CODE, MFG., TYPE, SERIAL NO., JETS (mm), DEPTH OUT (m), DEPTH IN (m), TOTAL METRES DRILLED, TOTAL HOURS RUN, CUTTING STRUCTURE (T, T_2, MDC, LDC), B, Gage, ODC, Reason Pulled, Total Run m/hr; HOLE DRAG, TORQUE AT BOTTOM, PILL ON BOTTOM (m)

MUD RECORD: TIME, DENSITY kg/m³, FUNNEL VIS. - (S/L), W.L. (cm³), pH

PRODUCT	AMOUNT X UNIT

HOURS RUN, INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRG. RAM CORE	ROTARY R.P.M.
2941			

LINER SIZE (mm), S.P.M., LINER SIZE (mm)

DEPTH (m)	DEVIATION (°)	DIR.

DRILLING ASSEMBLY — BIT RECORD — MUD RECORD (DAY)

DRILLING ASSEMBLY	m
CMT STINGER	
3 1/2	143.85
1 X/O RSIS	.56
RKB	141.43
75 D.P. STANDS	
XY D.P. SINGLES	2255.83
KELLYDOWN	
TOTAL	
WT. OF DC	
WT. OF STRING	

BIT RECORD: BIT NO., SIZE (mm), IADC CODE, MFG., TYPE, SERIAL NO., JETS (mm), DEPTH OUT (m), DEPTH IN (m), TOTAL METRES DRILLED, TOTAL HOURS RUN, CUTTING STRUCTURE (T, T_2, MDC, LDC), B, Gage, ODC, Reason Pulled, Total Run m/hr; HOLE DRAG, TORQUE AT BOTTOM, PILL ON BOTTOM (m)

MUD RECORD: TIME, DENSITY kg/m³, FUNNEL VIS. - (S/L), W.L. (cm³), pH

PRODUCT	AMOUNT X UNIT

HOURS RUN, INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRG. RAM CORE	ROTARY R.P.M.
2941			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
86	152		19

DEPTH (m)	DEVIATION (°)	DIR.

DRILLING ASSEMBLY — BIT RECORD — MUD RECORD (EVE.)

DRILLING ASSEMBLY	m
CMT STINGER	
3 1/2	143.85
X/O RSIS	.56
	144.41
75 D.P. STANDS	
XY D.P. SINGLES	2255.8[illegible]
KELLYDOWN	
TOTAL	2400.2[illegible]
WT. OF DC	
WT. OF STRING	1000

BIT RECORD: BIT NO., SIZE (mm), IADC CODE, MFG., TYPE, SERIAL NO., JETS (mm), DEPTH OUT (m), DEPTH IN (m), TOTAL METRES DRILLED, TOTAL HOURS RUN, CUTTING STRUCTURE (T, T_2, MDC, LDC), B, Gage, ODC, Reason Pulled, Total Run m/hr; HOLE DRAG, TORQUE AT BOTTOM, PILL ON BOTTOM (m)

MUD RECORD	
TIME	20:30
DENSITY kg/m³	1660
FUNNEL VIS. - (S/L)	80
W.L. (cm³)	8.6
pH	10.5
PST	7.9

PRODUCT	AMOUNT X UNIT

HOURS RUN, INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRG. RAM CORE	ROTARY R.P.M.
2941			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
9000	152		13

DEPTH (m)	DEVIATION (°)	DIR.

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Crownmatic Inspection Weekly Testing Checked	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Site Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's, Flowlines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting	Initial	
(2) C.A.O.D.C. Rig Safety Inspection Checklist	Initial	
(3) Mast Inspection Before Raising or Lowering	Initial	
(4) Crown Saver Checked	Initial	
(5) Motor Kills Checked	Initial	

YEAR / MONTH / DAY

RIG NO

FUEL @ 8:00

BOILER

127

WEATHER: TEMPERATURE °C / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2833	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS
127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	
127	78	[illegible]	[illegible]	[illegible]		
127	[illegible]	[illegible]	[illegible]	152		

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
F-1600	Emsco	254
F-1600	Emsco	254

SAFETY MTG	WASH LU	ATTEMPTING UNPLUG	
	1/2		
		1/4	
1/4			1
1/4	1/2	1/4	1

TOTALS: 24

SHALE SHAKERS: NO. 2, TYPE: Brandt F.L.C.

SCREENS CHANGED ☐ YES ☐ NO

TOP / MIDDLE / BOTTOM

RENTALS SERVICES:
TMS 391325
ARS 4828
ACCUM OIL

RECORD

MORNING TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

LINER SIZE (mm) / S.P.M. / LINER SIZE (mm) / S.P.M.

DEPTH (m) / DEVIATION (°) / DIRECTION

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0030	½	[illegible]	Finish RIH 5" D.P.
0030	0100	½	5	Circ
0100	0115	¼	7	[illegible] function annular [illegible]
0115	0515	4	6	[illegible]
0515	0545	½	23	Circ & string pressuring up. Attempt to circ. No success
0545	0615	½	6	POOH. 9 stds attempt to circ. No success.
0615	0800	1¾	6	P.O.H. plug string.

NOTES: Crown saver, fast line clamp, deadline anchor, brakes linkage. Blow dn boiler 3X

0 | 10.5 | 350 | 125 000 | TONSS.

RECORD

DAY TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
80	152		152	

DEPTH (m) / DEVIATION (°) / DIRECTION

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1400	6	6	POOH for plug string / [illegible]
1400	1415	¼	7	RIS function blind rams & [illegible]
1415	1430	¼	24	Clean out blocked cement tool
1430	1600	1½	6	R.I.H. fill pipe every [illegible] m

NOTES: [illegible] [illegible] [illegible] deadline anchor. Brakes. Blow [illegible] 3X

0 | 10.5 | 350 | [illegible]

RECORD

EVENING TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9000	152		152	90

DEPTH (m) / DEVIATION (°) / DIRECTION

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1900	3	6	RIH w/cement stinger to 2828.
1900	1945	¾	22	Wash dn f/ 2828 to 2941m.
1945	2100	1¼	5	Circ
2100	2200	1	25	Run cmt plug f/ f 2941 to 2841m. w/ Santec.
2200	2400	2	6	POOH to 2480m.

Plug #1 2941 → 2841m. Pressure tested lines, pump 4m³ H2O followed by 7.10m³ slurry of Thermal 40 + 1% CFR - 4% LTR - 7% CR-241% Flucan 9.5 Stone @ 1880 kg/m³ 50% excess. Pulled back to 2480m. No cmt returns

NOTES: Crown saver, fast line clamp, deadline anchor,

0 | 10.5 | 350 | 80,000 | cmt [illegible]

164670

FOLD HERE →

LICENCE NO.:	1800
WELL NAME AND NO.:	Canadian Forest et al North Liard C 31
OPERATOR:	Canadian Forest Oil
CONTRACTOR:	Hestia Drilling Ltd.
SURFACE LOCATION:	200-C31-H/60-12335-0
UNIQUE ID.:	200-C31-H/60-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	
SIGNATURE OF CONTRACTOR'S RIG MANAGER:	

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial / Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial / Initial
(3) H'S Signs Posted (if required) — Initial / Initial
(4) Well License & Stick Diagram Posted — Initial / Initial
(5) Flare Lines Staked — Initial / Initial
(6) BOP Drills Performed — Initial / Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial / Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR: 2001 | MONTH: 03 | RIG NO.: 56

FUEL @ 8 — RIG: 1.47 | BOIL

WEATHER: TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Hours of Test
MORN.		7¾					¼															
DAY																						
EVE.		1¼			1¾	11¼	¼			¼												1½
TOTAL		9			1¾	11	½			¼												1½

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MTR	166	6.62 m
1	EXT SUB RS		.72 m
1	MWD DC		9.26 m
1	EXT SUB		1.98 m
2	NM FLEX		18.39 m
1	X/O		.45 m
7	HWDP		64.51 m
1	JAR		6.0 m
23	HWDP		210.36 m
		BHA	319.36 m
91	D.P.	STANDS	m
xx	D.P.	SINGLES	2620.35 m
	KELLYDOWN		.67 m
	TOTAL		2941 m
WT. OF DC		15 000	1000 daN
WT. OF STRING		95 000	1000 daN

BIT RECORD

BIT NO.	27M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP467L
SERIAL NO.	P32DP
JETS (mm)	3 X 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	46
TOTAL HOURS RUN	7¾

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG: 10/122000 WT STATIC
TORQUE AT BOTTOM: 10/14000 FILL
FILL ON BOTTOM (m):

MUD RECORD

TIME	00:00	03:00	06:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	81	80	80
W.L. (cm³)	7.5	8.0	7.5
pH	10.5	10.5	10.5
P.V.T. m³	91.8	92.6	92.7

PRODUCT	AMOUNT X UNIT
Lime	2 sxs
Biocide	1 PL
Sod Sulfite	1 SX

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRD RMR CORE C	ROTARY R.P.M.
2936	2941	5	30 MTR 100

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12 200	152		152
9000		139	

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS | D.P. SINGLES | KELLYDOWN | TOTAL | WT. OF DC (1000 daN) | WT. OF STRING (1000 daN)

BIT RECORD

BIT NO.	27M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP467L
SERIAL NO.	P32DP
JETS (mm)	3x17.5
DEPTH OUT (m)	2941.5
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	46.5
TOTAL HOURS RUN	7¾

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG:
TORQUE AT BOTTOM:
FILL ON BOTTOM (m):

MUD RECORD

TIME	08:00	10:00
DENSITY kg/m³	1660	1660
FUNNEL VIS. - (S/L)	80	76
W.L. (cm³)	7.5	7.8
pH	10.5	10.5
P.V.T. m³	93.3	85.5

PRODUCT	AMOUNT X UNIT
Biocide	1 Pl
Sulfite	1 sx
Barite	27 sx
Lignite	1 sx

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRD RMR CORE C	ROTARY R.P.M.
2941	2941.5	½	30 MTR

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12000	152		152
9000		139	

DEPTH (m)	DEVIATION (°)	DIR
2927.13	351	

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

Out String	
3¾	1422.06
X/O	.55
BHA	1422.6

D.P. STANDS | D.P. SINGLES | KELLYDOWN | TOTAL | WT. OF DC (1000 daN) | WT. OF STRING (1000 daN)

BIT RECORD

BIT NO.	27M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP467L
SERIAL NO.	P32DP
JETS (mm)	3 X 17.5
DEPTH OUT (m)	2941.5
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	46½
TOTAL HOURS RUN	7¾

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.
4 | 4 | ... | -

HOLE CONDITION

HOLE DRAG:
TORQUE AT BOTTOM:
FILL ON BOTTOM (m):

MUD RECORD

TIME | DENSITY kg/m³ | FUNNEL VIS. - (S/L) | W.L. (cm³) | pH

PRODUCT | AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM | TO | DRD RMR CORE C | ROTARY R.P.M.

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		152

DEPTH (m) | DEVIATION (°) | DIRE

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH / DAY: [illegible]

RIG NO: 59

FUEL @ 8:00 — RIG: 1.47 — BOILER:

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	21.7	71.17	LONESTAR	[illegible]	197	2622.84	1.35	2624.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS
127	43.2	[illegible]	55	165	4½ IF	
127	38.69	E3	101	162	4½ IF	
127	29.06	E2	105	152	4½ IF	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
F-1000	EMSCO	254
F-1000	EMSCO	254

DR. WORK	SAFETY MTG.	
	Hazard Ext	
	1½	
	1½	

TOTALS: 8, 8, 8, 24

SHALE SHAKER(S): NO. TYPE: Milvitch F.L.C.

SCREENS CHANGED ☐ YES ☐ NO

TOP / TOP; MIDDLE / MIDDLE; BOTTOM / BOTTOM

RENTALS SERVICES:
T.M.S 508302
A.M.S E819
Accum Oil .35

MORNING TOUR

MUD RECORD

03:00	06:00
1660	1660
80	80
8.0	7.5
10.5	10.5
92.6	92.7

METRES DRILLED FROM	TO	DRD RMR CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2936	2941	5	30 MTR 100	16

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12,200	152		152	55

9000 — 134 — 50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
00:00	04:45	4¾	2	DRILL F/2936m-2939m. ROTATE
04:45	05:00	¼	7	R/S. FUNCTION HANNAH % 15 SEC.
05:00	08:00	3	2	DRILL F/2939 - 2941 ROTATE

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILER BLOWN DOWN 3X

8 | 105 | 350 | 130,000 | HOUSE KEEPING | 0

DAY TOUR

MUD RECORD

10:00
1600
80
7.8
10.5
85.5

METRES DRILLED FROM	TO	DRD RMR CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2941	2941.5	½	30 MTR	16

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12,400	152		152	55

9000 — 133 — 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2927.13	35°	[illegible] E

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	0815	¼	2	DRILL F/2941m TO 2941.13m ROTATE
0815	0830	¼	10	SURVEY @ 2927.13
0830	0930	1	2	DRILL F/2941.13m TO 2941.5 ROTATE
0930	1115	1¾	5	CIRC. BOTTOM HOLE SAMPLE
1115	1130	¼	7	R/S FUNCTION [illegible]
1130	1600	4½		[illegible] CEMENT PLUG
				Flow [illegible] 05.35, 50, Hw
				STRAP OUT 2941.98 m
				RECORD HOLE DEPTH 2941.56 m
				DIFF = 0.42 m

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILER BLOWN DOWN 3X

8 | 105 | 350° | 130,000 | | 0

EVENING TOUR

MUD RECORD

METRES DRILLED FROM	TO	DRD RMR CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2941				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	2030	4½	22	POOH FOR CEMENT PLUGS
2030	2315	3¼	6	[illegible] RUN 3½" CMT STINGER ON 5" DP TO 711 m.
2315	2400	¾	6	PICK UP 17 STS. of 5" DP.

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR.

8 | 105 | 350 | | HOUSE KEEPING | 0

FOLD HERE →

164669

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al North Liard C31

OPERATOR:	CONTRACTOR:
Canadian Forest Oil	Ak to Drilling LTD

SURFACE LOCATION:	UNIQUE ID.:
300-C31-6040-12330-0	300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]
SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial — Initial
(3) H2S Signs Posted (if required) — Initial — Initial
(4) Well License & Stick Diagram Posted — Initial — Initial
(5) Flare Lines Staked — Initial — Initial
(6) BOP Drills Performed — Initial — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR 2001 | MONTH 02 | RIG NO. 58

FUEL @ 8: RIG 1.87 | BOILER

WEATHER: TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.		8																			
DAY		7½					¼			¼											
EVE.		8																			
TOTAL		23½					¼			¼											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MTR	166	6.62 m
1	FS RS	163 166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.82 m
23	HWDP	127	210.51 m
		BHA	319.36 m
91	D.P.	STANDS	2611.08 m
	D.P.	SINGLES	m
Stick up / KELLYDOWN			6.25 m
	TOTAL		2927.0 m
WT. OF DC		19000 daN	
WT. OF STRING		95000 daN	

BIT RECORD

BIT NO.	27M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP4876
SERIAL NO.	P32DP
JETS (mm)	3x17.5
DEPTH OUT (m)	
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	32
TOTAL HOURS RUN	49½
CUTTING STRUCTURE (T, T₀, MDC, LOC), B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	10000 TV Rotate
TORQUE AT BOTTOM	10-14000 ft/lbs
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	02:00	04:30	06:30
DENSITY kg/m³	1665	1665	1665
FUNNEL VIS. - (S/L)	83	83	83
W.L. (cm³)	8.0	7.4	7.2
pH	10.5	10.5	10.3
PVT m³	84.8	84.4	85.2

PRODUCT	AMOUNT X UNIT
Sod. Sulfite	2 Sx
Desco	2 Sx
Lignite	1 Sk
Biocide	1 pl
Potassium	29

METRES DRILLED

FROM	TO	DRLG/REAM/CORE	ROTARY R.P.M.
2924	2927	3	30 + MTR

	LINER SIZE (mm)	S.P.M.
12400	152	85
9000		50

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MTR	166	6.62 m
1	FS Sub RS Sub	165 166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	JAR	174	5.82 m
23	HWDP	127	210.51 m
		BHA	319.36 m
91	D.P.	STANDS	m
x	D.P.	SINGLES	2620.77 m
	KELLYDOWN		1.56 m
	TOTAL		2932 m
WT. OF DC		19 000 daN	
WT. OF STRING		95 000 daN	

BIT RECORD

BIT NO.	27 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP4876
SERIAL NO.	P32DP
JETS (mm)	3 X 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	37
TOTAL HOURS RUN	57
CUTTING STRUCTURE (T, T₀, MDC, LOC), B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	8/10 VT Rotate
TORQUE AT BOTTOM	10/14 ft lbs.
FILL ON BOTTOM (m)	

MUD RECORD

TIME	09:00	11:30	14:00
DENSITY kg/m³	1660	1660	1655
FUNNEL VIS. - (S/L)	85	82	80
W.L. (cm³)	7.5	7.5	8.0
pH	10.0	10.0	10.0
P.V.T. m³	86.1	85.6	86.3

PRODUCT	AMOUNT X UNIT
Biocide	1 Pl
Caustic	1 Sx
Sod. Sulfite	1 Sx
~~Barite~~	
Lime	2 sxs
Barite	112 Sx

METRES DRILLED

FROM	TO	DRLG/REAM/CORE	ROTARY R.P.M.
2927	2932	5	30 + MTR

	LINER SIZE (mm)	S.P.M.
12150	152	85

DEPTH (m)	DEVIATION (°)
2917.4	35.2

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	MTR FS	6.62 .75 m
1	RS	.75 m
1	MWD DC	9.26 m
1	Ext Sub	1.98 m
2	NM Flex	18.38 m
1	X/O	.48 m
7	HW	64.56 m
1	JR	5.82 m
23	HW	210.51 m
	BHA-	319.36 m
91	D.P. STANDS	m
x	D.P. SINGLES	2620.77 m
	KELLYDOWN	4.16 m
	TOTAL	2934.0 m
WT. OF DC	19000 daN	
WT. OF STRING	95000 daN	

BIT RECORD

BIT NO.	27M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Hughes
TYPE	EP4876
SERIAL NO.	P32DP
JETS (mm)	3x17.5
DEPTH OUT (m)	
DEPTH IN (m)	2895
TOTAL METRES DRILLED (m)	41
TOTAL HOURS RUN	65
CUTTING STRUCTURE (T, T₀, MDC, LOC), B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	10/12000 Rotating
TORQUE AT BOTTOM	10/14000 FT/LBS
FILL ON BOTTOM (m)	

MUD RECORD

TIME	17:00	20:00	22:00
DENSITY kg/m³	1655	1660	1660
FUNNEL VIS. - (S/L)	79	78	79
W.L. (cm³)	7.5	7.8	8.0
pH	10.5	10.5	10.5
P.V.T. m³	90.0	91.1	91.6

PRODUCT	AMOUNT X UNIT

METRES DRILLED

FROM	TO	DRLG/REAM/CORE	ROTARY R.P.M.
2932	2936	4	30 MTR

	LINER SIZE (mm)	S.P.M.
11800	152	85

DEPTH (m)	DEVIATION (°)

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Site's Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
[illegible]	[illegible]	[illegible]

RIG NO 55

FUEL @ 8:00

RIG 1.87 BOILER

	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
LAST CASING TUBING OR LINER	177.8	156.7	77.41	Lonestar	HC80	1??	263?.89	6.35	26?9.5

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.55	HW	77	184		31			
127	42.0	S545	98	165	4½ IF	54	F-1000	Emsco	254
127	38.09	E3	101	162		131	F-1000	Emsco	254
127	29.06	E3	108	156		149			

DIR. WORK	SAFETY MTG.						TOTALS
							8
							8
							8
							24

SHALE SHAKERS

NO. 2 Derrick F.L.C.

SCREENS CHANGED ☐ YES ☐ NO

TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS / SERVICES

TmJ. 383883

IntJ. 4296

Accumulat. 36

MORNING TOUR

RECORD

04:30	06:30
1665	1665
83	83
7.4	7.2
10.5	10.3
84.4	85.2

METRES DRILLED

FROM	TO	DRLD. REAM CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2924	2927	3	50	15
			Mtr 100	30-35

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12400	152	85	152	—

9000 | 50

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0000	0145	1¾	2	Drill F/2924m - 2925m Slide
0145	[illegible]	6¼	2	Drill F/2925m - 2927m Rotate

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage

Boiler Blowdown 3X Function Rotating head

[illegible] | 8 | 10.5 | 350 | 145000 daN | Picking up Pipe | 0

DAY TOUR

RECORD

11:30	14:00
1660	1655
82	80
7.5	8.0
10.0	10.0
85.6	86.3

METRES DRILLED

FROM	TO	DRLD. REAM CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2927	2932	5	30 + Mtr	15
			Mtr = 100	33

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10,150	152	85	152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION
2917.4	35.2	273.3

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

08:00	10:30	2½	2	Drill F/2927m - 2929m. Rotate
10:30	10:45	¼	7	R/S. Function Top Pipe Rams & Test
10:45	1500	4¼	2	Drill F/2929 - 2931m Rotate
15:00	1515	¼	10	Survey @ 2917.4
1515	16:00	¾	2	Drill F/2931m to 2932m Rotate

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor.

Boiler Blown Dn 3x

[illegible] | 8 | 10.3 | 350 | 130 000 | Tooling Kelly & Lined

EVENING TOUR

RECORD

20:00	22:00
1660	1660
78	79
7.8	8.0
10.5	10.5
91.1	91.6

METRES DRILLED

FROM	TO	DRLD. REAM CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2932	2936	4	30 Mtr 110	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11860	152	85	152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

16:00	24:00	8	2	Drill F/2932m to 2936m

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor

Boiler Blown Down 3x

[illegible] | 8 | 10.5 | 350 | 130 000 | Housekeeping | 0

164654

FOLD HERE →

LICENCE NO.: 1900	WELL NAME AND NO.: CDN FOREST OIL NORTH [illegible] 31A	
OPERATOR: Canadian Forest Oil [illegible]	CONTRACTOR: [illegible] Drilling Ltd	
SURFACE LOCATION: 300-C31-I-40-12330-0	UNIQUE ID: 300-C31-I-40-12330-0	
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [illegible]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [illegible]	

DAILY CHECKS — OPR. / R.M.
(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (using checklist)
(3) H²S Signs Posted (if required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually inspect BOP's - Flarelines & Degasser Lines
(1) Rig Site Health and Safety Meeting (one/crew/month)
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills checked

2001 | 8 | RIG NO. 53 | FUEL | RIG 144 | TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG.	FLOW	Mixing Tank	WASH
MORN.					7																	1		
DAY					3¼	1½																¼	1½	
EVE.						5¾	½																	2
TOTAL																								

MORNING TOUR

Drilling Assembly

1			.25 m
1	Motor	165	8.20 m
1	Float Sub / Reamer	163 / 166	.75 m
1	Mud DC	157	9.26 m
1	NMF Sub	169	1.95 m
2	NMFlex	162	19.39 m
1	X/O	164	.48 m
7	HWDP	127	64.36 m
1	JAR	174	5.91 m
22	HWDP	127	210.54 m
	BHA		318.91 m
86	D.P.	STANDS	m
7	D.P.	SINGLES	1959.9 m
	KELLYDOWN		m
	TOTAL		2278.20 m
	WT. OF DC		[illegible]
	WT. OF STRING		

Bit Record

BIT NO.	24 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	HUGHES
TYPE	EP457L
SERIAL NO.	P31DP
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2791
TOTAL METRES DRILLED (m)	1
TOTAL HOURS RUN	1½
CUTTING STRUCTURE	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

Mud Record

TIME	02:00	04:00	06:00
DENSITY kg/m³	1630	1630	1620
FUNNEL VIS. - (S/L)	110	110	120
W.L. (cm³)			
pH	10.0	10.0	10.5
R.V.T m³	69.4	72.1	75.5

PRODUCT	AMOUNT X UNIT
GEL	63 sxs
Lignite	4 sxs
Soda Ash	2 sxs
[illegible]	28 sxs
[illegible]	1 PL
[illegible]	1 PL
[illegible]	1 PL
BARITE	378 sxs

Metres Drilled

FROM	TO	ORD RAM CORE-C	ROTARY R.P.M.
2792			

	LINER SIZE (mm)	S.P.M.	LINER SIZE
7800	152		15

DEPTH (m) | DEVIATION (°)

DAY TOUR

Drilling Assembly

	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
	WT. OF DC		
	WT. OF STRING		

Bit Record

BIT NO.	24
SIZE (mm)	215.9
IADC CODE	4 3 7 X
MFG.	HUGHES
TYPE	EP467L
SERIAL NO.	P31DP
JETS (mm)	3 x 17.5
DEPTH OUT	2792
DEPTH IN	2791
TOTAL METRES DRILLED	1
TOTAL HOURS RUN	1½
CUTTING STRUCTURE	1 1 BT H E I CT WO —
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

Mud Record

TIME	06:00
DENSITY kg/m³	1675
FUNNEL VIS. - (S/L)	78
W.L. (cm³)	6.2
pH	10.5
R.V.T	78.2

PRODUCT	AMOUNT X UNIT
Lime	2 sks
Barite	[illegible]
[illegible]	16 [illegible]
[illegible]	[illegible]
Gel	15 [illegible]
Lignite	2 sk
[illegible]	1 [illegible]
[illegible]	10 sk

Metres Drilled

FROM	TO	ORD RAM CORE-C	ROTARY R.P.M.
2792			

	LINER SIZE (mm)	S.P.M.	LINER SIZE
	152		15

DEPTH (m) | DEVIATION (°)

EVENING TOUR

Drilling Assembly

1			.25 m
1	Bit Sub	160	1.47 m
1	DC	165	9.46 m
1	X/O	174	0.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.89 m
23	HWDP	127	211.51 m
	BHA		293.62 m
37	D.P.	STANDS	2494.65 m
X	D.P.	SINGLES	9.65 m
	KELLYDOWN		m
	TOTAL		2790.06 m
	WT. OF DC		16000
	WT. OF STRING		[illegible]

Bit Record

BIT NO.	25 RR
SIZE (mm)	215.9
IADC CODE	4 3 7 X
MFG.	HUGHES
TYPE	EP487L
SERIAL NO.	P31DY
JETS (mm)	OPEN
DEPTH OUT	
DEPTH IN	2792
TOTAL METRES DRILLED	
TOTAL HOURS RUN	
CUTTING STRUCTURE	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

Mud Record

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT
[illegible]	1 sk
[illegible]	1 sk
[illegible]	15 sk
[illegible]	1 [illegible]
Barite	145 sk
Sawdust	10 sk

Metres Drilled

FROM	TO	ORD RAM CORE-C	ROTARY R.P.M.
2792			70

	LINER SIZE (mm)	S.P.M.	LINER SIZE
9200	152		15

DEPTH (m) | DEVIATION (°)

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well Location & Stitch Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOP's - Flowlines & Connection Lines		
(1) Rig Tour Hazards and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection, Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) MSDS Information		

2001 05 14

RIG NO. 53

FUEL @ 8:00

144 BOILER

	TEMPERATURE °C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D (mm)	MIN I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.4	Lonestar	Hc	80/159	2633.9	6.3	2029.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS
127	34.35	H40	79	149	4½ IF	
127	38.49	E3	101	162	4½ IF	
127	27.02	F2	109	156	4½ IF	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
F-1000	EMSCO	254
F-1000	EMSCO	254
F-800	EMSCO	228

SAFETY MTG.			
Flow ✓	Mixing Pill	Rathole	
1			
1/1	1½		
	2		

TOTALS: 8, 8, 8, 24

SHALE SHAKERS: 2 Derrick FLC

SCREEN CHANGED ☐ YES ☐ NO

TOP / TOP — MIDDLE / MIDDLE — BOTTOM / BOTTOM

TOTAL MI 569079
ACCUM MI 7208
ACCUM [illegible] 36

RECORD

04:00	06:00
1630	1620
110	120
10.0	10.5
72.1	75.5

METRES DRILLED FROM	TO	DRG. HOUR CORE	ROTARY RPM	WT ON BIT (1000 daN)
2792				

PUMP PRESS	LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
7600	152		152	57

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
[illegible]	[illegible]	1	22	Flow ✓ Observe for losses. - Static
[illegible]	[illegible]	7	5	Circ. & Build Volume. Condition Mud.

NOTES: Crown [illegible] Fastline Clamp [illegible]

5 [illegible] | 10.000 | Loader [illegible]

RECORD

METRES DRILLED FROM	TO	DRG. HOUR CORE	ROTARY RPM	WT ON BIT (1000 daN)
2792				

LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0835	½	5	Circ. & Build Volume / Condition Mud
0835	0900	½	22	Flow ✓
0900	1430	5½	6	POH Flow ✓ 5, 10, 5, 35 HW Top of Hole
1430	1600	1½	3	L/D MWD & Motor Tools

TRIP RECORD
CALC 13.66 m^3
MEAS 15.70 m^3
DIFF 1.04 m^3

NOTES: ✓ Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blow Down 3x

5 [illegible] 350 | 10000

RECORD

METRES DRILLED FROM	TO	DRG. HOUR CORE	ROTARY RPM	WT ON BIT (1000 daN)
2792			70	

PUMP PRESS	LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
4200	152		152	85

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1615	¼	7	K/S Function Blind Rams Secs. 4/5
1615	2200	5¾	6	M/U BHA & TIH
2200	2400	2	24	Wash F/2738 T 2770

NOTES: ✓ Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blow Down 3x

5 [illegible] | 120.000 | Loader [illegible]

FOLD HERE →

164653

LICENCE NO.: 1900	WELL NAME AND NO.: CDN FOREST ET AL NORTH LIARD C-31-A
OPERATOR: CANADIAN FOREST OIL LTD	CONTRACTOR: HEITH DRILLING LTD
SURFACE LOCATION: 300-C31-60-40-12330-1	UNIQUE ID.: 200-C31-6040-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 03

RIG NO 58

FUEL @ 8:

RIG 115

WEATHER	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	ICY

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
OPER./	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	TRIP ✓	HNDL TOOLS	
MORN.						7	1/4	1/2														1/4		
DAY					1/4	5 3/4	1/4													1/4			1 1/2	
EVE.		1 1/2	1		1 3/4	3 1/4																1/2		
TOTAL		1 1/2	1		2	16	1/2	1/2												1/4		3/4	1 1/2	

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC			1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	23 M	
SIZE (mm)	215.9	
IADC CODE	4 3 7	
MFG.	VAREL	
TYPE	ETD 14MS	
SERIAL NO.	152167	
JETS (mm)	3 x 17.5	
DEPTH OUT (m)	2791	
DEPTH IN (m)	2725	
TOTAL METRES DRILLED (m)	66	
TOTAL HOURS RUN	33 3/4	

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
3	8	CT	A	F	2/0	LT	HRS	.78

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLG. RMR. CORE-C	ROTARY R.P.M.
2791			

LINER SIZE (mm)	S.P.M.	LINER SIZE
152	?	15

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MOTOR	165	6.20 m
1 / 1	EXT SUB / FS SUB	168	.75 m
1	MUD DC	167	9.26 m
1	NM EXT SUB	164	1.98 m
2	NM FLEX	163	18.38 m
1	X/O	164	.48 m
7	HWDP	103	64.56 m
1	JAR	174	5.82 m
23	HWDP	107	210.51 m
		BHA	318.94 m
RL	D.P.	STANDS	m
✓	D.P.	SINGLES	4175.29 m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC	19000		1000 daN
WT. OF STRING	49000		1000 daN

BIT RECORD

BIT NO.	24 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	HUGHES
TYPE	EP4676
SERIAL NO.	P31DP
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2791
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	10-20000
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	
EV. T m³	

PRODUCT	AMOUNT X UNIT
[illegible]	2 SX

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLG. RMR. CORE-C	ROTARY R.P.M.
2791			

LINER SIZE (mm)	S.P.M.	LINER SIZE
152		15

DEPTH (m)	DEVIATION (°)	DIR

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MOTOR		6.20 m
1	FS		.75 m
1	EXT SUB		.75 m
1	MUD DC		9.26 m
1	EXT SUB		1.98 m
2	FLEX NT		18.38 m
1	XO		.48 m
7	HW		64.56 m
1	JAR		5.82 m
23	HW		210.51 m
		BHA	318.94 m
RL	D.P.	STANDS	m
X	D.P.	SINGLES	2465.25 m
	KELLYDOWN		7.91 m
	TOTAL		2792.00 m
WT. OF DC	19000		1000 daN
WT. OF STRING	92000		1000 daN

BIT RECORD

BIT NO.	24 M
SIZE (mm)	215.9
IADC CODE	4 3 7 X
MFG.	HUGHES
TYPE	EP4876
SERIAL NO.	P31DP
JETS (mm)	3 x 17.5
DEPTH OUT (m)	2792
DEPTH IN (m)	2791
TOTAL METRES DRILLED (m)	1
TOTAL HOURS RUN	1 1/2

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	10-20000 [illegible]
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	2 m

MUD RECORD

TIME	18:00
DENSITY kg/m³	1665
FUNNEL VIS. - (S/L)	48
W.L. (cm³)	5.8
pH	11.0
EV. T m³	79.2

PRODUCT	AMOUNT X UNIT
NITRATE	4 SXS
CALCARB	27 SXS

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLG. RMR. CORE-C	ROTARY R.P.M.
2791	2792	1	50 MTR 110

	LINER SIZE (mm)	S.P.M.	LINER SIZE
11700	152		15

DEPTH (m)	DEVIATION (°)	DIR

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 03 DAY 14

RIG NO 15

FUEL @ 8:00

RIG 115 BOILER

WEATHER: TEMPERATURE −12 °C; CURRENT CONDITIONS CLEAR; WIND DIRECTION; ROAD ECM.

LAST CASING TUBING OR LINER	O.D (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.4	Lonestar	HCK	151	2032.59	5.35	2027.50

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.33	HWT	79	169	4½IF		F-1000	EMSCO	254
127	29.0	E3	101	162	4½IF		F-1000	EMSCO	254
127	29.02	E2	108	150	4½IF		F-800	EMSCO	283

	SAFETY MTG	21	22	23	24	25	26	TOTALS
		Tripping	Hnd. Tool					
		¼						8
			1½					8
	½							8
	¼		1½					24

SHALE SHAKER(S)

NO. TYPE: Derrick FLC.

SCREENS CHANGED ☐ YES ☐ NO

TOP / MIDDLE / BOTTOM

RENTALS SERVICES

TOTAL MJ - 506021

ACCUM MJ - 5150

ACCUM ON - 36

RECORD — MORNING TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2791				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
00:00	01:30	1½	6	P.O.H. Into Csg. 2295 m.
01:30	01:45	¼	22	Flowcheck.
01:45	02:00	¼	7	Rig Service & Hamular 1550 %
02:00	02:30	½		[illegible]
02:30	08:00	5½		[illegible]

TRIP RECORD

Calc - 12.11 m³ Used 13.50 m³

Diff. 1.39 m³

NOTES: Crown Saver Fastline Clamp, Deadline Anchor

Rolled Blown Dn 3X

8 | 124 350 | | | 0

RECORD — DAY TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2791				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
0800	0815	¼	7	R/S Function Blind Rams 8 sec 4s
0815	0945	1½	23	Set Motor @ 1.50° E/W New Tars
0945	1045	1	6	RIH To 356 m Flow
1045	11:00	¼	20	Fill Pipe & Shallow Test MWD Tool
11:00	14:30	3½	6	RIH 356 m - 2290 m Hanging up @ 2295
14:30	14:45	¼	5	Brk. Circ. & Rotate To get Through window
14:45	1600	1¼	6	RIH 2307 m - 2715

Phe New Motor Serv Hours

NOTES: ✓ Crown Saver Fastline Clamp Deadline Anchor

Boiler Blown Down 3X

8 | 101 350 | 120000 | Tripping | 0

RECORD — EVENING TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2791	2792	1	50 RT 110	15/15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11700	152		152	85

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
1600	1630	½	5	Brk. Circ. & Wash F/2715 - 2782 m
1630	1730	1	3	Ream 2782 - 2791 m
1730	1900	1½	2	Brk in Kit & Drill 2791 m - 2792 Rotary
1900	1930	½	22	Flow Check
1930	2045	1¼	5	Spot 5.0 m³ LCM Pill on Bottom
2045	2400	3¼	6	POH Into Casing @ 2279 m.

NOTES: Lost 10.3 m³ Mud To Formation

Crown Saver, Fastline Clamp, Deadline Anchor

8 | 103 360 | 125000 | Circulation | 0

FOLD HERE →

164652

LICENCE NO.:	WELL NAME AND NO.:
1900	CDN FOREST ETAL NORTH LIARD C-31A

OPERATOR:	CONTRACTOR:
Canadian Forest Oil Ltd	Akita Drilling Ltd.
SURFACE LOCATION:	UNIQUE ID.:
300-C31-6040-12330-0	300-C31-6040-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[illegible]	Dave [illegible]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial ____ Initial ____
(2) Detailed Inspection Weekly (using checklist) — Initial ____ Initial ____
(3) H2S Signs Posted (if required) — Initial ____ Initial ____
(4) Well License & Stick Diagram Posted — Initial ____ Initial ____
(5) Flare Lines Staked — Initial ____ Initial ____
(6) BOP Drills Performed — Initial ____ Initial ____
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial ____ Initial ____

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial ____
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial ____
(3) Mast Inspection Before Raising or Lowering — Initial ____
(4) Crown Saver Checked — Initial ____
(5) Motor Kills checked — Initial ____

YEAR 2001 MONTH 03
RIG NO. 58
FUEL @ 8
RIG 141 BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.		7 3/4								1/4											
DAY		4 3/4	1/2		6 1/2		1/4			1/4											
EVE.		3 1/2			1 3/4	2 3/4															
TOTAL		15 1/4	1/2		4 1/4	2 3/4	1/4			1/2											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	[illegible]		.25 m
1	Motor	165	6.11 m
1	Fit Sub	165	.73 .75 m
1	Mud DC	157	9.26 m
1	Ext Sub	161	1.98 m
2	NM Flex	113	18.38 m
1	X/O	161	.98 m
7	4 1/2 DP	127	64.56 m
1	Jar	171	5.83 m
23	HWDP	127	210.5 m
		BHA	358.[illegible] m
86	D.P.	STANDS	2414.0 m
	D.P.	SINGLES	m
	KELLYDOWN		2.07 m
	TOTAL		2783 m
WT. OF DC		19,500	1000 daN
WT. OF STRING		91,000	1000 daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD 14MS
SERIAL NO.	15[illegible]
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	58
TOTAL HOURS RUN	75 3/4

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 10 [illegible] Slide 5 [illegible] Rotate
TORQUE AT BOTTOM: 5 [illegible] ETHIC
FILL ON BOTTOM (m):

MUD RECORD

TIME	02:00	04:[illegible]	06:00
DENSITY kg/m³	1655	166[illegible]	1665
FUNNEL VIS. - (S/L)	9[illegible]	92	85
W.L. (cm³)	6.2	6.0	5.5
pH	10.5	10.0	10.5
P.V.T. m³	89.5	90.6	91.4

PRODUCT	AMOUNT X UNIT
Desco	1 sx
[illegible]	[illegible] sxs
[illegible]	4 sxs
Starch	2 [illegible]
Desco	[illegible]
Caustic	2 sxs
Barite	84 sxs

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.
2778	2783	5	30 / 110

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152	85	15[illegible]

DEPTH (m)	DEVIATION (°)	DIR.
2767.42	33	2[illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor		6.11 m
1	Flt Sub / RES Sub		.75 .75 m
1	Mud DC		9.26 m
1	Ext Sub		1.98 m
2	NM Flex		18.38 m
1	X/O		.98 m
7	4 1/2 DP		64.56 m
1	Jar		5.83 m
23	HWDP		210.57 m
		BHA	318.56 m
86	D.P.	STANDS	m
X	D.P.	SINGLES	2475.91 m
	KELLYDOWN		6.77 m
	TOTAL		2788 m
WT. OF DC		17,000	1000 daN
WT. OF STRING		91,000	1000 daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD 14MS
SERIAL NO.	152167
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	63
TOTAL HOURS RUN	80 1/4

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 10 [illegible] Slide 5/10 Rotate
TORQUE AT BOTTOM: 9 [illegible] ETHIC
FILL ON BOTTOM (m):

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1660	1665	1660
FUNNEL VIS. - (S/L)	95	100	95
W.L. (cm³)	5.5	5.5	5.5
pH	11.0	11.0	11.0
P.V.T. m³	40.8	40.3	41.3

PRODUCT	AMOUNT X UNIT
Biocide	1 [illegible]
[illegible]	1 [illegible]
[illegible]	1 [illegible]
Desco	1 sx
Sulfite	1 sx

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.
2783	2788	5	30 / 110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11900	152	85	15[illegible]
7900		50	

DEPTH (m)	DEVIATION (°)	DIR.
2772.09	33.0	3[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

			.25 m
1	Motor		6.11 m
1	FS		.75 m
1	RES		.75 m
1	Mud DC		9.26 m
1	ES		1.98 m
2	NM Flex		18.38 m
1	X/O		.98 m
7	HW		64.56 m
1	Jar		5.83 m
23	HW		210.57 m
		BHA	318.56 m
86	D.P.	STANDS	2462.1 m
X	D.P.	SINGLES	9.7 m
	KELLYDOWN		1.[illegible] m
	TOTAL		2791.00 m
WT. OF DC		15,000	1000 daN
WT. OF STRING		1 [illegible]	1000 daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD 14MS
SERIAL NO.	152167
JETS (mm)	3 x 17.5
DEPTH OUT (m)	2791
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	66
TOTAL HOURS RUN	83 3/4

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 10 [illegible] Slide [illegible] Rotate
TORQUE AT BOTTOM: [illegible]
FILL ON BOTTOM (m):

MUD RECORD

TIME	1[illegible]	20:30
DENSITY kg/m³	1660	1660
FUNNEL VIS. - (S/L)	9[illegible]	91
W.L. (cm³)	5.[illegible]	5.5
pH	11.0	11.0
P.V.T. m³	91.[illegible]	83.7

PRODUCT	AMOUNT X UNIT
Barite	3456
Lignite	1 sx

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.
2788	2791	3	[illegible] / 110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11700	152		152
7600			

DEPTH (m)	DEVIATION (°)	DIR.
2777.3	33.2	3[illegible]

FOLD HERE →

2

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	03	12

RIG NO. 58

FUEL @ 8:00

RIG 141 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB TO CSG. HEAD (m)	SET AT (m)
	244.5	[illegible]	71.4	[illegible]	[illegible]	193	2623.89	6.35	2629.5

WEATHER: TEMPERATURE [illegible] °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O D (mm)	TYPE THREAD	NO. OF JOINTS
127	74.35	HWT	79	159	4½IF	
127	35.09	E?	101	162		
127	29.02	E2	108	156	4½IF	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
F-1000	EMSCO	254
F-1000	EMSCO	254
F-900	EMSCO	229

DIR. WORK	SAFETY MTG.

TOTALS: 8 / 8 / 8 / 24

SHALE SHAKER(S): NO. TYPE 2 Derrick F.L.C.

SCREENS CHANGED ☐ YES ☐ NO — TOP / MIDDLE / BOTTOM

RENTALS/SERVICES:
TOTAL M3 564.49
[illegible] M3 34.18
[illegible] OIL - 3%

MORNING TOUR

MUD RECORD

04:00	06:00
1660	1665
92	85
6.0	5.5
10.0	10.5
90.6	91.4

METRES DRILLED

FROM	TO	DRLG/ R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2776	2783	5	30 MTR	
			110	15/18

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION
2767.42	33	273.3

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0530	5½	2	Drill F. 2776 - 2781.38 Slide
0530	0545	¼	10	Survey @ 2767.42
0545	0800	2¼	2	Drill F. 2781.38 - 2783

NOTES: Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blow Down 3x

[illegible] 5 [illegible] 350 | 125 000 | Water Usage

DAY TOUR

MUD RECORD

12:00	14:00
1665	1660
100	95
5.5	5.5
11.0	11.0
90.3	91.3

METRES DRILLED

FROM	TO	DRLG/ R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2783	2788	5	30 [illegible]	15/18
			110	18/20

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152	85	152	
7900		50		74

DEPTH (m)	DEVIATION (°)	DIRECTION
2772.06	33.0	273.0

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0900	1	2	Drill 2783 m - 2784 m Rotate
0900	0930	½	3	Back Ream For Conn.
0930	0945	¼	7	R/S Function [illegible]
0945	1115	1½	2	Drill 2784 m - 2786 m
1115	1300	1¾	5	Circ. [illegible] Hole [illegible]
1300	1315	¼	10	Survey 2772.06
1315	1400	¾	5	Circulate & wait on orders
1400	1600	2	2	Drill 2786 - 2788 Slide

[illegible]

NOTES: Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blow Down 3x

0 | 105 | 350 | 120 000 | RESTRICTIONS | 0

EVENING TOUR

MUD RECORD

20:30	
1660	
91	
5.5	
11.0	
83.7	

METRES DRILLED

FROM	TO	DRLG/ R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2788	2791	3	[illegible]	
			110	7/[illegible]

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11700	152		152	55
7600				30

DEPTH (m)	DEVIATION (°)	DIRECTION
2777.9	33.3	[illegible]

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	19:30	3½	2	Drill 2788 m - 2791.0 Slide
19:30	21:15	1¾	5	Circ. [illegible] Hole [illegible]
2115	2400	2¾	6	[illegible] Pumped Out [illegible]

Conducted [illegible]

[illegible]

NOTES: Crown Saver, Fastline [illegible] Deadline Anchor
Boiler Blow Down 3x

0	105	350	120 000

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164651

LICENCE NO.	WELL NAME AND NO.
	FOREST [illegible]

OPERATOR

CONTRACTOR

SURFACE LOCATION

UNIQUE ID

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS — OPR. — R.M.

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

OPER	DRILL ACTUAL	RIG SERVICE	DEV SURVEY
MORN	7¼	¼	½
DAY	7½		
EVE	7½	½	½
TOTAL	22¼	¾	1

Tour 1

1	26
1 BIT [illegible]	.11
1 [illegible]	.12
1 [illegible] 157	9.26
1 [illegible] 1**	1.98
2 [illegible] 1*2	15.20
1 [illegible] 1**	.45
7 [illegible] 121	[illegible]
1 [illegible] 121	5.33
27 [illegible] 121	20.5
BHA	76.5
DP STANDS	2472.2
DP SINGLES	19.2
KELLY DOWN	10.33
TOTAL	2765
WT OFF BTM	[illegible]
WT ON BTM	[illegible]

BIT	
BIT NO.	23M
SIZE	215.9
IADC CODE	437
MFR	VAREL
TYPE	ETLMF
SERIAL NO.	[illegible]
JETS	3 × 17.5
DEPTH OUT	
DEPTH IN	2765
TOTAL METRES DRILLED	40
TOTAL HOURS RUN	22

TIME	02:00	04:00	06:00
DENSITY	[illegible]	1655	1660
FUNNEL VIS	[illegible]	75	85
FL	[illegible]	6.5	6.5
PH	[illegible]	10.5	11.0
	[illegible]	[illegible]	92.1

PRODUCT	AMOUNT X UNIT
DESCO	2 SKS
[illegible]	4 SKS
[illegible]	1 PL
[illegible]	1 PL
[illegible]	1 SK
CAUSTIC	2 SKS
BARITE	22 SKS
[illegible]	1 SK

FROM	TO		
2729	2765	6	[illegible]

Tour 2

1	.16
1 [illegible]	.11
1 [illegible]	.26
1 [illegible]	9.26
1 [illegible]	1.98
2 [illegible]	15.20
1 [illegible]	.45
7 [illegible]	66.6
1 [illegible]	5.33
25 [illegible]	20.5
BHA	76.56
DP SINGLES	[illegible]
KELLY DOWN	3.7
TOTAL	2771.5
WT ON BTM	11.00

BIT	
BIT NO.	23M
SIZE	215.9
IADC CODE	437
MFR	VAREL
TYPE	ETLMF
JETS	3 × 17.5
DEPTH IN	2765

TIME	[illegible]	[illegible]	14:00
DENSITY	1665	[illegible]	1660
PH	[illegible]	[illegible]	11.5
	[illegible]	[illegible]	87.1

PRODUCT	AMOUNT X UNIT
STARLOSE	1 SK
[illegible]	1 PL

FROM	TO		
2765	2771	6	[illegible]

DEPTH	DEVIATION
2758.73	30.9
2744.7	31.4

Tour 3

1	.26
1 [illegible]	.11
1 [illegible]	[illegible]
1 [illegible] 157	[illegible]
1 [illegible] 1**	1.98
2 [illegible]	15.20
1 [illegible]	.45
7 [illegible]	[illegible]
1 [illegible]	5.33
BHA	76.56
DP STANDS	2491.2
KELLY DOWN	[illegible]

BIT	
BIT NO.	23M
SIZE	215.9
IADC CODE	437
MFR	VAREL
TYPE	ETLMF
JETS	3 × 17.5

TIME	[illegible]	20:00	22:00
DENSITY	1660	1660	1660
FUNNEL VIS	[illegible]	87	83
FL	[illegible]	7.0	7.2
PH	[illegible]	10.5	10.5
	91.7	88.1	89.5

PRODUCT	AMOUNT X UNIT
[illegible]	1 SK
[illegible]	1 PL
[illegible]	1 SK
[illegible]	1 PL

FROM	TO		
2771	2778	7	[illegible]

DEPTH	DEVIATION
2762.33	32.4

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DAILY CHECKS	OPR.	R.M.
[illegible]		

FUEL	8.00
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

	O.D (mm)	MIN I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
LAST CASING									
TUBING									

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN I.D (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS
[illegible]						

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]		

SAFETY

SHALE SHAKER

DERRICK FLC
SCREENS CHANGED YES NO
TOP / TOP
MIDDLE / MIDDLE
BOTTOM / BOTTOM

RENTAL SERVICES

TOTAL MS [illegible]

ACCUM MS - 1709

ACCUM OIL - 36

METRES DRILLED

FROM	TO	SIZE CORE	ROTARY R.P.M.	WT ON BIT
2739	2765	[illegible]	[illegible]	[illegible]

04:00	06:00
1655	1660
75	85
6.5	6.5
10.5	11.0
90.9	92.1

LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
11160	152	[illegible]	152

2600 | 40

DEPTH (m)	DEVIATION (°)	DIRECTION
[illegible]	[illegible]	[illegible]

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

[illegible]	[illegible]	[illegible]	2	DRILL F/2739.40 - 2767.50 SLIDE
[illegible]	[illegible]	[illegible]	3	[illegible] SLIDE
[illegible]	[illegible]	1/4	10	[illegible]
[illegible]	[illegible]	[illegible]	7	R/S [illegible] TOTC
[illegible]	[illegible]	[illegible]	[illegible]	[illegible] - 2715 ROTATE

TRANSFERRED [illegible] of Active Mud - WADECO

[illegible] 0.7m³ of GEL - Active System

NOTES [illegible]

[illegible]

[illegible] 34.0	125,000	TFAM B.S.	0

METRES DRILLED

FROM	TO	SIZE CORE	ROTARY R.P.M.	WT ON BIT
2765	2771	[illegible]	[illegible]	[illegible]

12:00	14:26
1660	1660
[illegible]	86
[illegible]	6.5
[illegible]	10.5
[illegible]	[illegible]

LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
11400	152	85	152

DEPTH (m)	DEVIATION (°)	DIRECTION
2758.77	30.7	274.7
2755.7	31.4	275.1

5 | 1662 | 1662 | 100

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

[illegible]	1000	2	2	DRILL 2715 m to 2766.7 m ROTATE
1000	1015	1/4	10	SURVEY @ 2758.77 m
1015	1315	3	2	DRILL 2766.7 TO 2770 m SLIDE
1315	1330	1/4	10	SURVEY CHECK SHOT @ 2755.7 m
1330	1600	2 1/2	2	DRILL 2770 m TO 2771.6 m ROTATE

NOTES [illegible] Check, [illegible] Clamp, Deadline Anchor

[illegible]

6 [illegible] 350	125,000	[illegible]	0

METRES DRILLED

FROM	TO	SIZE CORE	ROTARY R.P.M.	WT ON BIT
2771	2775	7	[illegible]	[illegible]

20:00	23:00
1660	1660
81	83
7.0	7.2
10.5	10.5
89.7	89.5

LINER SIZE (mm)	SPM	LINER SIZE (mm)	SPM
11400	152	85	150

7900 | 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2762.33	32.4	272.6

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	19.45	3 3/4	2	DRILL 2771 m to 2774.38 ROTATE
19.45	20.00	1/4	7	R/S FUNCTION ANNULAR 40 SEC.
2000	2200	2	2	DRILL F/2774.38 - 2776.4 ROTATE
2200	2215	1/4	10	SURVEY @ 2762.33
2215	2400	1 3/4	2	DRILL F/2776.4 - 2775 SLIDE

NOTES [illegible] FASTLINE [illegible], DEADLINE ANCHOR.

[illegible]

0 [illegible] 380	125,000	[illegible]	0

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164650

LICENCE NO.	WELL NAME AND NO.
1900	14-2 [illegible] C-21A

OPERATOR	CONTRACTOR
[illegible]	[illegible] Ltd.

SURFACE LOCATION	UNIQUE ID
[illegible]	[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
[signature]	Dave Sauck

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H_2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOPs - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH

RIG NO.

FUEL @ 8

RIG	222	BOIL

WEATHER	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	Fine

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN		5¾	½				¼			½											
DAY		7¼			¼					¼											
EVE		5¾	1		1¼		¼			¼											
TOTAL		18¾	1½		1½		½			1											

MORNING TOUR

DRILLING ASSEMBLY

1			.25 m
1	Motor	161	6.11 m
1/1	Flt Sub / Ressub	161/161	77.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NMFlex	163	19.38 m
1	X/O	161	.45 m
7	HWDP	127	64.56 m
1	Jar	171	5.58 m
23	HWDP	127	210.5 m
	BHA		316.86 m
	D.P.	STANDS	2437.23 m
	D.P.	SINGLES	m
	KELLYDOWN	DP	8.44 m
	TOTAL		2747.16 m
WT. OF DC		15000	
WT. OF STRING		91000	

BIT RECORD

BIT NO.	23M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD14MS
SERIAL NO.	152067
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	22
TOTAL HOURS RUN	33

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 14-[illegible] 7[illegible]

TORQUE AT BOTTOM [illegible]

FILL ON BOTTOM (m)

MUD RECORD

TIME	02:00	04:00	06:00
DENSITY kg/m^3	1665	1660	1660
FUNNEL VIS. - (S/L)	93	98	92
W.L. (cm^3)	6.5	6.2	6.5
pH	11.0	11.0	11.0
P.V.T. m^3	86.5	87.9	88.0

PRODUCT	AMOUNT X UNIT
BARITE	12 [illegible]
Cyrinox	1 PL
Biocide	1 PL
Soda Ash	1 Sx
Aluminite	1 PL
Torque 2000	3 PLS
Drispac	2 sxs
STARPAK	2 sxs

HOURS RUN	INTAKE DENSITY (kg/m^3)	OVERFLOW DENSITY (kg/m^3)	UNDERFLOW DENSITY (kg/m^3)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2742	2747	5	30 MTR
			110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12,300	152	85	152
8400		50	

DEPTH (m)	DEVIATION (°)	
2729.11	29.7	27
2733.45	28.8	27

DAY TOUR

DRILLING ASSEMBLY

1		.25 m
1	Motor	6.11 m
1	Flt Sub / Res Sub	.75 m
1	MWD DC	9.26 m
1	Ext Sub	1.98 m
2	NM Flex	19.38 m
1	X/O	.45 m
7	HWDP	64.56 m
1	Jar	5.58 m
23	HWDP	210.47 m
	BHA	316.66 m
85	D.P. STANDS	
	D.P. SINGLES	2437.23
	KELLYDOWN DP	1.07 m
	TOTAL	2755 m
WT. OF DC		15000
WT. OF STRING		91000

BIT RECORD

BIT NO.	23M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD14MS
SERIAL NO.	152067
JETS (mm)	3x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED	30
TOTAL HOURS RUN	40½

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 14-21 [illegible] Slide Tread State

TORQUE AT BOTTOM 10 - 15000 FT/LBS

FILL ON BOTTOM (m)

MUD RECORD

TIME	07:00	12:00	17:00
DENSITY kg/m^3	1660	1660	1655
FUNNEL VIS. - (S/L)	92	94	90
W.L. (cm^3)	6.2	6.0	6.0
pH	11.0	11.0	10.5
P.V.T. m^3	88.1	89.8	91.0

PRODUCT	AMOUNT X UNIT
LIGNITE	2 sxs
Cyrinox	1 PL
Biocide	1 PL
Torque 2000	3 PL's
Soda Ash	1 sx
barite	10 sx

HOURS RUN	INTAKE DENSITY (kg/m^3)	OVERFLOW DENSITY (kg/m^3)	UNDERFLOW DENSITY (kg/m^3)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2747	2755	8	30 MTR
			110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12100	152	85	152
8800		50	

DEPTH (m)	DEVIATION (°)	DI

EVENING TOUR

DRILLING ASSEMBLY

1			.25 m
1	Motor	161	6.11 m
1/1	Flt Sub / Res Sub	161/161	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	19.38 m
1	X/O	161	.45 m
7	HWDP	127	64.56 m
1	Jar	171	5.58 m
23	HWDP	127	210.5 m
	BHA		316.6 m
84	D.P.	STANDS	2437.22 m
2	D.P.	SINGLES	1.27 m
	KELLYDOWN		m
	TOTAL		2759.33 m
WT. OF DC		15000	
WT. OF STRING		91000	

BIT RECORD

BIT NO.	23M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD14MS
SERIAL NO.	152067
JETS (mm)	3x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED	34
TOTAL HOURS RUN	45¾

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 14-21 Slide 11 Rotate

TORQUE AT BOTTOM 9 - 13000 FT/LBS

FILL ON BOTTOM (m)

MUD RECORD

TIME	16:00	20:00	23:00
DENSITY kg/m^3	1660	1665	1655
FUNNEL VIS. - (S/L)	85	80	85
W.L. (cm^3)	6.0	6.0	6.0
pH	10.5	10.5	10.5
P.V.T. m^3	92.5	93.0	93.5

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m^3)	OVERFLOW DENSITY (kg/m^3)	UNDERFLOW DENSITY (kg/m^3)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2755	2759	4	MTR
			110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12,000	152	85	152

DEPTH (m)	DEVIATION (°)	DIR
2742.08	29.7	

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH / DAY

RIG NO.

FUEL @ 8:00

RIG 222 BOILER

WEATHER
- TEMPERATURE −17 °C
- CURRENT CONDITIONS
- WIND DIRECTION
- ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.25	[illegible]	79	169	4IF		F-1600	EMSCO	254
127	38.79	E9	101	162		135	F-1600	EMSCO	254
127	29.02	E9	108	156	4.5IF	150	F-1600	EMSCO	229

TOTALS 24

SHALE SHAKER(S): 2 Derrick F.L.C.

SCREENS CHANGED ☐ YES ☐ NO

TOP / TOP; MIDDLE / MIDDLE; BOTTOM / BOTTOM

RENTALS SERVICES

Total MI 56234
Accum MI 1525
Accum [illegible]

MORNING TOUR

RECORD

04:00	06:00
1660	1660
98	72
6.2	6.3
11.0	11.0
87.9	88.0

METRES DRILLED

FROM	TO	DRO R&R CORE.C	ROTARY R.P.M.	WT. ON BIT (1000daN)
2742	2747	5	32	13/15
			110	28/30

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12,300	152	85	152	

8400 | 56

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION
2729.11	28.7	277.5
2733.45	28.8	277.9

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

00:00	01:45	1¾	2	Drill F/2742.80 To. 2744.0 Slide
01:45	02:00	¼	10	MWD Survey @ 2729.11
02:00	02:15	¼	3	Back Ream Slide Hole.
02:15	05:00	2¾	2	Drill F/2744 To. 2745.60 Rotate
05:00	05:15	¼	3	Back Ream For Conn.
05:15	05:30	¼	7	K/S Function T. Pipe 9.5 sec.
05:30	07:45	2¼	2	Drill F/2745.60 — 2747.4m Rotate
07:45	08:00	¼	10	Survey @ 2733.45m

NOTES: Crown Saver. Fastline Clamp. Deadline Anchor Brake & Linkage Boiler Blown Dn 3X

8 | 103 | 350 | 120 000 | Buddy System | 0

DAY TOUR

RECORD

12:00	14:00
1660	1655
44	40
6.0	6.0
11.0	10.5
84.8	91.0

METRES DRILLED

FROM	TO	DRO R&R CORE.C	ROTARY R.P.M.	WT. ON BIT (1000daN)
2747	2755	8	32 MTR	7/15
			110	28/30

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12100	152	85	152	

8800 | 56

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

8:00	1345	5¾	2	Drill 2747m — 2753m Slide
1345	1400	¼	10	Survey check shot @ 2737m
1400	1545	1¾	2	Drill 2753m — 2755m Slide
1545	1600	¼	5	Circulate Bottom's up Sample

NOTES: Crown Saver. Fastline Clamp. Deadline Anchor Boiler Blown Down 3X

8 | 103 | 350 | 130 000 | MSDS Book | 0

EVENING TOUR

RECORD

20:00	23:00
1665	1655
80	85
6.0	6.0
10.5	10.5
93.0	93.5

METRES DRILLED

FROM	TO	DRO R&R CORE.C	ROTARY R.P.M.	WT. ON BIT (1000daN)
2755	2759	4	MTR	7/15
			110	25/30

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12000	152	85	152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION
2743.08	29.1	277.5

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	1715	1¼	5	Circ. Btm's up Sample
1715	1815	1	3	Back Ream Tight Hole
1815	1830	¼	7	K/S Function Remote Check
1830	21:45	3¼	2	Drill 2755m — 2757.10 Rotate
21:45	22:00	¼	10	Survey @ 2743.08
22:00	24:00	2	2	Drill 2757.10 To 2759.40 Slide

NOTES: Crown Saver. Fastline Clamp. Deadline Anchor Boiler Blown Dn 3X

8 | 103 | 350 | 125000 | Buddy System | 0

DRILLER / DERRICKMAN / MOTORMAN / FLOORMAN / FLOORMAN / LEASEMAN / RIG WATCH

FOLD HERE →

164649

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR: [illegible] MONTH: [illegible] RIG NO.: 58

FUEL @ 8:00

RIG: 118 BOILER:

WEATHER: TEMPERATURE [illegible] / CURRENT CONDITIONS [illegible] / WIND DIRECTION [illegible] / ROAD Good

LICENCE NO.: 1960 [illegible]

WELL NAME AND NO.: [illegible] -TAL [illegible] 07-A

OPERATOR: [illegible]

CONTRACTOR: [illegible] Drilling Ltd.

SURFACE LOCATION: [illegible]

UNIQUE ID.: [illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

CODE NO.	1 OPER.	2 RIG UP & TEAR DOWN	3 DRILL ACTUAL	4 REAMING	5 CORING	6 COND. MUD & CIRC	7 TRIPS	8 RIG SERVICE	9 REPAIR RIG	10 CUT OFF DRILL LINE	11 DEV. SURVEY	12 WIRE LINE LOGS	13 RUN CASE & CEMENT	14 WAIT ON CEMENT	15 NIPPLE UP B.O.P.	16 TEST B.O.P.	17 DRILL STEM TEST	18 PLUG BACK	19 SQUEEZE CEMENT	20 FISHING	21 DIR. WORK	22 SAFETY MTG.	Rot. Drill
MORN.		4 1/4	3/4		1 1/2	1 1/4				1/2													
DAY		6 3/4	1/2				1/4			1/4												1/4	
EVE.		7 1/4	1/2							1/4													
TOTAL		18 1/4	1 3/4		1 1/2	1 1/4	1/4			1/4												1/4	

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		O.D.	LENGTH
1	[bit]		.25 m
1	Motor	161	6.11 m
1/1	[illegible]	163/164	.75/.25 m
1	Mud DC	157	9.26 m
1	Ext. Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	171	5.53 m
23	HWDP	127	210.57 m
		BHA	318.56 m
84	D.P.	STANDS	m
XX	D.P.	SINGLES	2418.06 m
		KELLY DOWN/UP	3.92 m
		TOTAL	2733 m
WT. OF DC		19000	daN
WT. OF STRING		55000	daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	437
MFG.	Varel
TYPE	ETD14MS
SERIAL NO.	152067
JETS (mm)	3 X 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	12 1/4
CUTTING STRUCTURE: T, T, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	[illegible]
TORQUE AT BOTTOM	2/13 [illegible]
FILL ON BOTTOM (m)	

MUD RECORD

TIME	03:00	06:00
DENSITY kg/m³	1660	1665
FUNNEL VIS. - (S/L)	86	85
W.L. (cm³)	6.0	6.5
pH	10.5	10.5
[illegible]	78.8	79.0

PRODUCT	AMOUNT X UNIT
[illegible]	1 [illegible]
[illegible]	1 [illegible]
[illegible]	12 x
[illegible]	1 pl
[illegible]	25 x
Lime	4 x
[illegible]	27 sx

METRES DRILLED

FROM	TO	CODE R=R C=C	ROTARY R.P.M.
2730	2733	3	30 / 110

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11,500	152	85	152
7200		52	

DEPTH (m)	DEVIATION (°)	DIRECTION

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		O.D.	LENGTH
1	[bit]		.25 m
1	Motor	161	6.11 m
1/1	FLT Sub / RCS Sub	163/164	.75/.25 m
1	Mud DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	171	5.53 m
23	HWDP	127	210.57 m
		BHA	318.56 m
84	D.P.	STANDS	m
XX	D.P.	SINGLES	2427.45 m
		KELLY DOWN	m
		TOTAL	2737.00 m
WT. OF DC		19000	daN
WT. OF STRING		59000	daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	437
MFG.	Varel
TYPE	ETD14MS
SERIAL NO.	152067
JETS (mm)	3 x 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	12
TOTAL HOURS RUN	19
CUTTING STRUCTURE: T, T, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	16000 Slide 6000 Rotate
TORQUE AT BOTTOM	8-14000 Ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	77	81	78
W.L. (cm³)	6.0	6.0	6.2
pH	11.0	11.0	11.0
[illegible]	81.4	82.6	83.4

PRODUCT	AMOUNT X UNIT
[illegible]	15 x
[illegible]	1 pl
[illegible]	1 pl
[illegible]	1 pl
[illegible]	3 pl
Lime	15 x
Barite	87 sx
[illegible]	15 x

METRES DRILLED

FROM	TO	CODE R=R C=C	ROTARY R.P.M.
2733	2737	4	30 / 110

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10900	152	55	152
6000		50	

DEPTH (m)	DEVIATION (°)	DIRECTION

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		O.D.	LENGTH
1	[bit]		.25 m
1	Motor	161	6.11 m
1/1	FLT Sub / RCS Sub	163/164	.75/.25 m
1	Mud DC	157	9.26 m
1	Ext. Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	171	5.53 m
23	HWDP	127	210.57 m
		BHA	318.56 m
84	D.P.	STANDS	m
XX	D.P.	SINGLES	m
		KELLY DOWN	m
		TOTAL	2742.0 m
WT. OF DC		19000	daN
WT. OF STRING		57000	daN

BIT RECORD

BIT NO.	23 M
SIZE (mm)	215.9
IADC CODE	437
MFG.	Varel
TYPE	EID14MS
SERIAL NO.	152067
JETS (mm)	3 X 17.5
DEPTH OUT (m)	
DEPTH IN (m)	2725
TOTAL METRES DRILLED (m)	17
TOTAL HOURS RUN	26 1/4
CUTTING STRUCTURE: T, T, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	16:00	20:00	23:00
DENSITY kg/m³	1660	1655	1655
FUNNEL VIS. - (S/L)	75	88	90
W.L. (cm³)	6.0	7.2	6.5
pH	11.0	11.0	11.0
[illegible]	84.6	85.1	86.1

PRODUCT	AMOUNT X UNIT

METRES DRILLED

FROM	TO	CODE R=R C=C	ROTARY R.P.M.
2737	2742	5	30 / 110

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
13200	152	85	152

DEPTH (m)	DEVIATION (°)	DIRECTION
2723.9	28.3	27[illegible]

HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

FOLD HERE →

DAILY CHECKS — OPR. / R.M.
(1) Daily Walk Around Inspection — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial
(3) HFS Signs Posted (if required) — Initial
(4) Well License & Stick Diagram Posted — Initial
(5) Flare Lines Staked — Initial
(6) BOP Drills Performed — Initial
(7) Visually inspect BOP's - Flowlines & Degasser Lines — Initial

(1) Rig Site Health and Safety Meeting (once/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR / MONTH / DAY 07
RIG NO. 55
FUEL @ 8:00
RIG 112 BOILER

WEATHER
TEMPERATURE −10 °C
CURRENT CONDITIONS Light Snow
WIND DIRECTION —
ROAD Good [illegible]

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS
127	[illegible]	[illegible]	[illegible]		[illegible]	
127	[illegible]	E	[illegible]			
127	[illegible]	[illegible]	[illegible]	156	[illegible]	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

SAFETY MTG. Bop Drill
1/4
1/4

TOTALS — 24

SHALE SHAKERS
NO. / TYPE
SCREENS CHANGED ☒ YES ☐ NO
TOP / TOP
MIDDLE / MIDDLE
BOTTOM / BOTTOM
[illegible] 58 [illegible]
[illegible] 1203

MORNING TOUR

RECORD

24.00
1665
85
6.5
10.5
79.0

METRES DRILLED FROM	TO	COND. HAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2732	2733	3	50	14/15
			110	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11500	152	[illegible]	152	

7200

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
[illegible]	[illegible]	1½	[illegible]	[illegible] 2732
[illegible]	[illegible]	½	[illegible]	[illegible]
[illegible]	[illegible]	¼	[illegible]	[illegible]
[illegible]	[illegible]	2½	2	[illegible] 2732 [illegible]
[illegible]	[illegible]	1½	2	[illegible]
[illegible]	[illegible]	1¾	2	Drill [illegible] 2733 m Slide

NOTES [illegible]

| | [illegible] | 12 [illegible] | [illegible] | |

DAY TOUR

RECORD

12.00	14.00
1660	1660
81	78
6.0	6.2
11.0	11.0
82.6	83.4

METRES DRILLED FROM	TO	COND. HAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2733	2737	4	50	7/15
			110	7/30

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152	85	152	

6000 — 50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	1245	4¾	2	Drill 2733 m - 2735 m
1245	1315	½	3	Back ream for connection
1315	1330	¼	22	BOP Drill well secured in [illegible]
1330	1345	¼	7	[illegible] function [illegible]
1345	1400	¼	10	Survey [illegible] shot @ [illegible]
1400	1600	2	2	Drill 2735 m - 2737 m Rotate

NOTES Crown saver, [illegible] clamp, deadline anchor
Boiler blow down

| 0 | 1415 | 350 | 125000 | BOP Drill | |

EVENING TOUR

RECORD

20.00	23.00
1655	1655
88	90
7.2	6.5
11.0	11.0
85.1	86.1

METRES DRILLED FROM	TO	COND. HAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2737	2742	5	50	
			110	7/30

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12900	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION
2723.9	26.3	276.3

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	1630	½	2	Drill 2737 m - 2737.9 m Rotate
1630	1700	½	3	Back ream [illegible] for survey
1700	1715	¼	10	Survey
1715	24:00	6¾	2	Drill F/ 2737.9 - 2741.80. Slide

NOTES Fastline clamp, deadline anchor
Brake [illegible]

| 0 | 141 | 350 | [illegible] | [illegible] | |

164648

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LICENCE NO.:	WELL NAME AND NO.:
1800	Cdn Forest et al North Liard C31A

OPERATOR:	CONTRACTOR
Canadian Forest Oil Limited	Akita Drilling Limited
SURFACE LOCATION:	UNIQUE ID
300-C31-6040-12330-0	300-C31-6040-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[illegible signature]	[illegible signature]

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well Licence & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2001 MONTH 03

RIG NO. 58E

FUEL

RIG 146

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD Ic

TIME HRS

	OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG
MORN.			½				4½			1												
DAY			7½				½															
EVE.							1 ¾															
TOTAL							7 ¼															

DRILLING ASSEMBLY / BIT RECORD / MUD RECORD (1)

DRILLING ASSEMBLY				BIT RECORD	
1			.25	BIT NO.	22m
1	[illegible]			SIZE (mm)	[illegible]
1/1	[illegible]			IADC CODE	[illegible]
1	[illegible]			MFG.	[illegible]
				TYPE	[illegible]
	[illegible]			SERIAL NO.	[illegible]
				JETS	[illegible]
				DEPTH OUT (m)	
				DEPTH IN (m)	[illegible]
				TOTAL METRES DRILLED (m)	[illegible]
				TOTAL HOURS RUN	½
	D.P.	STANDS	2408.64	CUTTING STRUCTURE	
	D.P.	SINGLES			
	KELLYDOWN				
	TOTAL		2725.0	HOLE DRAG	
WT. OF DC		19 [illegible]		TORQUE AT BOTTOM	
WT. OF STRING		[illegible]		PULL ON BOTTOM (m)	

MUD RECORD			
TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

FROM	TO	METRES DRILLED	ROTARY R.P.M.
272[illegible]	272[illegible]		

DEPTH (m)	DEVIATION (°)	DIRECTION

DRILLING ASSEMBLY / BIT RECORD / MUD RECORD (2)

DRILLING ASSEMBLY				BIT RECORD	
1			.25	BIT NO.	23m
1	MOTOR	161	6.31	SIZE (mm)	215.9
1/1	Fat sub / Bit Sub	162/166	18.75	IADC CODE	4 3 7
1	MOND DC	157	9.26	MFG.	HAREL
1	FAT SUB	164	1.38	TYPE	ETD44HC
2	NM FLEX	163	18.36	SERIAL NO.	152167
1	X/O	164	.45	JETS	3 × 12.5
7	HWDP	127	64.56	DEPTH OUT (m)	
1	JAR	171	5.38	DEPTH IN (m)	2725
23	HWDP	127	210.6	TOTAL METRES DRILLED (m)	5
		BHA =	316.3[illegible]	TOTAL HOURS RUN	8
	D.P.	STANDS	24[illegible]	CUTTING STRUCTURE	
	D.P.	SINGLES	9.42		
	KELLYDOWN				
	TOTAL		2730.0	HOLE DRAG	[illegible]
WT. OF DC		19 000		TORQUE AT BOTTOM	[illegible] FT.LB
WT. OF STRING		[illegible]		PULL ON BOTTOM (m)	

MUD RECORD			
TIME	08:00	11:00	14:00
DENSITY kg/m³	1105	1105	[illegible]
FUNNEL VIS. - (S/L)	71	47	54
W.L. (cm³)	5.9	5.5	6.0
pH	10.5	10.5	10.5
	77.3	78.6	80.1

PRODUCT	AMOUNT X UNIT
[illegible]	

FROM	TO	METRES DRILLED	ROTARY R.P.M.
2725	2730	5	30
			110

	LINER SIZE (mm)	S.P.M.	LINER SIZE
12440	152	83	152

DEPTH (m)	DEVIATION (°)	DIRECTION

DRILLING ASSEMBLY / BIT RECORD / MUD RECORD (3)

DRILLING ASSEMBLY				BIT RECORD	
1			.26	BIT NO.	23m
1	MOTOR		6.11	SIZE (mm)	215.9
1/1	Fat sub / Bit sub		18.75	IADC CODE	4 3 7
1	MONDC		9.26	MFG.	HAREL
1	FAT SUB		1.38	TYPE	ETD44HC
2	NM FLEX		18.36	SERIAL NO.	152167
1	X/O		.45	JETS	3 × 12.5
7	HWDP		64.57	DEPTH OUT (m)	
1	JAR		5.38	DEPTH IN (m)	2725
23	HWDP		210.57	TOTAL METRES DRILLED (m)	
		BHA	316.51	TOTAL HOURS RUN	
	D.P.	STANDS		CUTTING STRUCTURE	
	D.P.	SINGLES			
	KELLYDOWN				
	TOTAL			HOLE DRAG	
WT. OF DC		[illegible]		TORQUE AT BOTTOM	
WT. OF STRING				PULL ON BOTTOM (m)	

MUD RECORD			
TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

FROM	TO	METRES DRILLED	ROTARY R.P.M.
2730			

DEPTH (m)	DEVIATION (°)	DIRECTION

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Derrick Inspection		
(3) ... Posted (if required)		
(4) ... Posted		
(5) ...		
(6) BOP Drills Performed		
(7) Visually Inspect BOP's ...		
(1) Rig/Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) ...		

YEAR	MONTH	DAY
[illegible]	[illegible]	08

RIG NO [illegible]

FUEL — 8 00

BOILER

	TEMPERATURE °C
	CURRENT CONDITIONS
	WIND DIRECTION
	ROAD

LAST	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
CASING / TUBING	244.5	216.7	7.24	[illegible]	MC[illegible]	189	2633.89	6.35	2627.50
OR LINER									

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]	[illegible]	[illegible]

TOTALS

SHALE SHAKER

NO. TYPE	
SCREENS CHANGED	YES NO
TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

ACCUM[illegible]

METRES DRILLED / TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ROTARY R.P.M.	WT. ON BIT
[illegible]	[illegible]		12

[illegible] 2725 [illegible]

[illegible] 2725.25 ROTATE

DEPTH (m)	DEVIATION (°)	DIRECTION

NOTES

METRES DRILLED / TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

11:00	14:00
[illegible]	[illegible]
[illegible]	[illegible]
5.8	6.0
[illegible]	11.5
78.6	80.1

FROM	TO	ROTARY R.P.M.	WT. ON BIT
2725	2730	[illegible]	[illegible]

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
[illegible]	152	[illegible]	152

[illegible] 30 1½ Drill [illegible] 2725.25 – 2730.78 ROTATE

1430 [illegible] ½ 6 Pull up into casing

DEPTH (m)	DEVIATION (°)	DIRECTION

NOTES [illegible]

[illegible] 3X

METRES DRILLED / TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ROTARY R.P.M.	WT. ON BIT
2730			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152

1600 1745 1¾ 6 Pull up into casing

1745 2300 5¼ 5 Work on drawworks low clutch

2300 2359 [illegible]

DEPTH (m)	DEVIATION (°)	DIRECTION

NOTES [illegible]

158633

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LICENCE NO.	WELL NAME AND NO.
1900	Canadian Forest et al North Ltara C-21
OPERATOR	CONTRACTOR
Canadian Forest Oil	[illegible] Drilling Ltd.
SURFACE LOCATION	UNIQUE ID
200-C-21-J-94-O-12	200-C-21-J-94-O-12
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
[signature]	[signature]

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's, Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH
[illegible]	[illegible]

RIG NO: [illegible]

FUEL @ [illegible]

RIG: 140

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

	OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	[illegible]
MORN			7 3/4																				1/4
DAY			7 3/4								1/4												
EVE.			7 3/4 1/4					1/4			1/4												
TOTAL			21 3/4					1/4			1/2												1 1/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit		0.25 m
1	Motor	159	6.29 m
1	Ext Sub / Float Sub	163 / 166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NMFlex	163	18.38 m
1	X/O	164	.49 m
7	HWDP	127	64.56 m
1	Jar	165	5.36 m
23	HWDP	127	210.5 m
		BHA	318.57 m
78	D.P.	STANDS	m
~X	D.P.	SINGLES	2 237.36 m
	KELLYDOWN	up	9.41 m
	TOTAL		2565 m
WT. OF DC		19 000	daN
WT. OF STRING		76 000	daN

BIT RECORD

BIT NO	18M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO	VE3DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	60
TOTAL HOURS RUN	61 1/2

CUTTING STRUCTURE: I / O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE CONDITION

HOLE DRAG	[illegible]
TORQUE AT BOTTOM	[illegible] ft lb
FILL ON BOTTOM (m)	

MUD RECORD

TIME	02:00	04:00	06:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	93	85	85
W.L. (cm³)	7.0	7.7	7.5
pH	10.5	10.5	10.5
P.V.T. m³	82.8	82.8	83.9

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Stabilox	1 sx
Drispac	1 sx
Lignite	2 sxs
Lime	1 sx
Sod. Sulfite	2 sxs

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
3	1660	1060	2100

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

METRES DRILLED

FROM	TO	DRD RATE CORE	ROTARY R.P.M.
2558	2565	7	50 MTR / 113

PUMP: 12 900 | LINER SIZE 152

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor	159	6.29 m
1	Ext Sub / Float Sub	163 / 166	.74 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NMFlex	163	18.38 m
1	X/O	164	.49 m
7	HWDP	127	64.56 m
1	Jar	165	5.36 m
23	HWDP	127	210.51 m
		BHA	318.57 m
78	D.P.	STANDS	m
XX	D.P.	SINGLES	2243.36 m
	KELLYDOWN		9.41 m
	TOTAL		2572 m
WT. OF DC		19000	daN
WT. OF STRING		86000	daN

BIT RECORD

BIT NO	18M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO	VE3DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	67
TOTAL HOURS RUN	69 1/4

CUTTING STRUCTURE: I / O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE CONDITION

HOLE DRAG	[illegible] slide [illegible]
TORQUE AT BOTTOM	8-10 [illegible] ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1655	1660	1665
FUNNEL VIS. - (S/L)	110	105	100
W.L. (cm³)	6.5	6.5	6.5
pH	10.5	10.5	10.5
P.V.T. m³	84.0	85.9	86.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	100 sx
[illegible]	26 sx
Sod Sulfite	1 sx
Corinox	1 pl
Biocide	1 pl
Lignite	2 sx

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

METRES DRILLED

FROM	TO	DRD RATE CORE	ROTARY R.P.M.
2565	2572	7	50 MTR / 113

PUMP: 12700 | 152

8300 | 354

DEPTH (m)	DEVIATION (°)
2552.2	28.6

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25
1	Motor	159	6.29 m
1	Ext Sub / Float Sub	163 / 166	.75 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NMFlex	163	18.38 m
1	X/O	164	.49 m
7	HWDP	127	64.56 m
1	Jar	165	5.36 m
23	HWDP	127	210.5 m
		BHA	318.57 m
79	D.P.	STANDS	2266.07 m
	D.P.	SINGLES	m
	KELLYDOWN		6.57 m
	TOTAL		2578.07 m
WT. OF DC		19000	daN
WT. OF STRING		84000	daN

BIT RECORD

BIT NO	18M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO	VE3DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	73
TOTAL HOURS RUN	76

CUTTING STRUCTURE: I / O / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE CONDITION

HOLE DRAG	1 1/2 T/L Slide 4 [illegible] Rotate
TORQUE AT BOTTOM	8-10 [illegible] ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	18:00	20:00	23:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	93	93	100
W.L. (cm³)	6.5	7.0	7.0
pH	10.5	10.5	10.5
P.V.T. m³	86.6	86.6	86.5

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD RATE CORE	ROTARY R.P.M.
2572	2578	6	50 MTR / 113

PUMP: 12800 | 152 | 65 | 152

6500 | 30

DEPTH (m)	DEVIATION (°)
2561.70	28.8

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
[illegible]	2	[illegible]

RIG NO. [illegible]

FUEL @ 8:00

RIG 140 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6.35	[illegible]

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	164	4½ IF	31	F-1000	EMSCO	254
127	29.07	E3	101	162	↓	13[illegible]	F-1000	EMSCO	254
127	29.02	E2	108	16[illegible]	↓	15[illegible]	F-[illegible]	EMSCO	223.6

20 21 22 23 24 25 26

DIR. WORK	SAFETY MTG.	
	[illegible]	
	¾	
	1¼	

TOTALS	SHALE SHAKER(S)		RENTALS/SERVICES
	NO./TYPE [illegible] FLC		
8	SCREENS CHANGED ☒ YES ☐ NO		TMJ - 517982
8	TOP	TOP 14[illegible]	AMJ - 1240
8	MIDDLE	MIDDLE	ACCUM OIL - 36
24	BOTTOM	BOTTOM	

MORNING TOUR

[illegible] RECORD

04:00	06:00
1660	1660
85	85
7.7	7.5
10.5	10.5
82.8	83.9

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
3	1660	1060	2100

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2553	2565	7	50 MTR 113	14/15

PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12,800	152		152	85

REDUCED PUMP SPEED @ @

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	02:30	2½	2	DRILL F/2553m TO 2561m. ROTATE
02:30	02:45	¼	22	CHECK [illegible]
02:45	05:45	3	2	DRILL F/2561 TO 2564m. ROTATE
05:45	06:30	¾	3	[illegible] @ 2564 T. 2539
06:30	08:00	1½	2	DRILL F/2564 TO 2565m ROTATE

TRANSFERED 0.7m³ OF GEL — Active System
[illegible]

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR, BRAKES & LINKAGE
BLOW DN BOILER 3X

DRILLER'S SIGNATURE [illegible]

BOILER	STACK TEMP	WEIGHT INDICATOR HOOKLOAD		
[illegible] 105	350	160,600	LOCK OUT	

DAY TOUR

RECORD

12:00	14:00
1660	1665
105	100
6.5	6.5
10.5	10.5
85.9	86.1

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2565	2572	7	30 MTR 113	14/15

PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12700	152		152	65

REDUCED PUMP SPEED 8300 @ 54 @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2551.2	28.6	265.6

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0900	1	2	DRILL 2565m - 2566m ROTATE
0900	0915	¼	10	SURVEY @ 2555m
0915	1600	6¾	2	DRILL 2566m - 2572m ROTATE

NOTES: ✓ CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR, BRAKES & LINKAGE
BOILER BLOWN DOWN 3X

DRILLER'S SIGNATURE [illegible]

BOILER	STACK TEMP	WEIGHT INDICATOR HOOKLOAD		
8 105	350	100,000 daN	STOP CARDS	0

EVENING TOUR

MUD RECORD

20:00	23:00
1660	1660
93	100
7.0	7.0
10.5	10.5
86.6	86.5

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2572	2579	6	50 MTR 113	14/15

PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12600	152	65	152	

REDUCED PUMP SPEED 6500 @ 50 @ 56%

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2561.70	28.5	269

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1730	1½	2	DRILL 2572m - 2573m ROTATE
1730	1800	½	3	BACK REAM FOR CONN F/2573m - 2546m
1800	1815	¼	7	KB FUNCTION ANNULAR MSEC. C/S ✓ RSPP
1815	21:00	2¾	2	DRILL 2573m - 2576.40. ROTATE
21:00	21:15	¼	10	BACK REAM & SURVEY @ 2561.70
21:15	23:00	1¾	2	DRILL F/2576.40 TO 2578.20 ROTATE
23:00	23:15	¼	3	BACK REAM & CHECK SCREEN
23:15	24:00	¾	2	DRILL F/2578.20 TO 2579.60 ROTATE

NOTES: ✓ CROWN SAVER, FAST LINE CLAMP, DEADLINE ANCHOR
BLOW DN BOILER 3X BRAKES & LINKAGE

DRILLER'S SIGNATURE [illegible]

BOILER	STACK TEMP	WEIGHT INDICATOR HOOKLOAD		
8 105	350	160,600	LOCK OUTS	0

158632

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH: 01 / 02 — RIG NO. 53 — FUEL @ 8 — RIG 179

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al Mustang C-31

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita Drilling Ltd.

SURFACE LOCATION: 300-C31-60-40-122-30-0

UNIQUE ID: 300-C31-60-40-122-30-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG
MORN.		7¾	¼																		
DAY		7¼	¼				¼			¼											
EVE.		6¾	¾				¼			¼											
TOTAL		21¾	1¼				½			½											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length
1	Bit		.25 m
1	Motor	159	6.29 m
1	Flt Sub / Astro	163/164	.75 m
1	Mud Mtr	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.29 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	169	9.36 m
23	HWDP	127	212.57 m
		BHA	318.57 m
77	D.P.	STANDS	
XX	D.P.	SINGLES	2225.18
	KELLY DOWN		0.70 m
	TOTAL		2546 m
WT. OF DC		15 000 daN	
WT. OF STRING		86 000 daN	

BIT RECORD

BIT NO.	15 M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	41
TOTAL HOURS RUN	40 ½
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr	
HOLE DRAG	Depart Shot ½ Kellys [illegible]
TORQUE AT BOTTOM	9/11000 Ft-lb
FILL ON BOTTOM (m)	

MUD RECORD

TIME	02:00	04:00	06:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	97	95	94
W.L. (cm³)	6.5	6.5	6.5
pH	10.5	10.5	10.5
Temp	87.0	87.6	87.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	48 sxs
Lime	1 sx
Akcoferrol	1 PL
Citrax	1 PL
Biocide	1 PL
Sd Sulfit	1 sx
Bt S.H.	18 sxs

SOLIDS CONTROL: HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2539	2546	7	30 MT / 113

PUMP: 12000 — 152 — Liner size / S.P.M.

3400

DEPTH (m) / DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length
1	Bit		.25 m
1	Motor	159	6.29 m
1	Flt Sub / Astro Sub	163/164	.75 m
1	Mud Mtr	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.35 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	169	9.36 m
23	HWDP	127	212.57 m
		BHA	318.57 m
78	D.P.	STANDS	2237.77 m
	D.P.	SINGLES	
	KELLY DOWN		4.34 m
	TOTAL		2553 m
WT. OF DC		19000 daN	
WT. OF STRING		81000 daN	

BIT RECORD

BIT NO.	15 RM
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	47
TOTAL HOURS RUN	47 ¾
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr	
HOLE DRAG	13000 Nlift 7000 Nlose
TORQUE AT BOTTOM	8-10000 Ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1660	1660	1655
FUNNEL VIS. - (S/L)	93	88	90
W.L. (cm³)	7.0	7.0	7.0
pH	10.5	10.5	11.0
Temp	90.0	90.4	82.4

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
[illegible]	18 sx
Sd S.H.	1 sx
Lignite	2 sx
Caustic	1 sx
Barite	57 sx
Drispac	1 sx
Starpak	1 sx

SOLIDS CONTROL: HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³) — CENTRIFUGE

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2546	2553		36 MTR / 113

PUMP: 12000 — 152 — Liner size / S.P.M.

8000 — 53

DEPTH (m)	DEVIATION (°)
2533.7	27.7

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length
1	Bit		.23 m
1	Motor	159	6.29 m
1	Flt Sub / Astro	163/164	.75 m
1	Mud Mtr	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.35 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	169	9.36 m
23	HWDP	127	212.57 m
		BHA	318.57 m
79	D.P.	STANDS	
X	D.P.	SINGLES	22[illegible]
	KELLY DOWN		
	TOTAL		2558.4 m
WT. OF DC		15000 daN	
WT. OF STRING		86000 daN	

BIT RECORD

BIT NO.	15 M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	53
TOTAL HOURS RUN	54 ½
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr	
HOLE DRAG	11/Pull 15 Slide 9000
TORQUE AT BOTTOM	8/12000 Ft/lb
FILL ON BOTTOM (m)	

MUD RECORD

TIME	18:00	20:00	22:30
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	92	88	89
W.L. (cm³)	6.5	6.6	7.0
pH	10.5	10.5	10.5
Temp	84.0	83.1	82.3

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Pot-Sulph	18 sxs
Soda Ash	1 sxs
Lignite	2 sxs
GEL	40 sxs

SOLIDS CONTROL: HOURS RUN / INTAKE DENSITY (kg/m³) / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2552	2558	6	MTR / 113

PUMP: 12400 — 152 — 95 — Liner size / S.P.M.

8200 — 6

DEPTH (m)	DEVIATION (°)
2542.8	28.1

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
	2	20

RIG NO 58

FUEL @ 8:00

RIG 179 BOILER

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	71.6		K-1	19	263.37	6.35	269.50

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.25	HW	77	159	4½ IF	31	F-1000	FMSCO	254
127	38.07	E9	101	162	↓	135	F-1000	FMSCO	254
127	29.02	E2	108	158	↓	133	F-810	FMSCO	225.6

SHALE SHAKER(S)	
NO. / TYPE 2 Derrick FLC	
SCREENS CHANGED ☐ YES ☐ NO	
TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

TOTALS 24

RENTALS SERVICES

TMJ — 5111EE

AMJ — 1124

Acclim Oil — 36

MORNING TOUR

RECORD

24:00	06:00
1660	1660
95	94
6.5	6.5
10.5	10.5
87.6	89.7

METRES DRILLED

FROM	TO	BRG. RMR. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2539	2546	7	30 MTR	16
			113	29

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12200	152		152	85

REDUCED PUMP SPEED: 3400 @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	02:30	2½	2	DRILL F/2539.60 TO. 2542m. SLIDE
02:30	02:45	¼	3	Back Ream Slide Hole F 2542 To 2537
02:45	07:45	4	2	Drill F/2542 TO 2546m ROTATE.
07:45	08:00	¼	3	Back Ream F 2546m - 2527m FOR CONN.

NOTES Crown Saver, Fastline Clamp, Deadline Anchor, Boiler Blown Down 3X

DRILLER'S SIGNATURE: [illegible]

8	105	350°	100 000	CREW TRACK: ENVIRO - O

DAY TOUR

RECORD

12:00	14:00
1660	1655
88	90
7.0	7.0
10.5	11.0
90.4	82.4

METRES DRILLED

FROM	TO	BRG. RMR. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2546	2552	6	30 MTR	15/15
			113	25/29

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12600	152		152	86

REDUCED PUMP SPEED: 8000 @ 53 @ 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2533.7	27.7	215.6

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

CENTRIFUGE

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	08:15	¼	7	R/S FUNCTION REMOTE CHOKE & BSPD
08:15	10:00	1¾	2	DRILL 2546m - 2547m ROTATE
10:00	10:15	¼	10	SURVEY
10:15	15:00	4¾	2	DRILL 2547m - 2552m SLIDE
15:00	15:15	¼	3	BACK REAM SLIDE HOLE & CLEAN PIPE SCREEN
15:15	16:00	¾	2	DRILL 2552m - 2552.2m ROTATE

NOTES Crown Saver, Fastline Clamp, Deadline Anchor, Boiler Blown Down 3X

DRILLER'S SIGNATURE: [illegible]

8	105	350°	110 000 daN	MIXING	O

EVENING TOUR

MUD RECORD

20:00	22:30
1660	1660
88	89
6.6	7.0
10.5	10.5
83.1	82.3

METRES DRILLED

FROM	TO	BRG. RMR. CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2552	2558	6	30 MTR	7/14
			113	26/25

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12400	152	85	152	

REDUCED PUMP SPEED: 8200 @ 53 @

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2542.8	28.1	214.3

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	19:15	3¼	2	DRILL 2552.2m - 2555 M. ROTATE
19:15	20:00	¾	3	BACK REAM FOR CONN.
20:00	22:30	2½	2	DRILL F/2555 TO 2556.5m ROTATE
22:30	22:45	¼	7	R/S FUNCTION PIPE RAM & CLOSE
22:45	23:00	¼	10	CHECK SCREEN & SURVEY
23:00	24:00	1	2	DRILL F/2556.5 TO 2558m. ROTATE

NOTES Crown Saver, Fastline Clamp, Deadline Anchor, Boiler Blown Down 3X.

DRILLER'S SIGNATURE: [illegible]

8	105	350°	100,000.	CREW [illegible]

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158631

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	initial TC	initial
(2) Detailed Inspection-Weekly (using checklist)	initial	initial
(3) H²S Signs Posted (if required)	initial TC	initial
(4) Well Licence & Stick Diagram Posted	initial TC	initial
(5) Flare Lines Staked	initial TC	initial
(6) BOP Drills Performed	initial TC	initial
(7) Visually inspect BOP's - Preventers & Degasser Lines	initial TC	initial
(1) Rig Site Health and Safety Meeting (once/month)		initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		initial
(3) Mast Inspection Before Raising or Lowering		initial
(4) Crown Saver Checked		initial
(5) Motor Kills checked		initial

YEAR 2001 MONTH 02

RIG NO. 58

FUEL

RIG 111

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest etal North Liard C-31

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita Drilling Ltd.

SURFACE LOCATION: 300-C31-...-123...

UNIQUE ID.: 300-C31-...-123...

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Flow V
MORN.		7¾								1/4												
DAY		5½	½		1¼		3/4			1/4												1/4
EVE.		7¼	½							1/4												
TOTAL		20½	1		1¼		3/4			3/4												1/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit		0.25 m
1	Motor	159	6.29 m
1	Flt Sub / Res Sub	165/160	.75 m
1	Monel DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.45 m
7	HWDP	127	64.56 m
1	Jar	169	5.36 m
23	HWDP	127	210.54 m
		BHA	318.57 m
77	D.P.	STANDS	2208.90 m
	D.P.	SINGLES	m
	KELLYDOWN	up	7.47 m
	TOTAL		2535 m
WT. OF DC		19000	1000 daN
WT. OF STRING		85000	1000 daN

BIT RECORD

BIT NO.	15 RR
SIZE (mm)	215.9
IADC CODE	417
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	...3DA
JETS (mm)	3 x 13.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	30
TOTAL HOURS RUN	26¾
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	10/14000 daN Slide Kill Rotate
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1655	1650	1650
FUNNEL VIS. - (S/L)	90	90	97
W.L. (cm³)	7.5	7.5	7.0
pH	10.5	10.5	10.5
P.V.T. m³	83.6	83.9	85.4

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Pot. Sulph	1 sx
Sod. Sulph	1 sx
Barite	168 sxs
Lignite	2 sx
Drispac	1 sx
Starpak	1 sx

CENTRIFUGE

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2515	2535	7	35 / 113

	LINER SIZE (mm)	S.P.M.
11500	152	85

DEPTH (m)	DEVIATION (°)
2504.9	24.4

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			0.26 m
1	Motor	159	6.29 m
1	Flt Sub / Res Sub	165	.75 m
1	Mud DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	Jar	169	5.36 m
23	HWDP	127	210.54 m
		BHA	318.57 m
77	D.P.	STANDS	2208.90 m
1	D.P.	SINGLES	9.52 m
	KELLYDOWN	up	4.59 m
	TOTAL		2532.80 m
WT. OF DC		19000	1000 daN
WT. OF STRING		86000	1000 daN

BIT RECORD

BIT NO.	15 RR
SIZE (mm)	215.9
IADC CODE	417
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	PL3DA
JETS (mm)	3 x 13.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	27
TOTAL HOURS RUN	25¾
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	10-12000 Slide ?/Rotate
TORQUE AT BOTTOM	8-10000 FT/LBS
FILL ON BOTTOM (m)	—

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	08:00	11:00	13:00
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	110	100	100
W.L. (cm³)	7.0	7.0	7.0
pH	10.5	10.5	10.5
P.V.T. m³	86.0	82.2	87.5

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Corrinox	1 DL
Biocide	1 DL
Potassium	18 sx
Sod. Sulfite	1 sx
Alcomer	1 DL
Lime	
Drispac	
Starpak	

CENTRIFUGE

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2535	2532	7	35 / 113

	LINER SIZE (mm)	S.P.M.
11950	152	

7800 | 516

DEPTH (m)	DEVIATION (°)
2514.4	25.5

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			0.25 m
1	Motor	159	6.29 m
1	Flt Sub / Res Sub	165/160	.75 m
1	Mud DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.45 m
7	HWDP	127	64.56 m
1	Jar	169	5.36 m
23	HWDP	127	210.54 m
		BHA	318.57
77	D.P.	STANDS	
XV	D.P.	SINGLES	2228.13 m
	KELLYDOWN		7.20
	TOTAL		2539.32
WT. OF DC		19000	1000 daN
WT. OF STRING		86000	1000 daN

BIT RECORD

BIT NO.	15 RR
SIZE (mm)	215.9
IADC CODE	417
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	
JETS (mm)	3 x 13.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	34
TOTAL HOURS RUN	33
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	12000 19 Slide 4 Rotate
TORQUE AT BOTTOM	9 ... FT/LB
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	18:00	20:30	22:30
DENSITY kg/m³	1660	1660	1660
FUNNEL VIS. - (S/L)	94	95	95
W.L. (cm³)	6.5	6.5	6.5
pH	10.5	10.5	10.5
PVT m³	87.0	88.4	88.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2532	2539		118

	LINER SIZE (mm)	S.P.M.
12150	152	

DEPTH (m)	DEVIATION (°)
2524	26.7

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Safe Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH / DAY: [illegible]
RIG NO: [illegible]
FUEL @ 8:00
RIG: 111 BOILER

LAST CASING TUBING OR LINER	O.D (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.3	79.6	[illegible]	[illegible]	192	2297	5.70	2293

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH
127	74.23	[illegible]	77	1.9	[illegible]	21	F-1000	EMSCO	254
127	42.09	E?	101	162	↓	13	F-1000	EMSCO	254
127	29.02	E?	108	152		150	F-850	EMSCO	228.6

SAFETY MTG.	
Flow V	
1/4	
1/4	

TOTALS	SHALE SHAKERS		RENTALS SERVICES
	NO/TYPE: 2 Derrick FLC		TMJ 547631
8	SCREENS CHANGED ☐ YES ☐ NO		HMJ 885.
8	TOP 175	TOP 140	Accum Oil 36
8	MIDDLE 175	MIDDLE 140	
24	BOTTOM 175	BOTTOM 140	

MORNING TOUR

RECORD

04:00	06:00
1650	1650
90	97
7.5	7.0
10.5	10.5
83.9	85.4

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2515	2525	7	30 Mtr	14
			113	38

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION
2504.9	24.4	267.9

CENTRIFUGE

TIME LOG FROM	TO			DETAILS OF OPERATION IN SEQUENCE AND REMARKS
[illegible]	[illegible]	1/4	10	SURVEY @ 2504.90
[illegible]	[illegible]	1 3/4	2	DRILL F/2515.90 To 2524 SLIDE
[illegible]	[illegible]		2	DRILL 2524m - 2525 ROTATE

NOTES: [illegible] Fastline [illegible] Drawworks Anchor
Boiler Blow Down 3X. [illegible] Linkage.

8	[illegible] 350	110,000 daN	LOADER OPERATOR	0

DAY TOUR

RECORD

11:00	13:00
1660	1660
100	100
7.0	7.0
10.5	10.5
82.2	87.5

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2525	2532	7	30 Mtr	12/15
			113	[illegible]

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11950	152		[illegible]	[illegible]

7800		516		50

DEPTH (m)	DEVIATION (°)	DIRECTION
2519.4	25.5	268.0

CENTRIFUGE

TIME LOG FROM	TO			DETAILS OF OPERATION IN SEQUENCE AND REMARKS
[illegible]	0900	1	2	DRILL 2525m - 2526m ROTATE
0900	0930	1/2	3	BACK REAM TIGHT HOLE FOR CONN. 2526-2496
0930	0945	1/4	7	[illegible] FUNCTION BTM PIPE RAMS & SEL. VESSEL
0945	1015	1/2	2	DRILL 2526m - 2527.8m ROTATE
1015	1030	1/4	22	Flow CHECK LOSS OF 3 m3
1030	1045	1/4	2	DRILL 2527m - 2528m ROTATE
1045	1100	1/4	10	SURVEY
1100	1215	1 1/4	5	CIRC BTM'S UP SAMPLE
1215	1600	3 3/4	2	DRILL 2528m - 2532m SLIDE

NOTES: ✓CROWN SAVER FASTLINE CLAMP DRAWLINE ANCHOR
BOILER BLOW DOWN 3X

8	[illegible] 350	105 000 daN	FUEL TRANSFER	0

EVENING TOUR

RECORD

20:30	22:30
1660	1660
95	95
6.5	6.5
10.5	10.5
88.4	88.2

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2532	2539		30 Mtr	
			113	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12150	152		152	85

DEPTH (m)	DEVIATION (°)	DIRECTION
2534	26.7	267.2

TIME LOG FROM	TO			DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	1730	1 1/2	2	DRILL 2532m - 2533 SLIDE
1730	1745	1/4	3	BACK REAM SLIDE HOLE & CLEAN PIPE SCREEN
1745	2230	4 3/4	2	DRILL 2533m - 2539m. ROTATE
2230	2245	1/4	3	WORK STRING TO CLEAN HOLE FOR SURVEY
2245	2300	1/4	10	Survey @ 2529m.
2300	2400	1	2	DRILL F/2538 To 2539.60 m. SLIDE

NOTES: ✓[illegible] Fastline Clamp [illegible] Anchor
Boiler Blow Down 3X

[illegible] 350	[illegible]	Loader Operator	

158630

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LICENCE NO.:	WELL NAME AND NO.:	YEAR	MONTH
1900	Canadian Forest et al North Liard C31	2001	02

RIG NO. 58

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita Drilling Ltd

SURFACE LOCATION: 200-C31-6040-12330-0

UNIQUE ID.: 300-C31-6040-12330-00

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

FUEL @ 8

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Gamma	BOP Drill	
MORN.		5 3/4																				2 1/4		
DAY		5 3/4					1/4			1/4												1 1/2	1/4	
EVE.		6 1/4					1/4																	
TOTAL		17 3/4					1/2			1/4												4 1/4	1/4	

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		OD	Length
1	bit		.25 m
1	Motor	159	6.29 m
1	FLT Sub / Res Sub	163 / 166	.75 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.45 m
7	HWDP	127	64.56 m
1	JAR	165	5.36 m
23	HWDP	127	210.56 m
	BHA		315.57 m
76	D.P.	STANDS	m
X	D.P.	SINGLES	2159.72 m
	KELLY DOWN		3.21 m
	TOTAL		2505.0 m
WT. OF DC		19,000	1000 daN
WT. OF STRING		56,000	1000 daN

BIT RECORD

BIT NO.	19 M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / T / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	Slide 6K rotate
TORQUE AT BOTTOM	7-15,000 Ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	02:00	04:00	06:00
DENSITY kg/m³	1170	1170	1170
FUNNEL VIS. - (S/L)	90	89	88
W.L. (cm³)	6.8	6.5	7.0
pH	10.5	10.5	10.5
P.V.T. m³	80.7	80.0	80.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Caustic	1 PL
Sod Sulfite	15 sx
Bd. Sulph.	14 sxs
Gel	15 sxs
Alconolo?	1 PL

SOLIDS CONTROL: HOURS RUN / INTAKE DENSITY (kg/m) / OVERFLOW DENSITY (kg/m) / UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRLG. REAM CORE-C	ROTARY R.P.M.
2505			25 MTR
			113

PUMP PRESS.	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11500	152	85	15
9200		50	

DEPTH (m) / DEVIATION (°) / D

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		OD	Length
1	bit		.25 m
1	Motor	159	6.29 m
1	FLT Sub / Res Sub	163 / 166	.75 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	JAR	169	5.36 m
23	HWDP	127	210.56 m
	BHA		318.57 m
76	D.P.	STANDS	
XX	D.P.	SINGLES	2199.32 m
	KELLY DOWN - UP		6.89 m
	TOTAL		2511. m
WT. OF DC		19000	1000 daN
WT. OF STRING		56000	1000 daN

BIT RECORD

BIT NO.	19 M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	6
TOTAL HOURS RUN	5 3/4
CUTTING STRUCTURE: T / T / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	10000# Slide 4000# Rotate
TORQUE AT BOTTOM	7-9000 FT/LBS
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1665	1660	1655
FUNNEL VIS. - (S/L)	88	95	95
W.L. (cm³)	7.5	6.5	6.5
pH	10.5	10.5	10.5
P.V.T.	79.8	79.8	80.5

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Desco	15 x
Starpak	1 5x
Caustic	1 pl.
Lignite	1 5x
Sod Sulfite	15 x
Bd. Sulph?	14 5x
Biocide	1 pl
Alconol	1 pl

SOLIDS CONTROL: HOURS RUN 0 / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

Centrifuge: HOURS RUN 0

METRES DRILLED

FROM	TO	DRLG. REAM CORE-C	ROTARY R.P.M.
2505	2511	6	30 MTR
			113

PUMP PRESS.	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11800	152	85	15
7500		50	

DEPTH (m)	DEVIATION (°)	DIR.
2495.3	23.5	27

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		OD	Length
1	bit		0.25 m
1	Motor	159	6.29 m
1	Float / Res Sub	163 / 166	.75 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.45 m
7	HWDP	127	64.57 m
1	JAR	169	5.36 m
23	HWDP	127	210.56 m
	BHA		316.57 m
77	D.P.	STANDS	2208.5
	D.P.	SINGLES	
	KELLY DOWN		2.57
	TOTAL		2518
WT. OF DC		19,000	
WT. OF STRING		56,000	

BIT RECORD

BIT NO.	19 M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-03
SERIAL NO.	P63DA
JETS	3 x 15.9
DEPTH OUT	
DEPTH IN	2505
TOTAL METRES DRILLED	13
TOTAL HOURS RUN	12
CUTTING STRUCTURE	
HOLE DRAG	10,000# Slide [illegible]
TORQUE AT BOTTOM	[illegible] Ft/lbs
FILL ON BOTTOM	

MUD RECORD

TIME	17:00	21:00	23:00
DENSITY kg/m³	1650	1660	1655
FUNNEL VIS. - (S/L)	87	85	93
W.L. (cm³)	6.5	6.8	7.0
pH	10.5	10.5	10.5
P.V.T.	84.2	84.2	83.9

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Caustic	1 PL
Biocide	1 PL
Alconol	1 PL

SOLIDS CONTROL: HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRLG. REAM CORE-C	ROTARY R.P.M.
2511	2518	7	30 MTR
			113

PUMP PRESS.	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11,900	152	85	15

DEPTH (m) / DEVIATION (°) / DIREC

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial EF	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH / DAY: [illegible] / [illegible] / 18

RIG NO: 55

FUEL @ 8:00

RIG: 141 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.61	IPT & C	HCL	198	2632.97	3.74	2629.3[illegible]

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.25	HW	77	169	4½ IF	31	F-1000	EMSCO	254
127	38.07	E2	101	162	↓	135	F-1000	EMSCO	254
127	29.02	E2	108	156	↓	153	F-850	EMSCO	229

BR. CHK	SAFETY MTG.						TOTALS
	GAMMA	BOP DRILL					
	2¾						8
	1½	¼					8
							8
	4¼	¼					24

SHALE SHAKER(S)

NO. 2 TYPE DERRICK FLC

SCREENS CHANGED ☑ YES ☐ NO

TOP 175	TOP 140
MIDDLE 175	MIDDLE 140
BOTTOM 175	BOTTOM 140

RENTALS SERVICES

TMS 591354

AMS 642

Accum Oil - 36

RECORD — MORNING TOUR

04:00	06:00
1170	1170
89	78
6.5	7.0
10.5	10.5
80.0	80.0

METRES DRILLED

FROM	TO	DH-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2505			35 MTR	14
			113	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11500	152	85	152	

9200 / 52

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
00:00	05:15	5¼	3	Ream & wash dn to 2505. F/2455m. Gamma @ 5min/1m.
05:15	08:00	2¾	22	Change out shaker screen, Ream Gamma F/2478 to 2505 @ 5min/1m meter.

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor. Boiler Blown Down 3x

8 | 105 | 350 | 110 000 | RIG SERVICE | 0

RECORD — DAY TOUR

12:00	14:00
1660	1655
95	95
6.5	6.5
10.5	10.5
79.8	80.5

METRES DRILLED

FROM	TO	DH-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2505	2511	6	30 MTR	10/12
			113	28

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11800	152	85	152	

7500 / 50 / 1490 m

DEPTH (m)	DEVIATION (°)	DIRECTION
2495.3	23.5	270.1

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	0930	1½	22	Log Gamma F/2478m to 2505m
0930	0945	¼	23	BOP Drill Well Secure in 1min.
0945	1000	¼	7	R/S Function Annular 15sec ½ ✓ RSPP
1000	1315	3¼	2	Drill Bit & Drill 2505m - 2509m Rotate
1315	1330	¼	10	Survey
1330	1600	2½	2	Drill 2509m - 2511m Slide

0 | Centrifuge | 0

NOTES ✓ Crown Saver. Fastline Clamp. Deadline Anchor. Boiler Blown Down 3x Grease Crown

6 | 105 | 350 | 110 000 daN | FIRST AID | 0

MUD RECORD — EVENING TOUR

20:00	23:00
1660	1655
85	93
6.8	7.0
10.5	10.5
84.2	83.9

METRES DRILLED

FROM	TO	DH-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2511	2518	7	35 MTR	14
			113	28

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	19:45	3¾	2	Drill 2511m - 2515.50 Slide
19:45	21:30	1¾	2	Drill F/2515.50 to 2517. Rotate
21:30	22:30	1	3	Ream & Clean Hole For Conn.
22:30	22:45	¼	7	R/S Function BTM pipe rams 7sec ✓ RSPP
22:45	24:00	1¼	2	Drill F/2517 to 2518.90 Rotate

Transferred 6m³ of Gel - Active System

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor

Boiler Blow down 3x   Pickle & Drains

8 | 105 | 350 | 110 000 | RIG SERVICE | 0

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR: 2001 MONTH: 12
RIG NO. 58
FUEL
RIG 176
WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900
WELL NAME AND NO.: Canadian Forest et al North Liard C21
OPERATOR: Canadian Forest [illegible]
CONTRACTOR: [illegible] Drilling LTD.
SURFACE LOCATION: 200-C21-A040-J230-0 [illegible]
UNIQUE ID.: 200-C21-A040-J230-0 [illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]
SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME - HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	[illegible]
MORN.		5½			1¾	½																
DAY					¼	1¾																1
EVE.			5¾			1½	¼		½													
TOTAL		5½	5¾		2	3¾	¼		½													1

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1	BIT		.25 m
1	Motor	160	6.17 m
1	Float sub / Bit sub	43	.75 m
1	MWD	157	9.26 m
1	Ext Sub	164	1.95 m
2	NM Flex	163	18.38 m
1	X/O	164	.45 m
7	HWDP	127	64.56 m
1	JAR	170	5.43 m
23	HWDP	122	210.5 m
	RIH		315.52 m
76	D.P.	STANDS	m
X	D.P.	SINGLES	2109.72 m
	KELLYDOWN		2.24 m
	TOTAL		2505 m
WT. OF DC	19 000 daN		
WT. OF STRING	96 000 daN		

BIT RECORD

BIT NO.	17M	
SIZE (mm)	215.9	
IADC CODE	4 1 7	
MFG.	Hughes	
TYPE	GT-30S	
SERIAL NO.	P55CF	
JETS (mm)	3 x 12.7	
DEPTH OUT (m)	2505	
DEPTH IN (m)	2436	
TOTAL METRES DRILLED (m)	69	
TOTAL HOURS RUN	74 ½	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 10/12 daN slide
TORQUE AT BOTTOM: 4/5000 rotate
FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	02:00	04:00	06:30
DENSITY kg/m³	1660	1660	1655
FUNNEL VIS. - (S/L)	87	82	90
W.L. (cm³)	6.5	6.8	6.3
pH	10.5	10.5	10.5
Pit Vol m³	83.1	83.4	84.3

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Caromox	1 PL
Sod. Sulf.	1 Sx
Biocide	1 PL
Lime	1 Sx
Pot. Sulph.	14 sxs
Barite	89 sxs
Lignite	1 Sx

SOLIDS: HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2501	2505	4	30 / 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12200	152	95	152

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	Motor	159	6.29 m
1	Flt sub / Bit sub	43 / 116	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.92 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	169	5.36 m
23	HWDP	127	210.51 m
	RIH		316.57 m
	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC	19 000 daN		
WT. OF STRING	86 000 daN		

BIT RECORD

BIT NO.	17M	18M
SIZE (mm)	215.9	215.9
IADC CODE	4 1 7	4 1 7
MFG.	Hughes	Hughes
TYPE	GT-30S	GT 03
SERIAL NO.	P55CF	863 DA
JETS (mm)	3 x 12.7	3 x 15.9
DEPTH OUT (m)	2505	
DEPTH IN (m)	2436	2505
TOTAL METRES DRILLED (m)	69	
TOTAL HOURS RUN	84 ½	

CUTTING STRUCTURE T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
3	3	BT	M	E	1/8	CT	BR	.8

HOLE DRAG: —
TORQUE AT BOTTOM: —
FILL ON BOTTOM (m): —

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

MUD MATERIALS ADDED: PRODUCT | AMOUNT X UNIT

SOLIDS: HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2505			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		152

DEPTH (m) | DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	Motor	159	6.29 m
1	Flt sub / Bit sub	43 / 116	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	167	5.36 m
23	HWDP	127	210.51 m
			318.57 m
75	D.P.	STANDS	m
XY	D.P.	SINGLES	2170.09 m
	KELLYDOWN		m
	TOTAL		2455 m
WT. OF DC	19 000 daN		
WT. OF STRING	96 000 daN		

BIT RECORD

BIT NO.	18M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	Hughes
TYPE	GT-303
SERIAL NO.	863DA
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2505
TOTAL METRES DRILLED (m)	Ream 35 / 5¾ hrs
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: [illegible]
TORQUE AT BOTTOM:
FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	20:30	23:00
DENSITY kg/m³	1670	1670
FUNNEL VIS. - (S/L)	93	92
W.L. (cm³)	6.5	6.8
pH	10.5	10.5
T.V.F.	81.8	80.7

MUD MATERIALS ADDED: PRODUCT | AMOUNT X UNIT

SOLIDS: HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLD RMR CORE-C	ROTARY R.P.M.
2505			35
2450	2485	R	50

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		152

DEPTH (m) | DEVIATION (°)

FOLD HERE →

DAILY CHECKS — OPR. / R.M.
(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (using checklist)
(3) H2S Signs Posted (if required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually inspect BOP's - Flarelines & Degasser Lines
(1) Rig Site Health and Safety Meeting (one/crew/month)
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills checked

YEAR	MONTH	DAY
[illegible]	[illegible]	[illegible]

RIG NO 58

FUEL @ 8:00

RIG 176 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	71.1	PT&C	HCL	159	2632.57	[illegible]	2629.5

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HU	77	169	4½ IF	31	F-1000	EMSCO	254
127	29.07	E2	101	162	↓	135	F-1000	EMSCO	254
127	29.02	E2	108	156		150	F-850	EMSCO	228.6

SAFETY MTG. [illegible]

TOTALS: 8, 8, 8, 24

SHALE SHAKER(S)

NO./TYPE 2 DERRICK FLC

SCREENS CHANGED ☑ YES ☐ NO

TOP 175	TOP 140	
MIDDLE 175	MIDDLE 140	
BOTTOM 175	BOTTOM 140	

RENTALS SERVICES
TMI 54119
AMI 457
Accum Un. - 36

MORNING TOUR

RECORD

04:00	06:30
1660	1655
82	90
6.8	6.3
10.5	10.5
83.4	84.3

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2501	2505	4	50	14
			95	20

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12200	152	95	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0000	04:15	4¼	2	Drill F/2501.50 TO 2504.50
0415	05:45	1½	2	Drill F/2504.50 TO 2505 ROTATE
05:45	07:15	1½	5	[illegible]
0715	0730	¼	5	Pump out From 2505 m - 2450 m
0730	0800	½	6	TOOH without Pumping F/2450 m - 2278 m

TRANSFERED 0.7 m³ OF GEL - Active System

NOTES: ✓ Crown Saver Fastline Clamp, Deadline Anchor Checked & [illegible] Boiler Blow Dn 3X

[illegible] 105 350 [illegible] [illegible]

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2505				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	0830	½	6	Flow / Pump Pill Blow out Kelly Hose
0830	1200	3½	6	TOOH. Flow / 40 Hw, out of hole
1200	1300	1	22	LD motor, jars & MWD New Motor & Bit
1300	1415	1¼	6	RIH To 413m Fill Pipe every [illegible]
1415	1430	¼	5	Test MWD Tool
1430	1600	1½	6	RIH F/413m - 1571m Fill Pipe Every 500m

Trip Record
Cal 13.37 m³ Diff = [illegible] m³
Meas 15.57 m³

NOTES: ✓ Crown Saver Fastline Clamp Deadline Anchor
Boiler Blow Down 3X

[illegible] 0 105 350 | 130 000 daN

EVENING TOUR

RECORD

23:00	
1670	
92	
6.8	
10.5	
80.7	

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2505			35	
2450	2485	R	90	

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	1700	1	6	RIH F/1571m - 2278m Fill Pipe
1700	1730	½	9	Slip & Cut 30m
1730	1745	¼	7	K/S Function Annular 17 sec. c/s
1745	1815	½	6	R.I.H. 2278m - 2450m
1815			9	Drl. Circ, & wash Down @ 5min/m For Gamma
	2400	5¾	3	Finish Down to 2485 m KB

NOTES: ✓ Crown Saver Fastline Clamp, Deadline Anchor
✓ Boiler Blow Down 3X

[illegible] 105 350 | [illegible]

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158628

LICENCE NO.	WELL NAME AND NO.
[illegible]	[illegible] FOREST etal NORTH [illegible] C31

OPERATOR	CONTRACTOR
[illegible]	[illegible]

SURFACE LOCATION	UNIQUE ID
[illegible]	[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
[illegible]	[illegible]

DAILY CHECKS — OPR. — R.M.

FUEL .86

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN		$1\frac{1}{4}$ $1\frac{1}{4}$					$\frac{1}{4}$														
DAY		$7\frac{3}{4}$								$\frac{1}{4}$											
EVE		$6\frac{1}{4}$ $1\frac{1}{4}$					$\frac{1}{4}$			$\frac{1}{4}$											
TOTAL		$20\frac{1}{4}$ $\frac{1}{2}$					$\frac{1}{2}$			$\frac{1}{2}$											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25
1	MOTOR	160	6.17
1	FLOAT SUB / DEC SUB	163	.75
1	MWD DC	157	9.26
1	EXT SUB	164	1.98
2	NM FLEX	162	18.35
1	X/O	164	.45
7	HWDP	127	64.56
1	JAR	174	5.43
13	HWDP	127	210.5
	BHA		316.52
76	D.P.	STANDS	2170.39
	D.P.	SINGLES	
	KELLYDOWN		9.95
	TOTAL		2490.60
	WT. OF DC		19,000
	WT. OF STRING		86,000

BIT RECORD

BIT NO	17M
SIZE (mm)	215.9
IADC CODE	417
MFG.	HUGHES
TYPE	GT-SC8
SERIAL NO	255CF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	54
TOTAL HOURS RUN	$64\frac{3}{4}$

CUTTING STRUCTURE: T / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: [illegible]

TORQUE AT BOTTOM: [illegible]

FILL ON BOTTOM (m): —

MUD RECORD

TIME	02:00	04:00	6:30
DENSITY kg/m³	1670	1670	1660
FUNNEL VIS. (S/L)	72	75	95
W.L. (cm³)	7.4	8.0	7.0
pH	10.5	10.5	10.5
[illegible]	81.8	81.8	81.7

PRODUCT	AMOUNT X UNIT
Drispac	1sx
Stimpak	1sx
Lignite	1sx
Biocide	1pl
[illegible]	1pl
Sod Sulfite	1sx
BARITE	

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
3	1670	1550	2160
3	1670	1050	1990

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2485	2490	5	30

	LINER SIZE	S.P.M.
11,350	152	
7100		45

DEPTH (m) — DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25
1	MOTOR	160	6.17
1	FLT SUB / DEC SUB	163	.75
1	MWD DC	157	9.26
1	EXT SUB	164	1.98
2	NM FLEX	163	18.36
1	X/O	164	.46
7	HWDP	127	64.56
1	JAR	174	5.43
13	HWDP	127	210.5
	BHA		316.52
76	D.P.	STANDS	2180.33
	D.P.	SINGLES	
	KELLYDOWN		3.50
	TOTAL		2495.65
	WT. OF DC		17,000
	WT. OF STRING		86,000

BIT RECORD

BIT NO	17M
SIZE (mm)	215.9
IADC CODE	417
MFG.	HUGHES
TYPE	GT-SC8
SERIAL NO	255CF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	59
TOTAL HOURS RUN	$72\frac{1}{2}$

CUTTING STRUCTURE: T / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: [illegible]

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME	08:00	12:00	14:00
DENSITY kg/m³	1660	1650	1650
FUNNEL VIS. (S/L)	95	92	85
W.L. (cm³)	7.0	6.8	7.0
pH	10.5	10.5	10.5
[illegible]	81.8	82.5	82.9

PRODUCT	AMOUNT X UNIT
Biocide	1pl
Alcomer	1pl
[illegible]	1pl
Sod Sulfite	1sx
Barite	73sx
Drispac	1sx
Stimpak	1sx
Lignite	1sx

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2490	2495	5	30

	LINER SIZE	S.P.M.
11900	152	
7100		50

DEPTH (m)	DEVIATION (°)
2476.4	20.4

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25
1	MOTOR	160	6.17
1	FLOAT SUB / DEC SUB	163	.75
1	MWD DC	157	9.26
1	EXT SUB	169	1.98
2	NM FLEX	162	18.35
1	X/O	164	.45
7	HWDP	127	64.56
1	JAR	174	5.42
13	HWDP	127	210.5
	BHA		316.52
76	D.P.	STANDS	
	D.P.	SINGLES	2180.33
	KELLYDOWN		6.74
	TOTAL		2501.59
	WT. OF DC		19,000
	WT. OF STRING		86,000

BIT RECORD

BIT NO	17M
SIZE (mm)	215.9
IADC CODE	417
MFG.	HUGHES
TYPE	GT-SC8
SERIAL NO	255CF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	65
TOTAL HOURS RUN	$79\frac{3}{4}$

CUTTING STRUCTURE: T / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: [illegible]

TORQUE AT BOTTOM: [illegible]

FILL ON BOTTOM (m)

MUD RECORD

TIME	18:00	20:00	22:30
DENSITY kg/m³	1660	1665	1660
FUNNEL VIS. (S/L)	92	90	91
W.L. (cm³)	7.0	6.8	5.5
pH	10.5	10.5	10.5
[illegible]	83.0	83.5	82.8

PRODUCT — AMOUNT X UNIT

HOURS RUN — INTAKE DENSITY — OVERFLOW DENSITY — UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2495	2501	6	[illegible]

	LINER SIZE	S.P.M.
10,200	152	95
7100		50

DEPTH (m)	DEVIATION (°)
2485.9	21.8

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around – Noted		
(2) Daily Inspection – Hoist & Casing		
(3) H2S Signs Posted (if required)		
(4) Well Location & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Daily Performed		
(7) Visually inspect BOP's – Flowlines & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

FUEL @ 8:00

RIG NO. 86 BOILER

WEATHER	
TEMPERATURE	-5 °C
CURRENT CONDITIONS	CLEAR
WIND DIRECTION	CALM
ROAD	ICY

LAST	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
CASING	244.5	21.7	71.4	KISC	HCL 189	263	2628	5.7	2627.3
TUBING									
LINER									

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. I.D. (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS
127	74.5	HW	77	159	4½IF	
127	29.7	E	1	162	↓	
127	29.02	E	1.5	150		

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
F-1000	FMC	254
F-1000	FMC	254
F-1000	FMC	229

TOTALS 8 / 24

SHALE SHAKER	
NO. / TYPE	2 DERRICK FLC
SCREENS CHANGED	YES – NO
TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS SERVICES

TMT 45033
AMJ 5511
Accum Gas - 36

SAFETY MTG.

MORNING TOUR

RECORD

04:00	6:30
1670	1660
75	95
8.0	7.6
10.5	10.5
81.8	81.7

METRES DRILLED

FROM	TO	DRILLED / CORED	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2485	2490	5	30	15
			motor 45	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11,750	152		152	9

7100 | 45 | 55

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
3	1670	1050	2100

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
3	1670	1050	1990

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	02:30	2½	2	DRILL F/2485.? TO 2486.?0 SLIDE
02:30	04:30	2	2	DRILL F/2486.?0 TO 2488.?0 ROTATE
04:30		1¾	2	[illegible] Clean Hole F/2488 - 2491 F/[illegible]
		¼	7	R/Service Function Test [illegible] SLIDE
	08:00	2	2	DRILL F/2488.?0 T 2490.6 ROTATE

TRANSFERED 10m³ of Active Mud - WADECO
TRANSFERED 0.7m³ of GEL - Active System

NOTES: W/Brown [illegible], Fastline [illegible], Deadline Anchor [illegible]
Blow Down Boiler 3x Transfer [illegible]

	10.4	552	110,000	CONNECTIONS	0

DAY TOUR

RECORD

12:00	14:00
1650	1650
92	85
6.8	7.0
10.5	10.5
82.5	82.9

METRES DRILLED

FROM	TO	DRILLED / CORED	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2490	2495	5	30 motor	15
			45	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152		152	55

7100 | 50 | 55

DEPTH (m)	DEVIATION (°)	DIRECTION
2476.4	20.4	275.2

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0815	¼	10	SURVEY
0815	1600	7¾	2	DRILL 2490.6 m - 2495.6 m SLIDE

NOTES: [illegible] Saver, Fastline [illegible], Deadline Anchor
Boiler Blowdown 3X

[illegible]	8	165	550	100,000 daN	CONNECTIONS	0

EVENING TOUR

RECORD

20:00	22:30
1665	1660
90	91
6.8	5.5
10.5	10.5
83.3	82.1

METRES DRILLED

FROM	TO	DRILLED / CORED	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2495	2501	6	30 MTR	11/15
			45	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12200	152	96	152	

7100 | 50 | 115

DEPTH (m)	DEVIATION (°)	DIRECTION
2485.9	21.8	271

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	17:15	1¼	2	Drill 2495.6m - 2496.[illegible] SLIDE
1715	1730	¼	3	Back Ream Slide Hole 2496 m - 2495 m
1730	19:00	1½	2	Drill 2496.6m - 2498 m ROTATE
19:00	20:00	1		[illegible] Clean Hole For Survey
20:00	20:15	¼	7	R/S. Function Break, Fastline & Sec. Clutch
20:15	22:00	1¾	2	Drill F/2495 to 2499.? m ROTATE
22:00	22:15	¼	10	Survey @ 2490
22:15	24:00	1¾	2	Drill F/2499.? m to 2501.?0 SLIDE

NOTES: [illegible] Saver, Fastline Clamp, Deadline Anchor, Brakes [illegible]
Boiler Blow down 3X

	8	550		5,000 daN	CONNECTIONS	

FOLD HERE →

158627

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Flare Lines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 02
RIG NO. 58

FUEL @ 8:0
RIG 1.23 BOILER

WEATHER: TEMPERATURE — ; CURRENT CONDITIONS 5[illegible]; WIND DIRECTION [illegible]; ROAD 31[illegible]

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest Et Al North Ward C31

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita Drilling LTD

SURFACE LOCATION: 300-C31-[illegible]-1330-0

UNIQUE ID.: 300-C31-8040-1330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME (HRS)

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.		5 1/4					1/2			1/4											
DAY		7 1/4					1/2														
EVE.		7 1/4								1/4											
TOTAL		20 3/4					3/4			1/2											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.	SIZE	OD	LENGTH
1	BIT		.25 m
1	MOTOR	160	6.17 m
1	FLOAT SUB / TEST SUB	163 / 166	.75 .75 m
1	MUD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
		BHA:	318.52 m
76	D.P.	STANDS	— m
X	D.P.	SINGLES	2161.31 m
	KELLY DOWN		4.9 — m
	TOTAL		2473.60 m
WT. OF DC		19000	daN
WT. OF STRING		86000	daN

BIT RECORD

BIT NO.	17m
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3x12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	37[illegible]
TOTAL HOURS RUN	42 3/4

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG: 10000 daN slide 4000 daN Rotate
TORQUE AT BOTTOM: 7000-9000 Ft-lb
FILL ON BOTTOM (m): —

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	00:30	05:30	06:30
DENSITY kg/m³	1665	1665	1660
FUNNEL VIS. - (S/L)	88	[illegible]	84
W.L. (cm³)	6.5	6.5	6.2
pH	11.0	11.0	10.5
Pt.T.3	88.5	8[illegible]	[illegible]5.6

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Pol S. [illegible]	28 sx
Sod. Sulfite	1 sk
Cc[illegible]	1 pl
Biocide	1 pl

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	SRO. REM. CORE-C	ROTARY R.P.M.
2468	2473.60	5	30+ MTR

PUMP: 11900 | LINER SIZE (mm) 152 | S.P.M. 85 | LINER SIZE 15[illegible]

6800 | 50

DEPTH (m)	DEVIATION (°)	DIR.
2457.28	17.3	283

Gas/Return [illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.	SIZE	OD	LENGTH
1			.25 m
1	MOTOR	160	6.17 m
1	FLOAT SUB / TEST SUB	163 / 166	.75 .75 m
1	MUD DC	157	9.26 m
1	Ext SUB	164	1.98 m
2	NM flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.51 m
		BHA	318.52 m
75	D.P.	STANDS	m
XX	D.P.	SINGLES	2171.[illegible] m
	KELLY DOWN		9.41 m
	TOTAL		2480 m
WT. OF DC		19000	daN
WT. OF STRING		[illegible]	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3x12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	44
TOTAL HOURS RUN	50 1/4

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG: 10000 daN slide 4000 daN Rotate
TORQUE AT BOTTOM: [illegible]
FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	08:00	10:30	13:30
DENSITY kg/m³	1650	1650	1655
FUNNEL VIS. - (S/L)	83	78	80
W.L. (cm³)	7.0	7.2	6.2
pH	10.5	10.0	10.5
P.V.T.m	86.8	87.2	90.3

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Corrosion	1 PL
Sod. Sulfite	1 SX
BARITE	157 sxs
Xcenite	3 sxs
Caustic	1 sx
Pol. Sulf.	28 sx

SOLIDS CONTROL: HOURS RUN 0 | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³); HOURS RUN 0

CENTRIFUGE

METRES DRILLED

FROM	TO	SRO. REM. CORE-C	ROTARY R.P.M.
2473	2480	7	30 MTR

PUMP: 12,000 | LINER SIZE (mm) 152 | S.P.M. 85 | LINER SIZE 15[illegible]

7000 | 50

DEPTH (m) | DEVIATION (°) | DIR.

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.	SIZE	OD	LENGTH
1			.25 m
1	MOTOR	160	6.17 m
1	FLOAT SUB / TEST SUB	163 / 166	.75 .75 m
1	MUD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.51 m
		BHA	318.52 m
7[illegible]	D.P.	STANDS	m
[illegible]	D.P.	SINGLES	2170.59 m
	KELLY DOWN		4.4 m
	TOTAL		248[illegible] m
WT. OF DC		19000	daN
WT. OF STRING		86000	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3x12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	49
TOTAL HOURS RUN	57 1/2

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG: 10000 daN Slide 4000 daN Rotate
TORQUE AT BOTTOM: 7000-7500 Ft-lb
FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	16:00	20:00	22:00
DENSITY kg/m³	1650	1650	1650
FUNNEL VIS. - (S/L)	86	110	82
W.L. (cm³)	6.5	6.6	6.8
pH	11.0	11.0	11.0
P.V.	89.7	90.4	91.1

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	52 sx

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

CENTRIFUGE

METRES DRILLED

FROM	TO	SRO. REM. CORE-C	ROTARY R.P.M.
2480	2485	5	30 MTR 95

PUMP: 11900 | LINER SIZE (mm) 152 | S.P.M. | LINER SIZE

DEPTH (m)	DEVIATION (°)	DIR.
2466.8	18.7	27[illegible]

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
		15

RIG NO. 5?

FUEL @ 8:00

RIG 1.23 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	217	79.6	STEC	HCL	189	2632.57	5.70	2629.5

WEATHER

TEMPERATURE -6 °C

CURRENT CONDITIONS Snow

WIND DIRECTION [illegible]

ROAD [illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	169	4½ IF	31	F-1000	EMSCO	254
127	33.07	E3	101	162	↓	135	F-1000	EMSCO	254
127	29.02	E3	108	168		150	F-800	EMSCO	228.6

20	21	22	23	24	25	26	TOTALS
SAFETY MTG.							8
							8
							8
							24

SHALE SHAKER(S)

NO./TYPE 2 Derrick F.L.C.

SCREENS CHANGED ☐ YES ☐ NO

TOP	TOP
MIDDLE	MIDDLE
BOTTOM	BOTTOM

RENTALS-SERVICES

TMJ- 544?

AmJ- 1552

Accumoil-.36

MORNING TOUR

RECORD

03.30	06.30
1665	1660
85	89
6.5	6.2
11.0	10.5
85.5	85.6

METRES DRILLED

FROM	TO	BRD-RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2468	2473.60	5	30 T MTR	15
			MTR 85	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152	85	152	-

REDUCED PUMP SPEED

6800 @ 50 @ 468

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2457.28	17.3	283.1

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

DRILLER'S SIGNATURE

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS
0000	0115	1¼	2	Drill F/2468.60 m - 2469.49 m Slide
0115	0300	1¾	3	Ream & clean hole F/2448 - 2469 m before connection
0300	0330	½	7	R/S. Funct on Bottom Pipe Rams. Gs... √RSPP
0330	0530	2	2	Drill F/2469.49 m - 2471.29 m Rotate
0530	0545	¼	10	Survey @ 2457.28
0545	08:00	2¼	2	Drill F/2471.29 m - 2473.60 Slide

NOTES √Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boiler Blown down 3X

BOILER HRS.	BOILER kPa	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD		
8	105	350°C	115000 daN	Connections	0

DAY TOUR

RECORD

10:30	13:30
1650	1655
78	80
7.2	6.2
10.0	10.5
87.2	90.3

METRES DRILLED

FROM	TO	BRD-RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2473	2480	7	[illegible]	14
			[illegible]	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12,000	152	85	152	

REDUCED PUMP SPEED

7000 @ 52 @ 470

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

DRILLER'S SIGNATURE

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS
08:00	13:00	5	2	Drill F/2473.60 - 2475.60 m Slide
13:00	14:15	1¼	2	Drill F/2475.60 - 2477 m Rotate
14:15	14:30	¼	7	R/S. Function Annular, 18 sec close, √RSPP
14:30	15:00	½	3	Ream & clean hole F/2470 m - 2477 m
15:00	16:00	1	2	Drill 2477 m - 2480 Rotate

NOTES √ Fastline Clamp Deadline Anchor, Brakes & Linkage.
Boiler Blown Down 3X Lowdown Saver.

BOILER HRS.	BOILER kPa	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD		
8	105	350°C	100,000	Steam Matting	0

EVENING TOUR

RECORD

20:00	22:00
1650	1650
110	82
6.6	6.8
11.0	11.0
90.4	91.1

METRES DRILLED

FROM	TO	BRD-RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2480	2485	5	30	14
			85	24

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	[illegible]	[illegible]	[illegible]	66

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2466.2	17.7	277.9

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY

DRILLER'S SIGNATURE

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS
1600	1700	1	2	Drill 2480 m - 2480.83 m Rotate
1700	1715	¼	10	Survey
1715	24:00	6¾	2	Drill 2480.8 m - 2485.40 Slide

NOTES √Crown Saver Fastline Clamp Deadline Anchor &
Boiler Blown Down 3X

BOILER HRS.	BOILER kPa	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD		
8	105	350	115000 daN		0

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158626

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)	Initial	
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)	Initial	
(3) Mast Inspection Before Raising or Lowering	Initial	
(4) Crown Saver Checked	Initial	
(5) Motor Kills checked	Initial	

YEAR 2001 MONTH 02

RIG NO. 58

FUEL @ 8:

RIG 1.58 BOILER

WEATHER: TEMPERATURE — ; CURRENT CONDITIONS ; WIND DIRECTION ; ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest etal North Liard C31

OPERATOR: Canadian Forest Oil

CONTRACTOR: Akita Drilling LTD

SURFACE LOCATION: 300-C31-6040-12330-0

UNIQUE ID.: 300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.
MORN.		4 1/2 2 3/4			1/4		1/4			1/4											
DAY		7 3/4								1/4											
EVE.		7 1/2					1/4			1/4											
TOTAL		19 3/4 2 3/4			1/4		1/2			3/4											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

			.25m
1	Motor	160	6.17m
1	Float Sub / Res Sub	163 / 166	.75 .75m
1	MWD DC	157	9.26m
1	EXT Sub	164	1.98m
2	NM Flex	163	18.38m
1	X/O	164	.48m
7	HWDP	127	64.56m
1	Jar	174	5.43m
23	HWDP	127	210.51m
		BHA=	318.52m
74	D.P.	STANDS	m
XX	D.P.	SINGLES	2143.08m
		KELLYDOWN	-5.96
		TOTAL	2454.70
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3X12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	18
TOTAL HOURS RUN	22 1/2
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	10000 daN Slide, 4000 daN Rotate
TORQUE AT BOTTOM	8000-10000 FT/LB
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	00:00	03:00
DENSITY kg/m3	1665	1665
FUNNEL VIS. - (S/L)	92	93
W.L. (cm3)	5.5	6.0
pH	11.0	11.0
PVT m3	83.0	83.7

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m3)	OVERFLOW DENSITY (kg/m3)	UNDERFLOW DENSITY (kg/m3)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2450	2454	4	30+ MTR

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11900	152	—	15
6800			

DEPTH (m)	DEVIATION (°)	
2439.14	14.8	28

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25m
1	Motor	160	6.17m
1	Float Sub / Res Sub	163 / 166	.75 .75m
1	MWD DC	157	9.26m
1	Ext Sub	164	1.98m
2	NM Flex	163	18.38m
1	X/O	164	.48m
7	HWDP	127	64.56m
1	JAR	174	5.43m
23	HWDP	127	210.51m
		BHA	318.52
75	D.P.	STANDS	2151.73m
	D.P.	SINGLES	
		KELLYDOWN	9.25m
		TOTAL	2461.04
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3 X 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	25
TOTAL HOURS RUN	30 3/4
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	4/500 daN Rotate Slide
TORQUE AT BOTTOM	7-3000
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	08:00	14:00	16:00
DENSITY kg/m3	1670	1660	1655
FUNNEL VIS. - (S/L)	83	72	94
W.L. (cm3)	6.5	7.0	6.5
pH	10.5	10.5	10.5
PVT m3	85.2	86.4	88.7

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Gumex	1 PL
Sod Sulfite	1 SX
Pot Sulph	28 SX
Lignite	3 SX
DRISPAC	1 SX
STARPAK	1 SX
BARITE	126 SX

HOURS RUN	INTAKE DENSITY (kg/m3)	OVERFLOW DENSITY (kg/m3)	UNDERFLOW DENSITY (kg/m3)

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2454	2461	7	30+ MTR

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11600	152		15
6800			

DEPTH (m)	DEVIATION (°)	
2444.46	15.4	2

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25m
1	motor	160	6.17m
1	Float Sub / Res Sub	163 / 166	.75 .75m
1	MWD DC	157	9.26m
1	EXT Sub	164	1.98m
2	NM Flex	163	18.38m
1	X/O	164	.48m
7	HWDP	127	64.56m
1	Jar	174	5.43m
23	HWDP	127	210.51m
		BHA=	318.52m
75	D.P.	STANDS	2151.73m
—	D.P.	SINGLES	
		KELLYDOWN	2.12
		TOTAL	2468.63
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-503
SERIAL NO.	P55CF
JETS (mm)	3X12.7
DEPTH OUT (m)	—
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	32
TOTAL HOURS RUN	37 3/4
CUTTING STRUCTURE T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	10000 daN Slide 4000 daN Rotate
TORQUE AT BOTTOM	—
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	18:00	20:00	22:30
DENSITY kg/m3	1670	1670	1670
FUNNEL VIS. - (S/L)	94	94	88
W.L. (cm3)	6.7	6.3	6.5
pH	10.5	11.0	11.0
PVT m3	89.5	87.8	88.0

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m3)	OVERFLOW DENSITY (kg/m3)	UNDERFLOW DENSITY (kg/m3)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO		ROTARY R.P.M.
2461	2468	7	30+ MTR

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11600	152	—	15
6800			

DEPTH (m)	DEVIATION (°)
2449.61	15.9

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	02	14

RIG NO. 58

FUEL @ 8:00

RIG 133 BOILER

WEATHER	
TEMPERATURE	-10 °C
CURRENT CONDITIONS	Snow
WIND DIRECTION	NE
ROAD	Snow

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.61	BT&C	HCL	189	2632.87	5.70	2639.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	169	4 IF	31	F.1000	EMSCO	254
127	38.07	E3	101	162		135	F.1000	EMSCO	254
127	29.02	E3	108	156	↓	150	F.800	EMSCO	228.6

SAFETY MTG.							

TOTALS: 8 / 8 / 8 / 24

SHALE SHAKERS			REMARKS SERVICES
NO. 2 TYPE Derrick F.L.C.			TMJ-544462
SCREENS CHANGED YES NO	#1	#2	AmJ-6218
TOP	140	175	ACCUM OIL .36
MIDDLE	140	175	
BOTTOM	140	175	

MORNING TOUR

RECORD

03:00
1665
93
6.0
11.0
83.7

METRES DRILLED FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2450	2454	4	30 + MTR	15
			MTR: 95	23

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11900	152	–	152	85
6800	245			50

DEPTH (m)	DEVIATION (°)	DIRECTION
2439.14	14.8	287.5

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
Centrifuge			
0			

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0000	0245	2¾	3	Ream & Clean hole before connection 2435-2450m
0245	0300	¼	7	R/S Function Top Pipe Rams 6 sec ✓ RSP
0300	0345	¾	2	Drill F/2450m-2451m Rotate
0345	0400	¼	5	Cycle mud Check Gamma Readings F/2450-2451m
0400	0445	¾	2	Drill F/2451m-2452m Rotate
0445	0500	¼	10	Survey @ 2438.14m
0500	0800	3	2	Drill F/2452m-2454.70 Sliding

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage
Boiler Blown down 3X

Driller: [illegible] | 8 | 10.5 | 350°C | 110000 daN | 1st Work Surfaces | 0

DAY TOUR

RECORD

14:00	16:00
1660	1655
72	94
7.0	6.5
10.5	10.5
86.9	88.7

METRES DRILLED FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2454	2461	7	30 + MTR	14
			MTR 95	23

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11600	152		152	85
6400	458			50

DEPTH (m)	DEVIATION (°)	DIRECTION
2444	15.4	287.4

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
08:00	12:45	4¾	2	DRILL F/2454.70 TO 2458.6. SLIDE
12:45	13:00	¼	10	SURVEY @ 2444.
13:00	16:00	3	2	DRILL F/2458.6 TO 2461.40m. ROTATE

TRANSFERED 1.4 m³ of SEL - ACTIVE

NOTES CROWN SAVER. FASTLINE CLAMP - DEADLINE ANCHOR BRAKES & LINK
Boiler Blow down 3X - ENVIRONMENTAL MEETING -

8	R/S	350°C	100,000	WASTE MANAGEMENT	0

EVENING TOUR

RECORD

20:00	22:50
1670	1670
94	88
6.3	6.5
11.0	11.0
87.8	88.0

METRES DRILLED FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2461	2468	7	30 + MTR	15
			95	23-25

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11600	152	–	152	85
6800	246			50

DEPTH (m)	DEVIATION (°)	DIRECTION
2449.60	15.9	291.4

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
Centrifuge #2			
0			

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
16:00	16:15	¼	10	SURVEY @ 2449.60
16:15	2345	7½	2	DRILL F/2461.4 TO 2468.60m SLIDE
2345	2400	¼	7	R/S Function Remote Choke 21 sec ICIS

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage
Boiler Blown down 3X Held [illegible] meeting

DRILLER'S SIGNATURE: [illegible] | 8 | 10.5 | 350°C | 100000 daN | [illegible] | 0

158625

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LICENCE NO.	WELL NAME AND NO.
1900	Canadian Forest et al North Lamb C31

OPERATOR	CONTRACTOR
[illegible]	[illegible]

SURFACE LOCATION	UNIQUE ID
300-C31-[illegible]-0	300-C31-[illegible]-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]
SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [initialed]	Initial [initialed]
(2) Detailed Inspection-Weekly (using checklist)	Initial [initialed]	Initial [initialed]
(3) H2S Signs Posted (if required)	Initial [initialed]	Initial
(4) Well License & Stick Diagram Posted	Initial [initialed]	Initial [initialed]
(5) Flare Lines Staked	Initial [initialed]	Initial
(6) BOP Drills Performed	Initial [initialed]	Initial
(7) Visually inspect BOPs - Flarelines & Degasser Lines	Initial [initialed]	Initial
(1) Rig Site Health and Safety Meeting		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 03
RIG NO. 58

FUEL @ 8:00
RIG 1.87 BOILER

WEATHER
TEMPERATURE
CURRENT CONDITIONS
WIND DIRECTION
ROAD [illegible]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	[illegible]
MORN.		5	3																			
DAY		6	11				1/4			1/4												
EVE.		6 1/2	1/2		1																	
TOTAL		18	4 1/2		1		1/4			1/4												

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	[illegible]		.25 m
1	MOTOR	160	6.17 m
1	FLOAT SUB / RES SUB	163 / 166	.75 m
1	HWD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM FLEX	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.5 m
	BHA		318.52
74	D.P.	STANDS	2123.08 m
—	D.P.	SINGLES	— m
	KELLYDOWN-UP		— 1.80 m
	TOTAL		2439.80 m
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT S03
SERIAL NO	PSSCF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	—
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	3
TOTAL HOURS RUN	5

CUTTING STRUCTURE T	To	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr

HOLE DRAG 10000 [illegible] 5000 [illegible]
TORQUE AT BOTTOM 7-9000 [illegible] Drilling
PULL ON BOTTOM (m) 1 m

MUD RECORD

TIME	02:00	04:30	06:00
DENSITY kg/m³	1655	1685	1675
FUNNEL VIS. - (S/L)	83	77	77
W.L. (cm³)	6.5	7.5	6.0
pH	10.5	10.5	10.5
PVT m³	82.5	81.9	82.4

PRODUCT	AMOUNT X UNIT
Caustic	3 sx
Pot. Sulph.	28 sx
Sod. Sulfite	1 sx
Caustex	1 pl
Biocide	1 pl
Desco	1 sk
Sl. pak	1 sk
Lignite	1 sk

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRLD. CORED	ROTARY R.P.M.
2436	2439	3	MTR 95
2420	2436	16	30 + MTR

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11800	152	—	152

6400

DEPTH (m)	DEVIATION (°)	DIR

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MOTOR	160	6.17 m
1	FLOAT RES SUB	163 / 166	.75 m
1	HWD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM FLEX	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.5 m
	BHA		318.52
74	D.P.	STANDS	
X	D.P.	SINGLES	2132.64 m
	KELLYDOWN		— 7.16 m
	TOTAL		2444.0 m
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT-S03
SERIAL NO.	PSSCF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	11.5

CUTTING STRUCTURE T	To	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr

HOLE DRAG 10000 [illegible] 5000 Rotating
TORQUE AT BOTTOM 7-9000 [illegible]
PULL ON BOTTOM (m) 2 m.

MUD RECORD

TIME	08:00	14:00	16:00
DENSITY kg/m³	1695	1670	1670
FUNNEL VIS. - (S/L)	87	77	77
W.L. (cm³)	6.0	5.5	5.5
pH	10.5	10.5	10.5
P.V.T. m³	83.5	82.0	82.1

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Caustex	1 PL
Sod. Sulfite	1 sx
Pot. Sulph.	29 sxs
GEL	24 sxs
LIGNITE	2 sxs
Soda Ash	1 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
2	1230	1190	2130
CENTRIFUGE			
2	1685	1230	1780

METRES DRILLED

FROM	TO	DRLD. CORED	ROTARY R.P.M.
2439	2444	5	MTR 95
			+ 30

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11,500	152		152

6400

DEPTH (m)	DEVIATION (°)	DIR
2429.6	13.8	2[illegible]

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	MOTOR	160	6.17 m
1	FLOAT SUB / RES SUB	163 / 166	.75 m
1	HWD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM FLEX	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.5 m
	BHA =		318.52
74	D.P.	STANDS	
X	D.P.	SINGLES	2132.64 m
	KELLYDOWN		— .86 m
	TOTAL		2450.30 m
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT. S03
SERIAL NO.	PSSCF
JETS (mm)	3 x 12.7
DEPTH OUT (m)	—
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	14
TOTAL HOURS RUN	18

CUTTING STRUCTURE T	To	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr

HOLE DRAG 10000 [illegible] 5000 [illegible]
TORQUE AT BOTTOM 8000-10000 [illegible]
PULL ON BOTTOM (m) —

MUD RECORD

TIME	18:00	20:00	22:00
DENSITY kg/m³	1670	1665	1665
FUNNEL VIS. - (S/L)	76	84	88
W.L. (cm³)	5.5	6.0	5.5
pH	10.5	11.0	11.0
PVT m³	82.7	82.9	83.0

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge #A			
0			

METRES DRILLED

FROM	TO	DRLD. CORED	ROTARY R.P.M.
2444	2450	6	30 + [illegible] 95

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11600	152	—	152

6400

DEPTH (m)	DEVIATION (°)	DIR

[signature]

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DAILY CHECKS

Check	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	[illegible]	12

RIG NO. 58

FUEL @ 8:00

RIG 1.87 BOILER

WEATHER	
TEMPERATURE	-11 °C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	Good

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.61	ST/C	HCL	189	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	77	169	4½ F	31	F-1000	EMSCO	254
127	38.07	E2	101	162		135	F-1000	EMSCO	254
127	39.07	E2	108	156		150	F-800	EMSCO	228.6

SAFETY MTG. Safe Har

TOTALS	SHALE SHAKER(S)			
	NO. TYPE	Derrick	F.L.C.	
8	SCREENS CHANGED	☐ YES ☒ NO		
8	TOP	140	TOP	175
8	MIDDLE	140	MIDDLE	175
24	BOTTOM	140	BOTTOM	175

RENTALS SERVICES

TmJ-543965

AmJ-5721

Accum oiL-.36

MORNING TOUR

RECORD

04:30	06:00
1685	1675
79	77
7.8	6.0
10.5	10.5
81.9	82.4

METRES DRILLED

FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2436	2439	3	M+ 95	22-29
2420	2430	16	30+	1-6

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11800	152	—	152	85

6400 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0000	0300	3	3	Ream F/2420m - 2436m. [illegible]
0300	0800	5	2	Pattern BIT & Drill F/2436m - 2439.80m [illegible]

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor, Brakes & Linkage.
Boiler Blowdown 3X

Garry Patrick	8	10.3 350°C	120000 DAN	Tripping	0

DAY TOUR

RECORD

14:00	16:00
1670	1670
77	77
5.5	5.5
10.5	10.5
82.0	82.1

METRES DRILLED

FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2439	2444	5	M+ 95	29
			+30	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11500	152		152	85

6400 30

DEPTH (m)	DEVIATION (°)	DIRECTION
2429.6	12.8	238.4

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
2	1230	1190	2130

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
5	1685	1230	1780

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

08:00	09:00	1	2	Drill F/2439.80m. To 2440.60m Rotate
09:00	10:00	1	3	Work Clean Hole For Conn.
10:00	10:15	¼	7	R/Serv. ✓Function Annular 20SEC
10:15	13:00	2¾	2	Drill F/2440.6m To 2442.6m. Rotate.
13:00	13:15	¼	10	Survey @ 2423.60 ✓ pipe screen.
13:15	16:00	2¾	2	Drill F/2442.6m To. 2444m. SLIDE

TRANSFERED 1.4m³ of GEL - Active

NOTES ✓ Fastline Clamp, Deadline Anchor, Brakes & Linkage.
Boiler Blow down 3x GREASE Crown ✓ & Crown Saver.

[illegible]	8	10.3 350°	Top Drive Serv.	0

EVENING TOUR

RECORD

20:00	22:00
1665	1665
84	88
6.0	5.5
11.0	11.0
82.9	83.0

METRES DRILLED

FROM	TO		ROTARY R.P.M.	WT. ON BIT (1000 daN)
2444	2450	6	30+	15
			28	28

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11600	152	—	152	85

6400 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

Centrifuge #A

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

16:00	1900	3	2	Drill F/2444m To 2447m SLIDE.
19:00	2000	1	5	Bit Stalling. Work Pipe Attempt To Slide.
20 00	2030	½	2	Drill F/2447m - 2447.5m Rotate.
2030	2215	1¾	2	Drill F/2447.5m - 2449m Slide.
2215	2330	1¼	2	Drill F/2449m - 2450m Rotate.
2330	2400	½	3	Ream & Clean hole before Connection.

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boiler Blowdown X 3. Function Remote Choke.

DRILLER SIGNATURE

Garry Patrick	8	10.5 350°C	100000 DAN	[illegible]	0

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158624

LICENCE NO.: 1900	WELL NAME AND NO.: Canadian Forest etal North Liard C31	
OPERATOR: Canadian Forest Oil	CONTRACTOR: Akita Drilling Ltd	
SURFACE LOCATION: 300-C31-60-10-123-30-0	UNIQUE ID.: 300-C31-60-10-123-30-0	
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: Dave Fauck	

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial ✓ — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial ✓ — Initial
(3) H2S Signs Posted (if required) — Initial ✓ — Initial
(4) Well License & Stick Diagram Posted — Initial ✓ — Initial
(5) Flare Lines Staked — Initial ✓ — Initial
(6) BOP Drills Performed — Initial ✓ — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial ✓ — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR: 2001 MONTH: 02
RIG NO.: 58
FUEL: RIG .89
WEATHER: TEMPERATURE — CURRENT CONDITIONS — WIND DIRECTION — ROAD Good

TIME - HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Handle Tools
MORN.		5¼			1½	½	¼	½														
DAY						5½	¼	1¾														½
EVE.			1			5¼																1¾
TOTAL		5¼	1		1½	11¼	½	2¼														2¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor	160	6.64 m
	Float Sub / Res Sub	163 / 166	.75 / .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.39 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
		BHA =	318.99
79	D.P.	STANDS	2123.06 m
—	D.P.	SINGLES	— m
	KELLYDOWN UP		−5.52 m
	TOTAL		2436.55 m
WT. OF DC	19000 daN		
WT. OF STRING	85000 daN		

BIT RECORD

BIT NO.	16M	
SIZE (mm)	215.9	
IADC CODE	4 4 7	
MFG.	HUGHES	
TYPE	GT-S18	
SERIAL NO.	R17DL	
JETS (mm)	3x14.3	
DEPTH OUT (m)	2436	
DEPTH IN (m)	2400	
TOTAL METRES DRILLED (m)	36	
TOTAL HOURS RUN	69½	
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	PR .52	
HOLE DRAG	10000 daN slide 4000 daN rotate	
TORQUE AT BOTTOM	7000-8500 ft lbs	
FILL ON BOTTOM (m)	—	

MUD RECORD

TIME	02:00	04:00
DENSITY kg/m³	1670	1665
FUNNEL VIS. - (S/L)	81	76
W.L. (cm³)	6.5	6.8
pH	11.0	11.0
PVT m3	89.4	89.2

PRODUCT	AMOUNT X UNIT
Barite	84 sx
Canmax	1 pl
Biocide	1 pl
Sod Sulfite	15 k
[illegible]	10 t
Caustic	2 sx
Lignite	1 sx

HOURS RUN: 0 — Centrifuge #2 — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRID. RIM. CORE-C	ROTARY R.P.M.
2434	2436	2	95

10700 — LINER SIZE (mm) 152 — S.P.M. — — 152
6200 — 43

DEPTH (m) — DEVIATION (°)

Gary Fitzgerald

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor	160	6.64
1	Float Sub / Res Sub	163 / 166	.75 / .75
1	MWD DC	157	9.26
1	Ext Sub	164	1.98
2	NM Flex	163	18.39
1	X/O	164	.48
7	HWDP	127	64.56
1	Jar	174	5.43
23	HWDP	127	210.51
		BHA	318.99
	DP	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		
	TOTAL		
WT. OF DC	19000 daN		
WT. OF STRING	daN		

BIT RECORD

BIT NO.	16M	17M
SIZE (mm)	215.9	215.9
IADC CODE	4 4 7	4 1 7
MFG.	HUGHES	HUGHES
TYPE	GT S-18	GT S03
SERIAL NO.	R17DL	P55CF
JETS (mm)	3x14.3	3x12.7
DEPTH OUT (m)	2436	
DEPTH IN (m)	2400	2436
TOTAL METRES DRILLED (m)	36	
TOTAL HOURS RUN	69½	
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	2 2 CT H F I WO PR .5	
HOLE DRAG		
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)		

MUD RECORD

TIME — DENSITY kg/m³ — FUNNEL VIS. - (S/L) — W.L. (cm³) — pH

PRODUCT	AMOUNT X UNIT

METRES DRILLED

FROM	TO	DRID. RIM. CORE-C	ROTARY R.P.M.
2436			

DEPTH (m) — DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

			.25 m
1	Motor	160	6.64
	Float Sub / Res Sub	163 / 166	.75 / .75
1	MWD DC	157	9.26
1	Ext Sub	164	1.98
2	NM Flex	163	18.39
1	X/O	164	.48
7	HWDP	127	64.56
1	Jar	174	5.43
23	HWDP	127	210.51
		BHA:	319.5[illegible]
74	D.P.	STANDS	2123.09 m
—	D.P.	SINGLES	— m
	KELLYDOWN UP		5.05 m
	TOTAL		2436.55 m
WT. OF DC	19000 daN		
WT. OF STRING	85000 daN		

BIT RECORD

BIT NO.	17M
SIZE (mm)	215.9
IADC CODE	4 1 7
MFG.	HUGHES
TYPE	GT S03
SERIAL NO.	P55CF
JETS (mm)	3x12.7
DEPTH OUT (m)	—
DEPTH IN (m)	2436
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	0

MUD RECORD

TIME — DENSITY kg/m³ — FUNNEL VIS. - (S/L) — W.L. (cm³) — pH — PVT m3

PRODUCT	AMOUNT X UNIT

HOURS RUN: 0 — Centrifuge #2 — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRID. RIM. CORE-C	ROTARY R.P.M.
2436			
2420	2436	16	30

LINER SIZE (mm) 152 — S.P.M. — LINER SIZE 152

DEPTH (m) — DEVIATION (°)

Gary Fitzgerald

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial ✓	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial ✓	Initial
(3) H2S Signs Posted (if required)	Initial ✓	Initial
(4) Well License & Stick Diagram Posted	Initial ✓	Initial
(5) Flare Lines Staked	Initial ✓	Initial
(6) BOP Drills Performed	Initial ✓	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial ✓	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2001 MONTH 02 DAY 12

RIG NO. 58

FUEL @ 8:00 — RIG .89 — BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	226.7	77.4	BTSC	HCL	187	2638.47	5.70	2644.5

WEATHER: TEMPERATURE −6 °C; CURRENT CONDITIONS Good; WIND DIRECTION S; ROAD Good

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	77	169	4 IF	31	F-1000	Emsco	254
127	38.07	E3	101	162	↓	135	F-1000	Emsco	254
127	29.09	E3	108	156	↓	150	F-800	Emsco	228.6

	SAFETY MTG	TOTALS	SHALE SHAKER(S)		RENTALS/SERVICES
	Handling Tools		NO. 2 TYPE Derrick Flo		TmJ-542668
		8	SCREENS CHANGED ☐ YES ☒ NO		AmJ-5424
	1/2	8	TOP 140	TOP 175	Accumulator-36
	13/4	8	MIDDLE 140	MIDDLE 175	
	2 3/4	24	BOTTOM 140	BOTTOM 175	

MORNING TOUR

RECORD: 09:00; 1665; 76; 6.8; 110; 89.2

FROM	TO	DRILLED/CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2434	2436	2	95	4-27

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10700	152	—	152	85
6400		135		50

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge #2			
0			

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0000	0315	3¼	2	Drill F/2434.60m - 2435.95m Slide
0315	0330	¼	7	R/S Function Remote Choke 21 secs √ P.P. Screen
0330	0530	2	2	Drill F/2435.95m - 2436.55m Slide
0530	0630	1	5	Circulate & clean hole, Catch bottom hole sample
0630	07:00	½	6	Pump out of hole F/2436m - 2301m
0700	07:30	½	5	~~Flow check Pull out Drill pipe~~ [illegible]
0730	08:00	½	[illegible]	[illegible]

NOTES √ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage. Boiler Blown down 3X √ Flare igniter

Garry Pstrovik | 8 | 105 | 350°C | 105000 daN | H2S Drills | 0

DAY TOUR

FROM	TO	DRILLED/CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2436				

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
08:00	9:45	1¾	8	Repair Drawworks Chain
09:45	10:00	¼	7	Rig Serv. Function Pipe Rams, SSFC
10:00	15:30	5½	6	P.O.O.H. Flowcheck 35 std, EAP, out of hole
15:30	16:00	½	22	Pull MWD Tool, Break Bit, Lay out Motor

TRIP RECORD MEASURED 13.55
CAL 12.10
DIFF + 1.45

NOTES FASTLINE CLAMP DEADLINE ANCHOR, BRAKES & LINKAGE √ CROWN SAVER.

[illegible] | 8 | 105 | 350° | 95,000 | TRIPPING | 0

EVENING TOUR

RECORD

FROM	TO	DRILLED/CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2436				
2420	2436	16	[illegible]	[illegible]

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge #2			
0			

TIME LOG FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
16:00	16:45	¾	22	Pick up New Motor & Surface Test.
16:45	17:45	1	22	Make up Bit #17, Install MWD, RIH To [illegible]
17:45	2300	5¼	6	R.I.H. Fill Pipe & √ MWD every 500m
23:00	2400	1	3	Wash F/2412m - 2420m Ream F/2420 - 2436m.

NOTES √ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage Boiler Blowdown 3X

Garry Pstrovik | 8 | 105 | 350°C | 110000 daN | Tripping | 0

FOLD HERE →

158623

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest etal North Liard C31
OPERATOR:	CONTRACTOR:
[illegible]	[illegible]
SURFACE LOCATION:	UNIQUE ID.:
300-C31-6040-12330-0	300-C31-6040-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	Dave [illegible]

DAILY CHECKS (OPR. / R.M.)

Check	OPR. Initial	R.M. Initial
(1) Daily Walk Around Inspection	[initials]	[initials]
(2) Detailed Inspection-Weekly (using checklist)	[initials]	[initials]
(3) H2S Signs Posted (if required)	[initials]	[initials]
(4) Well License & Stack Diagram Posted	[initials]	
(5) Flare Lines Staked	[initials]	[initials]
(6) BOP Drills Performed	[initials]	[initials]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	[initials]	[initials]
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A.O.D.C. Regularly Inspection Checklist (one/month)		
(3) Mast Inspection Before Raising or Lowering		[initials]
(4) Crown Saver Checked		
(5) Motor Kills checked		

YEAR	MONTH
2001	02

RIG NO. 58

FUEL 8

RIG 1.24

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	Clean Screen
MORN.		7¾																				¼
DAY		8																				
EVE.		7½				¼				¼												
TOTAL		23¾				¼				¼												¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1			.25 m
1	Motor	160	6.64 m
1	Float Sub Res Sub	163/166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
			BHA = 318.99 m
73	D.P.	STANDS	— m
XX	D.P.	SINGLES	2113.40 m
	KELLYDOWN		- 5.39 m
	TOTAL		2427.00 m
WT. OF DC		19000	daN
WT. OF STRING		85000	daN

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	HUGHES
TYPE	GT S18
SERIAL NO.	R17DL
JETS (mm)	3x14.3
DEPTH OUT (m)	—
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	27
TOTAL HOURS RUN	48¾
CUTTING STRUCTURE (T_1, T_2, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.)	
HOLE DRAG	10000 N slide
TORQUE AT BOTTOM	—
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	02:00	04:30	06:30
DENSITY kg/m³	1665	1665	1660
FUNNEL VIS. - (S/L)	97	95	97
W.L. (cm³)	7.0	7.0	7.2
pH	10.5	10.5	10.5
Pvt m³	89.5	90.1	90.1

PRODUCT	AMOUNT X UNIT
Barite	136 sx
Lignite	4 sx
Sod. Sulfite	1 sk.
[illegible]	1 pl
Caustic	1 pl
[illegible]	1 pl
[illegible]	2 sx
Drilzer	2 sx

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRLG/RMG/CORE-C	ROTARY R.P.M.
2424	2427	3	MTR 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE
10900	152	—	152
6200			42

DEPTH (m)	DEVIATION (°)

Barry [illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1			.25 m
1	Motor	160	6.64 m
1	Float Sub Res Sub	163/166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
	BHA		318.99
73	D.P.	STANDS	m
XX	D.P.	SINGLES	2113.40
	KELLYDOWN		2.39
	TOTAL		2430.00
WT. OF DC		19,000	daN
WT. OF STRING		85 000	daN

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	HUGHES
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3x14.3
DEPTH OUT (m)	
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	30
TOTAL HOURS RUN	56¾
CUTTING STRUCTURE (T_1, T_2, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.)	
HOLE DRAG	10,000 + SLIDE
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00	14:00	16:00
DENSITY kg/m³	1660	1650	1655
FUNNEL VIS. - (S/L)	89	80	77
W.L. (cm³)	6.5	6.3	6.4
pH	10.5	10.0	10.0
Pvt m³	90.1	86.0	87.1

PRODUCT	AMOUNT X UNIT
Barite	126 sxs
Lignite	2 sxs
Caustic	1 PL
Sod. Sulfite	1 sx
Pard 728	1 sx
Caustic	1 sx

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
4	1655	1650	2100
Centrifuge			
2	1655	1050	1980

METRES DRILLED

FROM	TO	DRLG/RMG/CORE-C	ROTARY R.P.M.
2427	2430	3	MTR 45

	LINER SIZE (mm)	S.P.M.	LINER SIZE
10900	152		152

DEPTH (m)	DEVIATION (°)	DIR.

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1			.25 m
1	Motor	160	6.64 m
1	Float Sub Res Sub	163/166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
	BHA =		318.99 m
74	D.P.	STANDS	2123.08 m
	D.P.	SINGLES	— m
	KELLYDOWN		- 7.47 m
	TOTAL		2434.60 m
WT. OF DC		19 000	daN
WT. OF STRING		85 000	daN

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	HUGHES
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3x14.3
DEPTH OUT (m)	—
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	34
TOTAL HOURS RUN	64¼
CUTTING STRUCTURE (T_1, T_2, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.)	
HOLE DRAG	10000 N Slide 4000 N Rot
TORQUE AT BOTTOM	7000-8000 ft-lb
FILL ON BOTTOM (m)	

MUD RECORD

TIME	20:00	22:30	24:00
DENSITY kg/m³	1675	1665	1665
FUNNEL VIS. - (S/L)	84	82	78
W.L. (cm³)	6.5	6.5	6.5
pH	10.5	10.5	10.5
Pvt m³	88.1	89.1	89.4

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRLG/RMG/CORE-C	ROTARY R.P.M.
2430	2434	4	MTR 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE
10100	152	—	152
6200			45

DEPTH (m)	DEVIATION (°)	DIRECTION
2419.43	13.3	283

[signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	02	11

RIG NO 1?

FUEL @ 8:00

RIG 1.24 BOILER

LAST CASING TUBING OR LINER	O D (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	21..7	??.?	BT&C	HCL	139	2632.87	5.70	2639.5

WEATHER	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	77	169	4½ IF	31	F 1000	Emsco	254
127	38.07	E3	101	162	↓	135	F 1000	Emsco	254
127	29.02	E3	108	156	↓	150	F 900	Emsco	228.6

SAFETY MTG.	Clean Screen					TOTALS
	¼					8
						8
						8
	¼					24

SHALE SHAKER(S)			
NO. 2	TYPE Derrick	F.L.C	
SCREENS CHANGED	YES ✗ NO		
TOP	140	TOP	175
MIDDLE	140	MIDDLE	175
BOTTOM	140	BOTTOM	175

RENTALS SERVICES
TmJ-541624
AmJ-3380
Accum. ch.-.36

MORNING TOUR

RECORD

04:30	06:30
1665	1660
95	97
7.0	7.2
10.5	10.5
90.1	90.1

METRES DRILLED FROM	TO	DRLD. REAM CORE.C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2424	2427	3	MTR 95	26-28

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152	—	152	85

6200	42	50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0315	3¼	2	Drill F/2424m-2425.40m Slide.
0315	0330	¼	22	Clean Pit Screen
0330	0800	4½	2	Drill F/2425.40m-2427m SLIDE

NOTES √ Crown Saver, Fastline Clamp, Deadline Anchor, Brakes & Linkage. Boiler Blowdown 3X, Held environmental meeting.

[illegible signature]	8	10.5 350°C	100000 daN	T.D.G.	0

DAY TOUR

RECORD

14:00	16:00
1650	1655
80	77
6.3	6.4
10.0	10.0
86.0	87.1

METRES DRILLED FROM	TO	DRLD. REAM CORE.C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2427	2430	3	45	28 SLIDE

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152		152	85

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
4	1655	1050	2100

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
2	1655	1050	1198

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	16:00	8	2	Drill F/2427m TO 2430m SLIDE

TRANSFERED 6m³ of Active Mud - WADECO
TRANSFERED 1.5m³ OF GEL - ACTIVE
HELD H2S SAFETY MEETING
- HELD B.O.P. DRILL. -

NOTES FASTLINE Clamp, DEADLINE ANCHOR, BRAKE & LINKAGE. Blowdown Boiler 3X [illegible]

[illegible signature]	8	10.4 350°	60,000.	H2S DRILL	0

EVENING TOUR

RECORD

22:30	24:00
1665	1665
82	78
6.5	6.5
10.5	10.5
89.1	89.4

METRES DRILLED FROM	TO	DRLD. REAM CORE.C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2430	2434	4	50 + mtr	15
			45	26-28

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10100	152	—	152	85

6200	45	50

DEPTH (m)	DEVIATION (°)	DIRECTION
2419.43	13.3	283.3

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	17:45	1¾	2	DRILL F/2430M TO 2431.50 SLIDE
17:45	18:00	¼	7	RIG SERV, FUNCTION Top Pipe Rams. TSE
18:00	21:45	3¾	2	DRILL F/2431.50m To 2433.55m ROTATE
21:45	22:00	¼	10	Survey @ 2419.43m
22:00	24:00	2	2	Drill F/2433.55m-2434.60m Sliding

NOTES √ Crown Saver, Fastline Clamp, Deadline Anchor, Brakes + Linkage. Boiler Blowdown 3X

[illegible signature]	8	10.5 350°C	75000 daN	H2S Drills	0

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158622

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al North Hiord C31

OPERATOR	CONTRACTOR
Canad...	Akita ...

SURFACE LOCATION	UNIQUE ID
300-C31-...	300-C31-...

SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
[illegible signature]	[illegible signature]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial
(3) H2S Signs Posted (if required) — Initial
(4) Well License & Stick Diagram Posted — Initial
(5) Flare Lines Staked — Initial
(6) BOP Drills Performed — Initial
(7) Visually inspect BOP's, Flarelines & Degasser Lines — Initial

(1) Rig Site Health and Safety Meeting (once/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR / MONTH: ... 02
RIG NO: 58
FUEL
RIG: 1,55

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME - HRS

	OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG
	MORN		7			1/2		1/4			1/4											
	DAY		8																			
	EVE		7 3/4					1/2			1/4											
	TOTAL		22 3/4			1/2		3/4			1/2											

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Rest Sub	163 / 166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	Non Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
		BHA:	318.99 m
73	D.P.	STANDS	m
X	D.P.	SINGLES	2104.00 m
	KELLYDOWN		- 6.99 m
	TOTAL		2416.30 m
WT. OF DC	19000		
WT. OF STRING	84000		

BIT RECORD

BIT NO	16 m
SIZE (mm)	215.9
IADC CODE	4 4 7
MFG.	HUGHES
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3 X 14.3
DEPTH OUT (m)	—
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	16
TOTAL HOURS RUN	25 3/4

CUTTING STRUCTURE: T / T2 / MOC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: 10000 N Slk 4000 Tie Rot...
TORQUE AT BOTTOM: 8-9000 Ft/lb
FILL ON BOTTOM (m): —

MUD RECORD

TIME	02:30	04:30	06:30
DENSITY kg/m³	1655	1655	1655
FUNNEL VIS. - (S/L)	89	86	83
W.L. (cm³)	7.4	7.0	6.8
pH	11.0	11.0	11.0
PVT m³	88.7	89.7	91.6

PRODUCT	AMOUNT X UNIT
Barite	210 sx
Lignite	5 sx
Pot Sulph	56 sx
Staplex	1 sk
Drispac	1 sk
Sod. Bicarb	1 BK
...	1 pl
Alkamul 1201	3 pl
Biocide	1 pl

HOURS RUN: 0 / CENTRIFUGE / HOURS RUN: 0

METRES DRILLED

FROM	TO	HRS CORE	ROTARY R.P.M.
2412	2416	4	30 + Mtr / 95

PUMP PRESS	LINER SIZE (mm)	S.P.M.	LINER SIZE
10700	152	85	152

6000 / 50

DEPTH (m)	DEVIATION (°)	D
2400	13.4	27...

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Rest Sub	163 / 166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
23	HWDP	127	210.51 m
		BHA:	318.99 m
73	D.P.	STANDS	
X	D.P.	SINGLES	2104.00
	KELLYDOWN		3.19 m
	TOTAL		2419.80 m
WT. OF DC	19000		
WT. OF STRING	84000		

BIT RECORD

BIT NO	16 m
SIZE (mm)	215.9
IADC CODE	4 4 7
MFG.	HUGHES
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3 X 14.3
DEPTH OUT (m)	—
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	19
TOTAL HOURS RUN	33 3/4

CUTTING STRUCTURE: T / T2 / MOC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: 9000 ... Rotate / ... 7000
TORQUE AT BOTTOM: 8-9000 Ft/lb.
FILL ON BOTTOM (m):

MUD RECORD

TIME	08:00	14:00	16:00
DENSITY kg/m³	1650	1650	1655
FUNNEL VIS. - (S/L)	80	74	88
W.L. (cm³)	7.0	7.5	7.0
pH	10.5	10.5	10.5
P.V.T. m³	91.6	86.4	87.8

PRODUCT	AMOUNT X UNIT
Bacol 725	1 sx
BARITE	252 sxs
LIGNITE	75 sxs
Sod. Sulph	1 sx
Alkamul 1201	3 PLS
Cellex	1 PL
Biocide	1 PL
STARPAK	1 sx

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
4	1650	1650	2160

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
1	1650	1050	1990

METRES DRILLED

FROM	TO	HRS CORE	ROTARY R.P.M.
2416	2419	3	30 / 95

PUMP PRESS	LINER SIZE (mm)	S.P.M.	LINER SIZE
10800	152	86	15...

6000 / 50

DEPTH (m)	DEVIATION (°)	DIR

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Rest Sub	163 / 166	.75 .75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	Non Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
		BHA:	318.99 m
73	D.P.	STANDS	—
XX	D.P.	SINGLES	2113.40
	KELLYDOWN		- 8.39
	TOTAL		2424.00
WT. OF DC	19000		
WT. OF STRING	85000		

BIT RECORD

BIT NO	16 M
SIZE (mm)	215.9
IADC CODE	4 4 7
MFG.	HUGHES
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3 X 14.3
DEPTH OUT	—
DEPTH IN	2400
TOTAL METRES DRILLED	24
TOTAL HOURS RUN	41

CUTTING STRUCTURE: T / T2 / MOC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr

HOLE DRAG: 10000 N Slk 7000 Tie Rotate
TORQUE AT BOTTOM: 7-8000 Ft/lbs
FILL ON BOTTOM (m): —

MUD RECORD

TIME	18:00	20:30	24:00
DENSITY kg/m³	1655	1665	1665
FUNNEL VIS. - (S/L)	80	78	93
W.L. (cm³)	~~7.0~~ 7.0	6.2	7.0
pH	10.5	11.0	10.5
P.V.T. m³	89.5	90.0	92.4

PRODUCT	AMOUNT X UNIT
DRISPAC	1 sx

HOURS RUN: 0 / CENTRIFUGE / HOURS RUN: 0

METRES DRILLED

FROM	TO	HRS CORE	ROTARY R.P.M.
2419	2424	5	30 + Mtr / 95

PUMP PRESS	LINER SIZE (mm)	S.P.M.	LINER SIZE
10900	152	—	15...

6000 / 50

DEPTH (m)	DEVIATION (°)	DIR
2409.99	12.7	27...

[illegible signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
[illegible]	[illegible]	10

RIG NO 58

FUEL @ 8:00 — RIG 1.55 — BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	73.6	[illegible]	HCL	159	[illegible].57	3.70	[illegible]9.5

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	77	163	4½IF	31	F-1000	EMSCO	254
127	38.07	E3	101	162	↓	135	F-1000	EMSCO	254
127	24.02	E2	108	156		150	F800	EMSCO	228.6

TOTALS: 8, 8, 8, 24

SHALE SHAKER(S)		RENTALS SERVICES
NA TYPE: 2 Derrick	F.L.C.	TruJ-541532
SCREENS CHANGED ☑ YES ☐ NO		AmJ-3238
TOP 140	TOP 175	Accum oil-036
MIDDLE 140	MIDDLE 175	
BOTTOM 140	BOTTOM 175	

SAFETY MTG.

MORNING TOUR

RECORD

04:30	06:30
1655	1655
86	83
7.0	6.8
11.0	11.0
89.7	91.6

METRES DRILLED

FROM	TO	DRLD/REAM/CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2412	2416	4	30 + motor / motor: 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10700	152	85	152	—

6000 — 50 — 12m

DEPTH (m)	DEVIATION (°)	DIRECTION
2400	12.4	273.3

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge #2			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0045	3/4	2	Drill F/2412m-2412.49m Rotate
0045	0115	1/2	5	Work & Clean hole.
0115	0130	1/4	7	R/S Function Bottom Pipe Rams 6secs ✓ RSPP
0130	0600	4½	2	Drill F/2412.49m-2415m Rotate
0600	0615	1/4	10	Survey @ 2400m
0615	0800	1¾	2	Drill F/2415m-2416m Slide.

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage. Boiler Blowdown 3x

[signature] | 8 | 10.5 350°C | 110000 daN | Crown Saver Policy | 0

DAY TOUR

RECORD

14:00	16:00
1650	1655
74	88
7.5	7.0
10.5	10.5
86.4	87.8

METRES DRILLED

FROM	TO	DRLD/REAM/CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2416	2419	3	30 / 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10800	152	85	152	

6000 — 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
4	1650	1050	2100
CENTRIFUGE			
1	1650	1050	1990

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	15:30	7½	2	DRILL F/2416m TO 2419.50 SLIDE
15:30	16:00	½	2	DRILL F/2419.50 TO 2419.80 ROTATE.

Greased Crown & Blocks.
TRANSFERED 10m³ of Active Mud - WADECO
PUMPED 2.8m³ of GEL - Active

NOTES ✓ FASTLINE CLAMP DEADLINE ANCHOR BRAKES & LINKAGE
BOILER BLOWDOWN 3X ✓ CROWN SAVER.

[signature] | 0 | 105 | 350° | 15,000 | WASTE OIL | 0

EVENING TOUR

RECORD

20:30	24:00
1665	1665
78	93
6.2	7.0
11.0	10.5
90.0	92.4

METRES DRILLED

FROM	TO	DRLD/REAM/CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2419	2424	5	30 + motor / 93	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152	—	152	85

6200 — 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2409.99	12.7	277.5

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	19:30	3½	2	Drill F/2419.80m TO 2422.15m ROTATE
19:30	20:00	½	7	R/S Function Annular 19Secs ✓ 2SPP.
20:00	23:45	3¾	2	Drill F/2422.15m-2424m Rotate.
23:45	24:00	¼	10	Survey @ 2409.99m

Held environmental meeting.

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor, Brakes and Linkage, Boiler Blowndown 3x, Held [illegible]

[signature] | 8 | 105 | 350°C | 105000 daN | Transport [illegible] | 0

158621

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LICENCE NO.	WELL NAME AND NO.
1900	Canadian Forest etal North Liard C31

OPERATOR	CONTRACTOR
Canadian Forest Oil	Akita Drilling LTD

SURFACE LOCATION	UNIQUE ID
300-C31-6040-12330-0	300-C31-6040-12330-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS (OPR. Initial / R.M. Initial)

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (using checklist)
(3) H²S Signs Posted (if required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually inspect BOP's - Flarelines & Degasser Lines

(1) Rig Site Health and Safety Meeting (once/month)
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills checked

YEAR 2001 · MONTH · RIG NO. 58

FUEL · RIG 1.96 · BOILER

WEATHER: TEMPERATURE · CURRENT CONDITIONS · WIND DIRECTION · ROAD Good

TIME (HRS)

	OPER.	DRILL ACTUAL	TRIPS	DEV SURVEY
MORN		22 3/4	1 1/2	
DAY		7 3/4		1/4
EVE.		8		
TOTAL		1836 3/4	1 1/2	1/4

Columns: OPER. · PICK UP & LAY DOWN · DRILL ACTUAL · REAMING · CORING · COND. MUD & CIRC. · TRIPS · RIG SERVICE · REPAIR RIG · CUT OFF DRILL LINE · DEV SURVEY · WIRE LINE LOGS · RUN CASE & CEMENT · WAIT ON CEMENT · NIPPLE UP B.O.P. · TEST B.O.P. · DRILL STEM TEST · PLUG BACK · SQUEEZE CEMENT · FISHING · DIR. WORK · SAFETY MTG.

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Reset Sub	163 / 166	.75 .75 m
1	NMMDC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
	BHA =		318.99 m
73	D.P.	STANDS	—
	D.P.	SINGLES	2085.04 m
	KELLYDOWN		.03 m
	TOTAL		2404.00 m
	WT. OF DC		19000
	WT. OF STRING		84000

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	Hughes
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3X14.3
DEPTH OUT (m)	—
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	4
TOTAL HOURS RUN	23 3/4
HOLE DRAG	10000 Pk slide 5000 Pk Rotate
TORQUE AT BOTTOM	8-10000 Ft-lbs
FILL ON BOTTOM (m)	—

CUTTING STRUCTURE: T · T₀ · MDC · LOC · B · Gage · ODC · Reason Pulled · Total Run m/hr.

MUD RECORD

TIME	04:00	06:00
DENSITY kg/m³	1685	1670
FUNNEL VIS. - (S/L)	86	83
W.L. (cm³)	7.0	7.2
pH	11.0	11.0
PVT m³	96.1	82.9

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0 (Centrifuge 2?)			

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2400	2404	4	30+ MTR 85

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10900	152	85	152

6000 · 50

DEPTH (m)	DEVIATION (°)	DIRECTION

Driller: Gary Potvin

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Reset Sub	163 / 166	.75 .75 m
1	NMMDC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
	BHA		318.99 m
73	D.P.	STANDS	2094.42
	D.P.	SINGLES	
	KELLYDOWN		6.42
	TOTAL		2407.00 m
	WT. OF DC		19000
	WT. OF STRING		94000

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	Hughes
TYPE	GT-S18
SERIAL NO.	R17DL
JETS (mm)	3X14.3
DEPTH OUT (m)	
DEPTH IN (m)	2400
TOTAL METRES DRILLED (m)	7
TOTAL HOURS RUN	10 3/4
HOLE DRAG	10000 Pk slide 4000 Pk Rotate
TORQUE AT BOTTOM	6-8000 kN/m.
FILL ON BOTTOM (m)	2m.

MUD RECORD

TIME	08:30	14:00	16:30
DENSITY kg/m³	1680	1680	1870
FUNNEL VIS. - (S/L)	83	93	75
W.L. (cm³)	9.2	8.3	7.0
pH	10.5	10.5	11.0
PVT m³	82.6	80.5	82.0

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Sod Sulfite	1 SX
Rate 120L	3 PLS
Cruiox	1 PL
Pot. S.T.A.	5 sxs
Lime	3 sxs
Stardax	2 sxs
Drispac	2 sxs

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
Chris Tommins	1680		1780
4	1680	1040	2100
Centrifuge			
Chris Tommins	1650	1160	2200

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2404	2407	3	30+ MTR

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10,300	152	85	152

5800 · 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2391.03	12.4	27[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Reset Sub	163 / 166	.75 .75 m
1	NMDC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
23	HWDP	127	210.51 m
	BHA =		318.99 m
73	D.P.	STANDS	2094.43 m
—	D.P.	SINGLES	—
	KELLYDOWN		- 1.21 m
	TOTAL		2412.00 m
	WT. OF DC		19000
	WT. OF STRING		94000

BIT RECORD

BIT NO.	16M
SIZE (mm)	215.9
IADC CODE	447
MFG.	Hughes
TYPE	GT S18
SERIAL NO.	R17DL
JETS (mm)	3X14.3
DEPTH OUT	—
DEPTH IN	2400
TOTAL METRES DRILLED	12
TOTAL HOURS RUN	18 3/4
HOLE DRAG	10000 Pk slide 4000 Pk Rotate
TORQUE AT BOTTOM	7-8000 Ft-lbs
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	18:30	2030	23:30
DENSITY kg/m³	1650	1680	1660
FUNNEL VIS. - (S/L)	71	73	76
W.L. (cm³)	7.2	7.2	7.5
pH	11.0	11.0	11.0
PVT m³	83.1	85.3	88.2

PRODUCT	AMOUNT X UNIT
Unical	4 sxs
Gel	20 sxs

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge #2			
0			

METRES DRILLED

FROM	TO	CORE	ROTARY R.P.M.
2407	2412	5	30+ MTR 85

PUMP PRESSURE	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10800	152	85	152

5800 · 50

DEPTH (m)	DEVIATION (°)	DIRECTION

Driller: Larry Abbott

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (unie/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible] 9
RIG NO 58

FUEL @ 8:00
RIG 1.96 BOILER

WEATHER
TEMPERATURE -17 °C
CURRENT CONDITIONS [illegible]
WIND DIRECTION W
ROAD [illegible]

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]7	72	[illegible]	[illegible]	189	[illegible]67	5.70	2649.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	169	4IF	31	F 1000	Emsco	254
127	38.07	E3	101	168	↓	135	F 1000	Emsco	254
127	29.04	EA	108	156	↓	150	F 800	Emsco	228.6

SAFETY MTG.

TOTALS	SHALE SHAKER(S)		RENTALS SERVICES
8	NO. 2 TYPE [illegible]	F.L.C.	TMJ-541161
8	SCREENS CHANGED YES / NO X		A [illegible] J-3917
8	TOP 140	TOP 175	Accumoil-36
8	MIDDLE 140	MIDDLE 175	
24	BOTTOM 140	BOTTOM 175	

MORNING TOUR

RECORD: 26:00 / 1870 / 83 / 7.2 / 11.0 / 82.9

METRES DRILLED FROM	TO	DRLD. RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2400	2404	4	30+ m-r 82	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152	85	152	—

6000 / 50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
00:00	01:30	1½	6	R.I.H. Fill P.P. every 500m
01:30	04:15	2¾	3	Ream F/2395m-2400m
04:15	08:00	3¾	2	Bottom Bit Drill F/2400m-2404m

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage
Boiler Blown down 3X

Centrifuge

Gary Potruch

8	10.5	350 °C	110000 DAN	Topic of [illegible]	0

DAY TOUR

RECORD:

14:00	16:30
1680	1870
93	75
8.3	7.0
10.5	11.0
80.5	82.0

METRES DRILLED FROM	TO	DRLD. RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2404	2407	3	30+ MTR	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10,200 kPa	152	85	152	

5800 / 50

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
1.5 Hours	1680		1780
4	1680	1040	2400

Centrifuge

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
1.5 Hours	1680	1160	2200

DEPTH (m)	DEVIATION (°)	DIRECTION
2391.03	12.4	274.7

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
08:00	08:45	3/4	3	Clean Hole - 2 mts to Btm for Conn.
08:45	11:15	2½	2	Drill F/2404 to 2405 m (Rotate)
11:15	11:30	¼	10	Work Pipe & Survey @ 2391.03
11:30	16:00	4½	2	Drill F/2405 to 2407 m (Slide)

NOTES ✓ Brakes & Linkage, Crown Saver, Fastline Clamp
Deadline Anchor. Blow Boiler Down 3x

8	105	350°	45 200	Working at Heights	0

EVENING TOUR

RECORD:

20:30	23:30
1680	1660
73	76
7.2	7.5
11.0	11.0
85.3	82.2

METRES DRILLED FROM	TO	DRLD. RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2407	2412	5	30+ m-r 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10800	152	85	152	—

5800 / 50

DEPTH (m)	DEVIATION (°)	DIRECTION

Centrifuge

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
16:00	17:00	1	2	Drill F/2407m to 2408m (Slide)
17:00	24:00	7	2	Drill F/2408 to 2412m. Rotate.

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boiler Blown down 3X, Held Competency Training meeting

Larry Potruch

8	10.5	350 °C	45000 daN	Crown Saver Policy	0

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158620

LICENCE NO.:	WELL NAME AND NO.:
19cc	Canadian Forest et al North Lund c-31A
OPERATOR:	CONTRACTOR:
Canadian Forest Oil Ltd.	Akita Drilling Ltd.
SURFACE LOCATION:	UNIQUE ID:
300-c-31-E 06-12-1330-0	300-c-31-E 06-12-1330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:

DAILY CHECKS — OPR. / R.M.

- (1) Daily Walk Around Inspection — Initial / Initial
- (2) Detailed Inspection-Weekly (using checklist) — Initial / Initial
- (3) H²S Signs Posted (if required) — Initial / Initial
- (4) Well License & Stick Diagram Posted — Initial / Initial
- (5) Flare Lines Staked — Initial / Initial
- (6) BOP Drills Performed — Initial / Initial
- (7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial / Initial
- (1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
- (2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
- (3) Mast Inspection Before Raising or Lowering — Initial
- (4) Crown Saver Checked — Initial
- (5) Motor Kills checked — Initial

YEAR 2001 MONTH
RIG NO. 58
FUEL @ 8
RIG 1.06
WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME - HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Hammertest	MWD
MORN.		6			1½		¼			¼													
DAY		3 1½			1¾	1¾																	
EVE.						6¾	½															1	¼
TOTAL		9 1½			3¼	8 3¼				¼												1	¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length (m)
1	Bit		.25
1	Motor	160	6.64
1	Fl. Sub / Ret. Sub	163 / 166	.75 .75
1	MWD DC	157	9.26
1	Ext Sub	164	1.98
2	NM Flex	163	18.38
1	X/O	164	.46
7	HWDP	127	64.56
1	Jar	174	5.43
21	HWDP	127	192.48
	BHA =		300.96
73	D.P.	STANDS	
X	D.P.	SINGLES	2104.01
	KELLYDOWN		6.97
	TOTAL		2398.00
WT. OF DC			18000
WT. OF STRING			83000

BIT RECORD

BIT NO.	15M	
SIZE (mm)	215.9	
IADC CODE	4 3 7	
MFG.	VAREL	
TYPE	ETD14MS	
SERIAL NO.	152189	
JETS (mm)	3x15.9	
DEPTH OUT (m)	—	
DEPTH IN (m)	2363	
TOTAL METRES DRILLED (m)	35	
TOTAL HOURS RUN	36	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG: Good Good
TORQUE AT BOTTOM: 7-8000 Ft/lbs
FILL ON BOTTOM (m): —

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1655	1650	1650
FUNNEL VIS. - (S/L)	81	86	85
W.L. (cm³)	7.0	7.0	7.0
pH	10.5	11.0	11.0
P.V./m³	97.3	97.8	90.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	146 sx
Aluminate	1/1
Connox	1/1
Bicarb	1/1
Caustic	1 sx
Potassium	27 sx
Soda Ash	1 sx
Defoamer	1 sx

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY — 0 — Centrifuge — 0

METRES DRILLED

FROM	TO	COND. RAM CORE	ROTARY R.P.M.
2392	2398	6	50 / mtr 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE
10200	152	85	15
5800		50	

DEPTH (m)	DEVIATION (°)
2382.3	11.5

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length (m)
1	Bit		.25
1	Motor	160	6.64
1	Float Sub / Reg Sub	163 / 166	.75 .75
1	MWD DC	157	9.26
1	Ext Sub	164	1.98
2	NM Flex	163	18.38
1	X/O	164	.48
7	HWDP	127	64.56
1	Jar	174	5.43
21	HWDP	127	192.48
	BHA =		300.96
73	D.P.	STANDS	
X	D.P.	SINGLES	2104.01
	KELLYDOWN		4.97
	TOTAL		2400.00
WT. OF DC			18000
WT. OF STRING			83000

BIT RECORD

BIT NO.	15M	
SIZE (mm)	215.9	
IADC CODE	4 3 7	
MFG.	Varel	
TYPE	ETD14MS	
SERIAL NO.	152189	
JETS (mm)	3x15.9	
DEPTH OUT (m)	2400	
DEPTH IN (m)	2363	
TOTAL METRES DRILLED (m)	37	
TOTAL HOURS RUN	39	

T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
2	3	CT	I	E	I	N	PR	

HOLE CONDITION
HOLE DRAG: 4000 N Rotate 10000 N Slide
TORQUE AT BOTTOM: 8-10000 Ft/lbs
FILL ON BOTTOM (m): —

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	08:00	12:00
DENSITY kg/m³	1650	1660
FUNNEL VIS. - (S/L)	87	87
W.L. (cm³)	7.0	6.8
pH	11.0	11.0
Pvt m³	91.3	84.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Staplex	1 sx
Desco	2 sx
Barite	210 sx
Sol. Sulf	4 sx
Aluminate	1/1
Connox	1/1
Bicarb	1/1
Lignite	8 sx

SOLIDS CONTROL: HOURS RUN — 0 — Centrifuge — 0

METRES DRILLED

FROM	TO	COND. RAM CORE	ROTARY R.P.M.
2398	2400	2	30+ mtr 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE
10200	152	85	152
5800		50	

DEPTH (m) | DEVIATION (°) | DIR.

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length (m)
1	Bit		.25
1	Motor	160	6.64
1	Float Sub / Ret Sub	163 / 166	.75 .75
1	MWD DC	157	9.26
1	Ext Sub	164	1.98
2	NM Flex	163	18.38
1	X/O	164	.49
7	HWDP	127	64.56
1	Jar	174	5.43
23	HWDP	127	210.57
	BHA =		318.99
	D.P.	STANDS	
	D.P.	SINGLES	
	KELLYDOWN		
	TOTAL		
WT. OF DC			19000
WT. OF STRING			

BIT RECORD

BIT NO.	15M	16M
SIZE (mm)	215.9	215.9
IADC CODE	4 3 7	
MFG.	VAREL	HUGHES
TYPE	ETD14MS	GT-S1S
SERIAL NO.	152189	R17DL
JETS (mm)	3x15.9	3x14.3
DEPTH OUT (m)	2400	
DEPTH IN (m)	2363	2400
TOTAL METRES DRILLED (m)	37	
TOTAL HOURS RUN	39	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG:
TORQUE AT BOTTOM:
FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	COND. RAM CORE	ROTARY R.P.M.
2400			

LINER SIZE (mm) | S.P.M. | LINER SIZE — 152 | 15

DEPTH (m) | DEVIATION (°) | DIRE.

Trip Record
ACT = 13.80
CAL = 11.80
DIFF = 2.00 m³

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial [illegible]

YEAR 2001 MONTH 02 DAY 28

RIG NO. 58

FUEL @ 8:00

RIG 1.64 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	224.3	79.11	[illegible]	H40	189	2332.87	2.70	2329.5

WEATHER	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	156	[illegible]	31	F-1000	Emsco	254
127	34.17	E3	101	151		135	F-1000	Emsco	254
127	34.12	E2	108	151		150	F-800	Emsco	228.1

SAFETY MTG.	Handout Tues	MWD		
1		1/4		
1		1/4		

TOTALS	SHALE SHAKER(S)		RENTALS SERVICES
	NO. 2 TYPE Derrick FLC		TMJ-540564
8	SCREENS CHANGED YES NO		AMJ-3330
8	TOP 140	TOP 175	[illegible] .36
8	MIDDLE 140	MIDDLE 175	
24	BOTTOM 140	BOTTOM 175	

MORNING TOUR

RECORD

04:00	00:00
1650	1650
86	85
7.0	7.0
11.0	11.0
89.8	90.0

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2392	2398	6	30	15
			MTR 95	24/26

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10900	152	85	152	

5800 @ 50 @ 3[illegible]

DEPTH (m)	DEVIATION (°)	DIRECTION
2382.3	11.5	270.3

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0000	0145	1¾	2	DRILL 2392m - 2394m
0145	0315	1½	5	WORK & CLEAN TIGHT HOLE
0315	0330	¼	[illegible]	R/S Function Bttm. Pipe Rams Esco. & RSFP
0330	0500	1½	2	DRILL 2394m - 2395m
0500	0515	¼	10	SURVEY
0515	0800	2¾	2	DRILL 2395m - 2398m [illegible]

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor Brakes Blow Down 3X

[illegible signature] | 8 | 105 | 350° | 100 000 daN | Stop Program | 0

DAY TOUR

RECORD

12:00
1660
87
6.8
11.0
89.7

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2398	2400	2	30 + MTR	15
			MTR = 93	24-26

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10200	152	85	152	—

5800 @ 50 @ 39[illegible]

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	1030	2½	2	Drill F/2398m - 2399.60m Rotate
1030	1115	¾	3	Work Pipe Ream Jnt To Bottom.
1115	1145	½	2	Drill F/2399.60m - 2400m Rotate
1145	1300	1¼	5	Work & Clean hole Circ Bottoms up
1300	1345	¾	3	Back Ream F/2400m - 2343m, Pull out F/2343m - 2315m
1345	1415	½	5	Flow / Pump Pill, Blow out kelly
1415	1600	1¾	6	P.O.O.H., Flow / @ 20 [illegible]

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage. Boiler Blow down 3x

[illegible signature] | 8 | 105 | 350°C | 110 000 daN | Flow Checks | 0

EVENING TOUR

RECORD

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2400				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION
TRIP RECORD		
ACT = 13.30		
CAL = 11.30		
DIFF = 2.00 m³		

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
16:00	19:00	3	6	Cont. P.O.O.H. Flow ✓ @ K STD, BHA out of HOLE.
19:00	20:00	1	22	Pull MWD, Break off Bit 15 m (BLIND RAMS) MAKE UP BIT F/16m INSTALL MWD TOOL
20:00	21:15	1¼	6	RIH TO 376 m.
21:15	21:30	¼	23	TEST MWD.
21:30	22:00	½	7	R/S DRAWWORKS, TOPDRIVE, CHECK STAND PIPE CLAMPS.
22:00	24:00	2	6	RIH. FILL PIPE EVERY 500m.
				FUNCTION BLIND RAMS. 7 SEC FLOW.

NOTES ✓ CROWN SAVER, FAST LINE CLAMP, DEADLINE ANCHOR BRAKES & LINKAGE. Boiler Blow down 3x

[illegible signature] | 8 | 105 | 350 | 15 000 | |

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158619

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Delayed Inspection-Rotary Lacing (check)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stow Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flowlines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting	Initial	Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist	Initial	Initial
(3) Mast Inspection Before Raising or Lowering	Initial	Initial
(4) Crown Saver Checked	Initial	Initial
(5) Motor Kills checked	Initial	Initial

YEAR: [illegible] MONTH: [illegible] DAY: [illegible]

RIG NO: 56

FUEL: 1.49

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

LICENCE NO.: 400

WELL NAME AND NO.: Canadian Forest et al North Lunch c-31-L

OPERATOR: Canadian Forest Oil Ltd.

CONTRACTOR: Nabors Drilling Ltd.

SURFACE LOCATION: 300-C31-L 94G-14330-C

UNIQUE ID: 300-C31-L 94G-14330-C

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG
MORN		6			1½		¼			¼											
DAY		6¾			1		¼														
EVE		7¾								¼											
TOTAL		20½			2½		½			½											

Morning

DRILLING ASSEMBLY

1	Bit		.25 m
1	Motor	160	6.64 m
1	Float Sub / Rest Sub	163 / 166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
		BHA:	300.96 m
73	D.P.	STANDS	2094.54 m
	D.P.	SINGLES	
	KELLYDOWN		6.55 m
	TOTAL		2379.00 m
	WT. OF DC		18000 daN
	WT. OF STRING		83000 daN

BIT RECORD

BIT NO	15 RR
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD14MS
SERIAL NO	152189
JETS (mm)	3X15.9
DEPTH OUT	—
DEPTH IN	2363
TOTAL METRES DRILLED	16
TOTAL HOURS RUN	15½
HOLE DRAG	[illegible]
TORQUE AT BOTTOM	[illegible]
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	02:00	04:00	06:00
DENSITY kg/m³	1650	1655	1655
FUNNEL VIS. - (S/L)	127	118	110
W.L. (cm³)	6.8	7.0	7.6
pH	11.0	11.0	10.5
[illegible]	74.6	74.9	76.1

PRODUCT	AMOUNT X UNIT
Barite	252 [illegible]
Desco	4 [illegible]
[illegible]	12 [illegible]
Flomax	12 sx
Caustic	1 sx

Centrifuge

METRES DRILLED

FROM	TO	RHD CORRECTED	ROTARY R.P.M.
2373	2379	6	30 / 95

	LINER SIZE (mm)	S.P.M.	
10700	152	85	[illegible]

4000	50

DEPTH (m)	DEVIATION (°)	
2362.9	10.6	26[illegible]

Day

DRILLING ASSEMBLY

1	Bit		.25 m
1	Motor / Float Sub	160 / 163	6.64 m
1	Rest Sub	166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
		BHA:	300.96 m
73	D.P.	STANDS	2094.34 m
—	D.P.	SINGLES	—
	KELLYDOWN		9.30 m
	TOTAL		2386.60 m
	WT. OF DC		19000 daN
	WT. OF STRING		83000 daN

BIT RECORD

BIT NO	15 RR
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	VAREL
TYPE	ETD14MS
SERIAL NO	152189
JETS (mm)	3X15.9
DEPTH OUT	—
DEPTH IN	2363
TOTAL METRES DRILLED	23
TOTAL HOURS RUN	22¼
HOLE DRAG	4000 N Rotate 5000 N Slide
TORQUE AT BOTTOM	7-8000 FT/LB
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	08:00	11:00	14:30
DENSITY kg/m³	1650	1655	1660
FUNNEL VIS. - (S/L)	108	109	84
W.L. (cm³)	7.4	7.0	7.0
pH	10.5	10.5	10.5
[illegible]	76.8	78.7	80.3

PRODUCT	AMOUNT X UNIT
Barite	210 Sx
Desco	3 Sx
Drispac	1 Sx
Stepac	1 Sx
[illegible]	1 [illegible]
Caloxe	1 [illegible]

Centrifuge #2

METRES DRILLED

FROM	TO	RHD CORRECTED	ROTARY R.P.M.
2379	2386	7	30 / [illegible]

	LINER SIZE (mm)	S.P.M.	
10300	152	85	152

6000	50

DEPTH (m)	DEVIATION (°)	DIR

Evening

DRILLING ASSEMBLY

1	Bit		.25 m
1	Motor	160	6.64 m
1	Ext. Sub / Rest Sub	163 / 166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.46 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
		BHA:	300.96 m
73	D.P.	STANDS	2094.34 m
	D.P.	SINGLES	m
	KELLYDOWN		3.30 m
	TOTAL		2392
	WT. OF DC		18000 daN
	WT. OF STRING		83000 daN

BIT RECORD

BIT NO	15 RR
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Varel
TYPE	ETD14MS
SERIAL NO.	152189
JETS (mm)	3X15.9
DEPTH OUT	
DEPTH IN	2363
TOTAL METRES DRILLED	29
TOTAL HOURS RUN	30
HOLE CONDITION	
HOLE DRAG	[illegible]
TORQUE AT BOTTOM	7-8000 FT/LB
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	17:30	20:00	22:00
DENSITY kg/m³	1655	1650	1655
FUNNEL VIS. - (S/L)	91	80	80
W.L. (cm³)	7.8	6.2	6.5
pH	10.5	10.0	10.5
Wt m³	83.6	84.1	86.5

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
5	1220	1120	1710

CENTRIFUGE

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
5	1750	1120	1710

METRES DRILLED

FROM	TO	RHD CORRECTED	ROTARY R.P.M.
2386	2392	6	30 / 95
	5.8		

	LINER SIZE (mm)	S.P.M.	
10200	152	85	152

6000	50

DEPTH (m)	DEVIATION (°)	DIR
2372.7	10.9	26[illegible]

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Flowlines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor/Oil checked		Initial

YEAR / MONTH / DAY: [illegible]
RIG NO. [illegible]

FUEL @ 8:00
RIG 1.42 BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING, TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	73.11	[illegible]	140	159	2632.53	[illegible]	2629.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	77	168	4 IF	31	F-1600	Emsco	254
127	36.7	E3	108	156	"	135	F-1600	Emsco	254
127	29.02	E2	108	168	"	150	F-500	Emsco	254

SAFETY MTG.

TOTALS	SHALE SHAKER(S)		RENTALS SERVICES
7	NO. 1 TYPE Brandt FLC		TWJ 538751
5	SCREENS CHANGED YES NO		AMJ 707
8	TOP 140	TOP 175	Accum. Cl. 3K
5	MIDDLE 140	MIDDLE 175	
24	BOTTOM 175	BOTTOM 175	

MORNING TOUR

RECORD

04:00	06:00
1655	1655
118	110
7.0	7.6
11.0	10.5
74.9	76.1

METRES DRILLED

FROM	TO	DRLD RNR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2373	2379	6	30 MTR 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10700	152	85	152	

4600 — 50 — 325m

DEPTH (m)	DEVIATION (°)	DIRECTION
2362.9	10.6	266.6

0 — Centrifuge — 0

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0000	0145	1¾	2	Drill 2373m - 2375 Rotate
0145	0315	1½	5	Work & Clean Hole for Connection (Tight)
0315	0330	¼	7	R/S Function Rotate Choke √ RSPP
0330	0530	2	2	Drill 2375m - 2376m Rotate
0530	0545	¼	10	Survey
0545	0800	2¼	2	Drill 2376m - 2379m

NOTES √ Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blown Down 3X

[illegible signature] | 0 | 105 | 350° | 85000 daN | House keeping | 0

DAY TOUR

RECORD

11:00	14:30
1655	1660
109	84
7.0	7.0
10.5	10.5
78.7	80.3

METRES DRILLED

FROM	TO	DRLD RNR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2379	2386	7	30 MTR 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10300	152	85	152	-

6000 — 50 — 325

DEPTH (m)	DEVIATION (°)	DIRECTION

0 — Centrifuge #2 — 0

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	1345	5¾	2	Drill f/2379m - 2385m
1345	1445	1	5	Work & Clean Tight hole.
1445	1500	¼	7	R/S, Function Top Pipe Rams 6 sec / CK √ RSPP
1500	1600	1	2	Drill f/2385m - 2386m.

NOTES √ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boiler Blowndown 3X √ Flare Igniter.

[illegible signature] | 8 | 105 | 350°C | 110000 daN | Mixing mud. | 0

EVENING TOUR

RECORD

20:00	22:00
1650	1655
80	80
6.2	6.5
10.0	10.5
84.1	76.5

METRES DRILLED

FROM	TO	DRLD RNR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2386	2392	6	30 + MTR	15
	5.15		95	24-32

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10200	152	85	152	

6600 — 50 — 325

DEPTH (m)	DEVIATION (°)	DIRECTION
2372.7	10.9	268.6

	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
5	1220	1150	1710

CENTRIFUGE

	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
5	1105	1210	1710

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	1630	½	2	Drill f/2386m - 2386.40m
1630	1645	¼	10	Survey @ 2372.7m
1645	2400	7¼	2	Drill f/2386.4m - 2392m

NOTES √ Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blown Down 3X

DRILLER'S SIGNATURE [illegible signature] | 0 | 105 | 350 | [illegible] daN | | 0

158618

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial

(1) Rig Site Health and Safety Meeting (one/crew/month)	Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)	Initial
(3) Mast Inspection Before Raising or Lowering	Initial
(4) Crown Saver Checked	Initial
(5) Motor Kills checked	Initial

YEAR 2001 MONTH 02

RIG NO. 58

FUEL

RIG 1.70

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al North Lord C-31A

OPERATOR: Canadian Forest Oil Ltd

CONTRACTOR: Akita Drilling Ltd

SURFACE LOCATION: 300-C-31-L-40-123.30-0

UNIQUE ID.: 300-C-31-L-40-123.30-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Handle Tools
MORN.					1/4	5 1/4	1/2															2 1/4
DAY		2 1/4			1 1/4	3 1/4	1/2		3/4													
EVE.		7 1/4			1/2					1/4												
TOTAL		9 1/2			2	8 1/2	1		3/4	1/4												2 1/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P.	STANDS		m
D.P.	SINGLES		m
KELLYDOWN			m
TOTAL			m
WT. OF DC			1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	14 MRR	15 m
SIZE (mm)	215.9	215.9
IADC CODE		5 3 7
MFG.	HUGHES	VAREL
TYPE	GT-1E	ETD 14 MS
SERIAL NO.	R21DF	152189
JETS (mm)	3 x 15.9	3 x 15.9
DEPTH OUT (m)	2363	
DEPTH IN (m)	2362	2363
TOTAL METRES DRILLED (m)	1	
TOTAL HOURS RUN	3/4	

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
1	1	BT	H	E	IN	NO	DTF	

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT
Barite	136 sx
Lignite	1 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0			

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2363			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor	160	6.64 m
1	Float Sub	163	.75 m
1	Test Sub	166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
		BHA =	300.96
72	D.P.	STANDS	2065.41 m
—	D.P.	SINGLES	— m
	KELLYDOWN		-.96 m
	TOTAL		2365.42 m
	WT. OF DC		18000
	WT. OF STRING		79000

BIT RECORD

BIT NO.	15 m
SIZE (mm)	215.9
IADC CODE	4 5 3 7
MFG.	Varel
TYPE	ETD 14 MS
SERIAL NO.	152189
JETS (mm)	3 x 15.9
DEPTH OUT (m)	—
DEPTH IN (m)	2363
TOTAL METRES DRILLED (m)	2
TOTAL HOURS RUN	2 1/4

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 10000 ↑ 8000 ↓ ... 14000 ... Rotate.

TORQUE AT BOTTOM 8000 Ft/Lb

FILL ON BOTTOM (m) 0

MUD RECORD

TIME	15:00
DENSITY kg/m³	1655
FUNNEL VIS. - (S/L)	200+
W.L. (cm³)	7.2
pH	11.0
Pv ... 3	68.1

PRODUCT	AMOUNT X UNIT
Micro...	1 pl
Biocide	1 pl
Colonol	1 pl

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0			

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2363	2365	2	30 Motor 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
12500	152	—	152
7400		80	

DEPTH (m)	DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1			.25 m
1	Motor	160	6.64 m
1	Float Sub	163	.75 m
	Test Sub	166	.75 m
1	MWD DC	157	9.26 m
1	Ext Sub	164	1.98 m
2	NM Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
		BHA =	300.96
72	D.P.	STANDS	
x	D.P.	SINGLES	2074.99 m
	KELLYDOWN		6.83 m
	TOTAL		2373 m
	WT. OF DC		18000
	WT. OF STRING		79000

BIT RECORD

BIT NO.	15 m
SIZE (mm)	215.9
IADC CODE	5 3 7
MFG.	Varel
TYPE	ETD 14 MS
SERIAL NO.	152189
JETS (mm)	3 x 15.9
DEPTH OUT (m)	
DEPTH IN (m)	2363
TOTAL METRES DRILLED (m)	10
TOTAL HOURS RUN	9 1/2

CUTTING STRUCTURE T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 4-5000 ↑↓ Rotating

TORQUE AT BOTTOM 9000 FT/LBS

FILL ON BOTTOM (m)

MUD RECORD

TIME	18:00	20:00	22:00
DENSITY kg/m³	1650	1630	1650
FUNNEL VIS. - (S/L)	198	185	133
W.L. (cm³)	6.8	6.5	6.6
pH	10.5	11.0	11.0
Pv ... 3	68.8	70.0	71.7

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0			

CENTRIFUGE

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2365	2373	8	30 Motor 95

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11200	152	85	152

DEPTH (m)	DEVIATION (°)	DIRECTION
2353.40	10.5	26...

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 2011 MONTH 2? DAY ?
RIG NO 58

FUEL @ 8:00
RIG 1.70 BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	211.7	79.61	ISTC	MIL	189	2432.87	5.70	2429.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	77	168	4 IF	30	F-1600	Emsco	254
127	35.07	E3	101	152	↓	127	F-1600	Emsco	254
127	29.02	E3	108	162		145	F-1600	Emsco	254

SAFETY MTG.						TOTALS
Handle Tools						
3/4						8
						8
						8
2 1/4						24

SHALE SHAKER(S)
NO. TYPE 2 Derrick FLC
SCREENS CHANGED ☐ YES ☒ NO
TOP 145 / TOP 175
MIDDLE 145 / MIDDLE 175
BOTTOM 175 / BOTTOM 175

RENTALS SERVICES
TMJ 538453
AMJ 239
Accum CL 36

MORNING TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2363				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0400	4	6	P.O.O.H. Flow @ 2350 ...
0400	0530	1 1/2	22	... Motor ... Inspect MWD Tools
0530	0545	1/4	7	R/S Function Blind Rams & sec
0545	0630	3/4	22	R/C New Meter Set MTR Install MWD Tool
0630	0745	1 1/4	6	R.I.H. w/ Directional BHA
0745	0800	1/4	5	Test MWD

C.L. 11.55 m³
Trip Record → Meas. 13.65 m³
Diff 2.1 m³

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor
Boiler Blown Down 3X

[signature]	8 / 11.51 / 350			0

DAY TOUR

RECORD

15:00
16 55
200+
7.2
11.0
68.1

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2363	2365	2	30 / motor 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12500	152	—	152	95

7400 | 98 | 50

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0815	1/4	5	Test MWD @ 357 m
0815	1130	3 1/4	6	R.I.H. Fill @ ... ✓MWD
1130	1215	3/4	9	Slip & Cut ... of Drill line. ✓Crown Saver.
1215	1245	1/2	7	R/S Function Annular 19 secs ✓RSPD
1245	1345	1	5	Wash F/2280 m - 2363 m NO Fill
1345	1600	2 1/4	2	Pattern Bit & Drill F/2363 m - 2365 m

NOTES ✓Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage
Boiler Blowdown 3X, Function Remote Choke ✓Floor Anchor

[signature]	8 / 10.51 / 350°C	90000 daN	Tripping.	0

EVENING TOUR

MUD RECORD

20.00	22.00
1630	1650
185	133
6.5	6.6
11.0	11.0
16.0	11.7

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2365	2373	8	30 / 95	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11200	152	85	152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

DEPTH (m)	DEVIATION (°)	DIRECTION
2353.40	10.5	260.6

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1630	1/2	5	Work & Clean hole make Connection ✓Shaker screens
1630	1815	1 3/4	2	Drill F/2365 m - 2367 m
1815	1830	1/4	10	Survey @ 2353.40 m
1830	2400	5 1/2	2	Drill 2367 m - 2373 (Rotate)

NOTES ✓Crown Saver, Fastline Clamp, Deadline Anchor
Boiler Blown Down 3X

DRILLER'S SIGNATURE	BOILER			
[signature]	8 / 10.51 / 350	85000 daN		0

FOLD HERE →

158617

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH

RIG NO. 2.02

FUEL @ 8:0

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD Good

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al North Liard C-31A

OPERATOR: Canadian Forest Oil LTD

CONTRACTOR: Akita Drilling LTD

SURFACE LOCATION: 300-C-31-60-40-123-30-0

UNIQUE ID.: 300-C-31-60-40-123-30-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	Con. Tanks
MORN.			8																			
DAY		3/4	4		1 1/4	1/2	1/2															1
EVE.					4	1 1/4																2 3/4
TOTAL		3/4	12		5 1/4	1 3/4	1/2															3 3/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	motor	160	6.20 m
1	Float Sub	163	.75 m
1	Rest Sub	166	.75 m
1	MWD DC	157	9.26 m
1	Nm Ext.	164	1.98 m
2	Nm Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
	BHA		300.52 m
71	D.P.	STANDS	m
xx	D.P.	SINGLES	2055.75 m
	KELLYDOWN		2.27 m
	TOTAL		2358.00 m
WT. OF DC		16000	daN
WT. OF STRING		83000	daN

BIT RECORD

BIT NO.	14 M RR	
SIZE (mm)	215.9	
IADC CODE		
MFG.	Hughes	
TYPE	GT-18	
SERIAL NO.	R31DF	
JETS (mm)	3x15.9	
DEPTH OUT (m)		Reaming
DEPTH IN (m)	2362	2303
TOTAL METRES DRILLED (m)		58
TOTAL HOURS RUN		25 3/4

CUTTING STRUCTURE: T | To | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG: Good Good

TORQUE AT BOTTOM: 8000 ft/lbs

FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE

TIME	02:00	04:00	06:00
DENSITY kg/m³	1655	1650	1650
FUNNEL VIS. - (S/L)	110	110	110
W.L. (cm³)	6.5	6.5	6.2
pH	11.0	11.0	11.0
PVT	84.0	84.0	85.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Liquimul	27 sx
Soda Ash	4 sx
[illegible]	1 sx
Aluminum	1 sx
Desco	2 sx
Starch	2 sx
Sodium	6 sx
Barite	68 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.
2362			
2345	2354	9	30

PUMP: 9700 | LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152

7000 | 345

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	motor	160	6.20 m
	Float Sub	163	.75 m
1	RES Sub	166	.75 m
1	MWD DC	157	9.26 m
1	Nm Ext.	164	1.98 m
2	Nm Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	Jar	174	5.43 m
21	HWDP	127	192.48 m
	BHA		300.52 m
72	D.P.	STANDS	2065.41 m
—	D.P.	SINGLES	—
	KELLYDOWN		2.61 m
	TOTAL		2363.32 m
WT. OF DC		18000	daN
WT. OF STRING		83000	daN

BIT RECORD

BIT NO.	14 M RR	
SIZE (mm)	215.9	
IADC CODE		
MFG.	Hughes	
TYPE	GT-18	
SERIAL NO.	R31DF	
JETS (mm)	3x15.9	
DEPTH OUT (m)	—	Reaming
DEPTH IN (m)	2362	2303
TOTAL METRES DRILLED (m)	1	59
TOTAL HOURS RUN	3/4	25 3/4

CUTTING STRUCTURE: T | To | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG: [illegible]

TORQUE AT BOTTOM: 7000 ft/lbs [illegible]

FILL ON BOTTOM (m): 1 m

MUD RECORD

MUD TYPE

TIME	08:00	13:00	
DENSITY kg/m³	1660	1665	
FUNNEL VIS. - (S/L)	98	94	
W.L. (cm³)	6.6	6.4	
pH	11.0	11.0	
PVT m³	86.7	75.4	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	130 sx
Liquimul	15 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.
2362	2363	1	30
2354	2362	Ream 8	30

PUMP: 9600 | LINER SIZE (mm) 152 | S.P.M. – | LINER SIZE (mm) 152

5400 | 278

DEPTH (m) | DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	Motor	160	6.20 m
	FT Sub	163	.75 m
1	RES Sub	166	.75 m
1	MWD DC	157	9.26 m
1	NM Ext Sub	164	1.98 m
2	Nm Flex	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	64.56 m
1	JAR	174	5.43 m
21	HWDP	127	192.48 m
	BHA =		300.52 m
72	D.P.	STANDS	2065.41 m
	D.P.	SINGLES	m
	KELLYDOWN		2.50 m
	TOTAL		2363.43 m
WT. OF DC		16000	daN
WT. OF STRING		83000	daN

BIT RECORD

BIT NO.	14 M RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GT-18
SERIAL NO.	R31DF
JETS (mm)	3x15.9
DEPTH OUT (m)	
DEPTH IN (m)	2363
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	3/4

CUTTING STRUCTURE: T | To | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

METRES DRILLED

FROM	TO	DRLG. REAM. CORE-C	ROTARY R.P.M.
2363			30

PUMP: 12000 | LINER SIZE (mm) 152 | S.P.M. 65 | LINER SIZE (mm) 152

DEPTH (m) | DEVIATION (°) | DIRE

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY

RIG NO. 2.02 BOILER

FUEL @ 8:00

WEATHER	
TEMPERATURE	− 16 °C
CURRENT CONDITIONS	[illegible]
WIND DIRECTION	[illegible]
ROAD	Good

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG. HEAD (m)	SET AT (m)
	244.5	220.7	71.4	[illegible]	H4[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.39	HW	77	156	4½IF	30	F-1000	[illegible]	[illegible]
127	[illegible]	E3	101	156	↓	123	F-1000	[illegible]	[illegible]
127	[illegible]	G2	101	156	↓	145	F-1000	[illegible]	[illegible]

	SAFETY MTG.		TOTALS
	Clean Tanks		
			5
	1		5
	2 3/4		5
	3 3/4		24

SHALE SHAKER(S)		RENTALS SER.
NO. 2 TYPE Derrick FLC		TMJ 5348CF
SCREENS CHANGED YES X NO		HMS E367
TOP 140	TOP 175	Accum. 1.36
MIDDLE 140	MIDDLE 175	
BOTTOM 175	BOTTOM 175	

MORNING TOUR

RECORD

04:00	06:00
1650	1650
110	110
6.5	6.8
11.0	11.0
84.0	85.7

METRES DRILLED

FROM	TO	DRD. REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362				
2345	2354	9	30	1-5

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9700	152		152	85

7000 | 245 | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0600	0800	2	3	Ream 2345 – 2354

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boiler Blown Down 3X

[illegible signature] | 8 | 165 350 | | 0

DAY TOUR

RECORD

13:00	
1665	
94	
6.4	
11.0	
75.4	

METRES DRILLED

FROM	TO	DRD. REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362	2363	1	30	10-15
2354	2362	Ream 8	30	1-5

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9600	152	–	152	85

5200 | 275 | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1200	4	3	Ream f/2354m – 2362m
1200	1245	3/4	2	Drill f/2362m – 2363.3m
1245	1400	1¼	5	Circulate Bottoms up Work Pipe
1400	1430	½	6	Back Ream & Circ f/2363m – 2298 Pull into Casing
1430	1500	½	7	R/S Function Bottom Pipe Rams 6 Secs
1500	1600	1	22	Clean Shale out of Mud Tanks

NOTES ✓ Crown Saver [illegible] Boiler Blown Down 3X ✓ Torque Tube & Top Drive

[signature] | 8 | 165 350 | 100000 daN | Clean mud Tanks | 0

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD. REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2363			30	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
12000	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1845	2¾	22	Clean Shale out of mud Tanks, Clean Pumps & Screens
1845	1945	1	5	Circulate mud Tanks
1945	2030	3/4	6	R.I.H. to 2363m (WASH TO BTM)
2030	2230	2	5	CIRC. & WORK STRING (HIGH PRESSURE)
2230	2300	½	6	Back Ream & Circ. f/2363 – 2302m, Pull into Csg
2300	2400	1	5	Flow Chk. & Mix Pill, Pump Pill
				Blow out Kelly Hose

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boiler Blown Down 3X

[illegible signature] | 8 | 165 350 | 100000 daN | | 0

158616

LICENCE NO.	WELL NAME AND NO.
Bcc	Canadian Forest et al North ... C-31-1

OPERATOR	CONTRACTOR
Canadian Forest Oil Ltd	... Drilling Ltd

SURFACE LOCATION	UNIQUE ID
[illegible]	[illegible]

SIGNATURE OF OPERATORS REPRESENTATIVE | SIGNATURE OF CONTRACTORS RIG MANAGER

DAILY CHECKS | OPR. | R.M.

YEAR 2001 | RIG NO 56

FUEL 190

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

OPER		
MORN	24	[illegible]
DAY	7	1
EVE	8	
TOTAL	1795	1 [illegible]

DRILLING ASSEMBLY / BIT RECORD / MUD RECORD / METRES DRILLED

1		.25	BIT NO	14M RR		
1	MOTOR	160	6.06	SIZE	215.9	
1	Float Sub	163	.75	IADC CODE		
1	Rest Sub	166	.75	MFG.	HUGHES	
1	MWD DC	157	9.26	TYPE	GT-18	
1	MWD Ext Sub	164	1.98	SERIAL NO	R21DF	
2	MWD FLEX	163	18.38	JETS	3x15.9	
1	X/O	164	.48	DEPTH OUT		
7	HWDP	127	64.56	DEPTH IN	2362	2303
1	JAR	174	5.43	TOTAL METRES DRILLED		35
21	HWDP	127	192.46	TOTAL HOURS RUN		5¼
		BHA	300.52			
71	D.P.	STANDS	2036.66			
—	D.P.	SINGLES	—			
		KELLYDOWN	9.20			
		TOTAL	2338.66	HOLE DRAG	Break 11,000	
WT. OF DC		18000		TORQUE AT BOTTOM	9000 FT LBS	
WT. OF STRING		78000		FILL ON BOTTOM		

MUD	
TIME	06:00
DENSITY	1660
FUNNEL VIS.	[illegible]
W.L.	7.2
pH	11.0
[illegible]	91.0

FROM	TO		ROTARY RPM
2362			
2303	2338	35	35

4700	142	
5000		38

1			.25	BIT NO	14M RR		
1	Motor	160	6.20	SIZE	215.9		
1	Float Sub	163	.75	IADC CODE			
1	Rest Sub	166	.75	MFG.	Hughes		
1	MWD DC	157	9.26	TYPE	GT-18		
1	MWD Ext Sub	164	1.98	SERIAL NO	R21DF		
2	MWD Flex	163	18.38	JETS	3x15.9		
1	X/O	164	.48	DEPTH OUT		Running	
7	HWDP	127	64.56	DEPTH IN	2362	2303	
1	Jar	174	5.43	TOTAL METRES DRILLED		44	
21	HWDP	127	192.48	TOTAL HOURS RUN		9¾	
		BHA	300.52				
71	D.P.	STANDS	2036.67				
	D.P.	SINGLES	—				
		KELLYDOWN	9.20				
		TOTAL	2328.66	HOLE DRAG	10,000 ...		
WT. OF DC		18,000		TORQUE AT BOTTOM	9500 ...		
WT. OF STRING		82,000		FILL ON BOTTOM			

MUD			
TIME	08:00	11:00	15:30
DENSITY	1680	1680	1665
FUNNEL VIS.	79	78	94
W.L.	7.4	7.4	7.0
pH	11.0	11.0	11.0
[illegible]	84.5	87.8	86.9

PRODUCT	AMOUNT X UNIT
Kelzan	4sx
Sod Silicate	25x
Soda Ash	4sx
Biocide	1pl

FROM	TO		ROTARY RPM
2362			30
2317	2336	19	

4700	159	—	159
5000			

1			.25	BIT NO.	14M RR	
1	Motor	160	6.20	SIZE	215.9	
1	Float Sub	163	.75			
1	Rest Sub	166	.75	IADC CODE		
1	MWD DC	157	9.26	MFG.	Hughes	
1	MWD EXT Sub	164	1.98	TYPE	GT-18	
2	MWD Flex	163	18.38	SERIAL NO.	R21DF	
1	X/O	164	.48	JETS	3 x 15.9	
7	HWDP	127	64.56	DEPTH OUT		Running
1	Jar	174	5.43	DEPTH IN	2362.	2303
21	HWDP	127	192.48	TOTAL METRES DRILLED		53
		BHA	300.52	TOTAL HOURS RUN		17¾
71	D.P.	STANDS				
1	D.P.	SINGLES	2046.35			
		KELLYDOWN	1.87			
		TOTAL	2345	HOLE DRAG	Break 11,000 Rotating	
WT. OF DC		18000		TORQUE AT BOTTOM	9000 FT LBS	
WT. OF STRING		85,000		FILL ON BOTTOM		

MUD			
TIME	18:00	20:00	22.00
DENSITY	1655	1655	1655
FUNNEL VIS.	104	105	105
W.L.	7.2	7.5	7.5
pH	11.0	11.0	11.0
Pot m^3	84.1	83.6	83.0

PRODUCT | AMOUNT X UNIT

FROM	TO		ROTARY RPM
2362			30
2336	2345	9	

4700	142

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	[illegible]	
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)	[illegible]	
(4) Well License & Stick Diagram Posted	[illegible]	
(5) Flare Lines Staked	[illegible]	
(6) BOP Drills Performed	[illegible]	
(7) Visually Inspect BOP's, Flarelines & Degasser Lines	[illegible]	
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		[illegible]
(4) Crown Saver Checked		
(5) [illegible]		

YEAR	MONTH	DAY
2001	02	24

RIG NO. 46

FUEL 8.00

[illegible] 1 40 BOILER

LAST CASING TUBING OR LINER	O.D (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	244.5	220.7	70.1	[illegible]	HLC	159	2230.47	4.70	2227.5

WEATHER	
TEMPERATURE	- 6 °C
CURRENT CONDITIONS	[illegible]
WIND DIRECTION	WEST
ROAD	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.70	[illegible]	77	159	4½ IF	30	F-1000	EMSCO	254
127	[illegible]	E3	101	151	↓	127	F-1000	EMSCO	254
127	[illegible]	E3	108	161	↓	145	F-1000	EMSCO	254

SAFETY MTG.

TOTALS			
	[illegible] TYPE [illegible]		TMJ 333641
	SCREENS CHANGED YES X NO		AMJ 1165
	TOP 140	TOP 170	Accum. Vol .36
	MIDDLE 140	MIDDLE 170	
24	BOTTOM 170	BOTTOM 170	

RECORD — MORNING TOUR

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.	WT ON BIT
2362				
2303	2338	35	35	5

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9700	152		152	55

5000		229		50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
[illegible]	0130	1½	6	Pick up 31 jts of [illegible]
0130	0145	¼	7	RR [illegible] top [illegible]
0145	0430	2¾	6	RIH [illegible] circ. every 500m
0430				[illegible] circ @ 2351m wash down to 2290
	0515	¾		Circ. contents out of drill string
0515	[illegible]	[illegible]	3	Ream from 2303m - 2338m

[illegible] pipe tally = 2337.20
[illegible] in hole = 2337.26
No correction

NOTES √ Crown saver, fastline clamp, deadline anchor
Boiler blown down 3X

[illegible signature]	8 1051 350°		[illegible]	0

CENTRIFUGE

	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
0			

DAYLIGHT TOUR

11:00	15:30
1680	1665
78	94
74	70
110	110
87.8	86.9

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.	WT ON BIT
2362			30	5
2317	2336	19		

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
4700	152	-	152	55

5000				50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0830	½	3	[illegible] back ream to 2336m
0830	0930	1	5	[illegible] screens
0930	1600	6½	3	[illegible] to 2317 Ream F/2317m - 2336m

NOTES √ Crown saver, fastline clamp, deadline anchor [illegible]
[illegible] 3X, greased crown block

[illegible]	0 1051 360°C	1-5000 [illegible]	Connections	0

CENTRIFUGE

	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
0			

RECORD — EVENING TOUR

20:00	22:00
1655	1655
105	105
7.5	7.5
110	110
85.6	83.0

METRES DRILLED

FROM	TO	[illegible]	ROTARY R.P.M.	WT ON BIT
2362			30	5
2336	2345	9		

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9700	152		152	55

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2400	8	3	Ream F/2336m - 2345m

NOTES √ Crown saver, fastline clamp, deadline anchor
Boiler blown down 3X

CENTRIFUGE

	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
0			

[illegible signature]	0 1051 350	860 [illegible]	[illegible]	0

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158615

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al North [illegible] C-21A

OPERATOR:	CONTRACTOR:
Canadian Forest Oil [illegible]	Akita Drilling Ltd

SURFACE LOCATION:	UNIQUE ID.:
[illegible]	[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [initialled]	Initial [initialled]
(2) Detailed Inspection-Weekly (using checklist)	Initial [initialled]	Initial [initialled]
(3) H2S Signs Posted (if required)	Initial [initialled]	Initial [initialled]
(4) Well License & Stack Diagram Posted	Initial [initialled]	Initial [initialled]
(5) Flare Lines Staked	Initial [initialled]	Initial [initialled]
(6) BOP Drills Performed	Initial [initialled]	Initial [initialled]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [initialled]	Initial [initialled]

	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)	
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)	
(3) Mast Inspection Before Raising or Lowering	
(4) Crown Saver Checked	[initialled]
(5) Motor Kills checked	

YEAR	MONTH

RIG NO 69

FUEL @ 8:00

RIG	BOILER
.69	

WEATHER

TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Handle Tools	MWD Tools
MORN.						23/4	1/4															3	2
DAY						5	1/2																23/4
EVE.					1/2	6	[illegible]															11/2	
TOTAL					1/2	13 3/4	1/2															41/2	43/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Description	OD	Length
			.55 m
1	MOTOR	165	6.60 m
1	FLT SUB	165	.75 m
1	MWD DC	157	9.26 m
1	EXT SUB	164	1.96 m
2	NM FLEX	163	18.38 m
1	X/O	164	.48 m
7	HWDP	127	[illegible] m
1	JAR	174	5.43 m
21	HWDP	127	191.44 m
	BHA		300.94 m
	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC			1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	14M	
SIZE (mm)	215.9	
IADC CODE		
MFG.	HUGHES	
TYPE	GT-1F	
SERIAL NO.	K21DF	
JETS (mm)	3X15.9	
DEPTH OUT (m)		
DEPTH IN (m)	2362	
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	74 sx
Lignite	1 sx

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
159		159

DEPTH (m)	DEVIATION (°)	DIR

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Description	OD	Length
1			.25 m
1	MOTOR	165	6.60 m
	FLEX	163	
1	[illegible]	166	.75 m
1	MWD DC	157	9.26 m
1	EXT SUB	164	1.98 m
2	NM FLEX	163	18.39 m
1	X/O	164	.46 m
7	HWDP	127	65.60 m
1	JAR	174	5.43 m
21	HWDP	127	191.44 m
	BHA		300.92 m
	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC		17000	1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	14M	13mRR
SIZE (mm)	215.9	215.9
IADC CODE		4 3 7
MFG.	HUGHES	SMITH
TYPE	GT-1F	MF1P
SERIAL NO.	K21DF	YE9529
JETS (mm)	3X15.9	OPEN
DEPTH OUT (m)		
DEPTH IN (m)	2362	
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	1
DENSITY kg/m³	1670
FUNNEL VIS. - (S/L)	96
W.L. (cm³)	7.5
pH	11.5
	2 [illegible] 3

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
159		159

DEPTH (m)	DEVIATION (°)	DIREC

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Description	OD	Length
1			.25 m
1	B-SUB		1.19 m
1	X/O	164	.48 m
38	HWDP	127	357.04 m
	BHA		358.96 m
	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC		13000	1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	13mRR
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	SMITH
TYPE	MF1P
SERIAL NO.	YE9529
JETS (mm)	OPEN
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
159		159

DEPTH (m)	DEVIATION (°)	DIRECT

FOLD HERE →

DAILY CHECKS

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial [illegible]
(3) H_2S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Pressures & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Meet Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY

RIG NO. [illegible]

FUEL @ 8:00

RIG	BOILER
.69	

WEATHER	°C
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]	[illegible]	[illegible]	77	[illegible]	[illegible]	30	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	E3	[illegible]	[illegible]	1	127	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	E2	[illegible]	[illegible]	[illegible]	145	[illegible]	[illegible]	[illegible]

SAFETY MTG.	Hande Tools	Mud Tools				TOTALS
3		1 1/2				[illegible]
		3/4				[illegible]
	1 1/2					[illegible]
	4 1/2	4 3/4				24

SHALE SHAKER(S)		RENTALS SERVICES
NO./TYPE [illegible]		TMJ [illegible]
SCREENS CHANGED YES X NO		TMJ [illegible]
TOP 140	TOP 175	[illegible] 36
MIDDLE 140	MIDDLE 175	
BOTTOM 175	BOTTOM 175	

RECORD — MORNING TOUR

METRES DRILLED FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
CENTRIFUGE			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
[illegible]	0200	2	6	P.O.O.H. [illegible] 159mm DC & Fishing Tools [illegible]
[illegible]				Change [illegible] SET [illegible] 1.5
	0430	2 1/2	22	Make up BHA # 63
0430	0530	1	23	Clean out [illegible] in MWD DC
0530	0545	1/4	7	K/S [illegible]
0545	0630	3/4	23	Lay Down MWD DC & Change Stabilizers inside
0630	0700	1/2	22	P/U MWD DC & [illegible] Tool
0700	0745	3/4	6	M/U BHA & R.I.H.
0745	[illegible]	[illegible]	23	Test MWD
				Trip [illegible] CAL. 10.5 m^3 MEA. 11.7 m^3 DIFF. 1.20 m^3

NOTES √ Crown Saver [illegible]

Boiler Blown Down 3X

DRILLER SIGNATURE					
[illegible]	8	10.5	350		0

RECORD — DAY TOUR

METRES DRILLED FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
Centrifuge			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	0915	1 1/4	6	R.I.H. [illegible] Test MWD
0915				[illegible]
	1000	[illegible]	23	[illegible]
[illegible]	1215	[illegible]	6	[illegible]
				[illegible]
[illegible]	1415	2	23	[illegible]
				[illegible] For Cement
1415	1430	1/4	7	[illegible]
1430	1600	1 1/2	6	[illegible]
				[illegible] Top [illegible] E3 D.P.
				Bottom [illegible] E2 D.P.
				Cement [illegible] 3 E3 [illegible]

NOTES √ Crown Saver [illegible]

[illegible] 3X

DRILLER SIGNATURE						
[illegible]	8	10.5	350	[illegible]	Tripping.	0

RECORD — EVENING TOUR

METRES DRILLED FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
CENTRIFUGE			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	1745	1 3/4	6	Continue R.I.H. Checking For Cement, Fill Pipe [illegible]
1745	1815	1/2	5	[illegible]
1815	1900	3/4	6	P.O.O.H. To [illegible] MWD [illegible] Drilling assembly
1900	2000	1	6	Lay Down 18 Joints E2 DP
2000	2045	3/4	6	P.O.O.H. Flow [illegible] out of Hole
2045	2215	1 1/2	22	P/U & M/U New BHA (Directional)
2215	2400	1 3/4	6	R.I.H. To 328 m Test MWD Pressure [illegible]

NOTES √ Crown Saver, [illegible]

Boiler Blown Down 3X

DRILLER SIGNATURE			
[illegible]	8	10.5	350

158614

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR 01 MONTH

RIG NO. 54

FUEL @ 8

RIG 1.16 BOIL

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 400

WELL NAME AND NO.: Canadian Forest et al North Liard C-31A

OPERATOR: Canadian Forest Oil LTD

CONTRACTOR: Akita Drilling Ltd.

SURFACE LOCATION: 200-

UNIQUE ID.:

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME - HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	
MORN.					7¾		¼															
DAY					2½														5½			
EVE.					X 3½														2½			
TOTAL					12¾ 3½		¼												8			

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		LENGTH
1	Screw in sub	1.10 m
1	Bumper sub	3.52 m
1	Jar	3.45 m
1	X/O	.51 m
6	159mm DC	56.75 m
1	intensifier	2.73 m
1	X/O	.49 m
	BHA:	66.58 m
77	D.P. STANDS	m
xx	D.P. SINGLES	2225.62 m
	KELLYDOWN	9.19
	TOTAL	2268.51 m
	WT. OF DC	8000 (1000 daN)
	WT. OF STRING	75000 (1000 daN)

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T1 | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG: [illegible]

TORQUE AT BOTTOM: 5500 ft/lb

FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1525	1575	1610
FUNNEL VIS. - (S/L)	84	84	84
W.L. (cm³)	7.5	7.5	7.5
pH	11.5	11.5	11.5
PVT m³	80.5	83.3	84.9

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	84 sx
Lignite	6 sx

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.
2362			15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
6100	152		152

2800	82

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		LENGTH
1	Screw in sub	1.10 m
1	Bumper sub	3.52 m
1	Jar	3.45 m
1	X/O	.51 m
6	159mm DC	56.75 m
1	intensifier	2.73 m
1	X/O	.49 m
	BHA:	66.58 m
77	D.P. STANDS	m
1x	D.P. SINGLES	2225.62 m
	KELLYDOWN	-7.50 m
	TOTAL	2284.70 m
	WT. OF DC	8000 (1000 daN)
	WT. OF STRING	76000 (1000 daN)

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T1 | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG: Good Lock

TORQUE AT BOTTOM: 5500 Ft/lb

FILL ON BOTTOM (m): —

MUD RECORD

MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	08:00	12:00	03:00
DENSITY kg/m³	1640	1670	1670
FUNNEL VIS. - (S/L)	84	86	86
W.L. (cm³)	7.2	7.4	7.5
pH	11.5	11.5	11.5
PVT m³	86	85.1	84.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	28 sx
Lignite	2 sx

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.
2362			15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
6300	152	-	152

2800	82

DEPTH (m)	DEVIATION (°)	DIR

DRILLER'S SIGNATURE: [signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		LENGTH
		m
	D.P. STANDS	m
	D.P. SINGLES	m
	KELLYDOWN	m
	TOTAL	m
	WT. OF DC	(1000 daN)
	WT. OF STRING	(1000 daN)

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T1 | T2 | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.
2362			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
11500	152		152

DEPTH (m)	DEVIATION (°)	DIRE

DRILLER'S SIGNATURE: [signature]

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DAILY CHECKS

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial [illegible]
(3) H2S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible] DAY [illegible]

RIG NO [illegible]

FUEL @ 8:00

RIG 1.16 BOILER

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	189	[illegible]	5.7[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	[illegible]	HW	76	15[illegible]	[illegible]	30	F-1000	[illegible]	254
127	[illegible]	E3	101	156	↓	1[illegible]7	F-1000	[illegible]	254
127	[illegible]	E2	10[illegible]	156		14[illegible]	F-[illegible]	[illegible]	228.6

21	22	23	24	25	26	TOTALS
SAFETY MTG.						

SHALE SHAKER(S)	
NO. / TYPE [illegible]	
SCREENS CHANGED YES NO ✕	
TOP 140	TOP 175
MIDDLE 140	MIDDLE 175
BOTTOM 175	BOTTOM 175

RENTALS SERVICES
T[illegible] 332832
[illegible] 4391
[illegible] 36

MORNING TOUR

RECORD

04:00	0[illegible]:00
1575	1[illegible]
84	84
7.5	7.5
11.5	11.5
83.3	84.9

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3369			15	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
[illegible]	152		152	95

REDUCED PUMP SPEED: [illegible] @ 82 @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
[illegible]	[illegible]		5	Circ & Cond Mud Increase wt. to 1650 kg/m³
[illegible]	[illegible]	½	7	[illegible] Function Remote Choke
[illegible]	[illegible]	1¾	[illegible]	Circ & Cond Mud Mixing [illegible]

NOTES [illegible] Saver, Fast Line Clamp, Deadline Anchor
Boiler Blown Down 3X

DRILLER'S SIGNATURE: [illegible]

8	165	350	65000 daN	Mixing Barite	-32 m³ [illegible]

DAY TOUR

RECORD

12:00	03:00
1670	1670
86	86
7.4	7.5
11.5	11.5
88.1	88.2

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3362			15	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6300	152	-	152	95

REDUCED PUMP SPEED: 2800 @ 82 @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge #4

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1030	2½	5	Circ & Cond mud Raise wt to 1650 kg/m3
1030	1530	5	14	[illegible] Fish Attempt to Bump Fish down.
1530	1600	½	14	Attempt to Jar Fish up. Torque String & Jar up
				Jarring @ 140000 daN, Slack off to 65000 daN

JARRED WITH TOP DRIVE 5½ HRS

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & [illegible]
Boiler Blowndown 3x

DRILLER'S SIGNATURE: [illegible]

8	165 350	140000 daN	Jarring	0 kPa

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3362				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
11500	152		152	85

REDUCED PUMP SPEED: @ @

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1830	2½	14	Jar & Torque String F/3384m-3265m
				Back Ream F/3265m-3295m up to casing.
1830	1945	1¼	5	Circulate and Cond. Work Pipe Flow ✓
1945	2030	¾	6	Lay Down 20 Joints E3 Drill pipe
2030	2115	¾	5	Circ. & Mix up Pill
2115	24:00	2¾	6	Flow ✓ P.O.O.H. Flow ✓ [illegible] 40 stds

JARRED WITH TOP DRIVE 1½ HRS

NOTES ✓ Crown Saver, Fast Line Clamp, Deadline Anchor
Boiler Blown Down 3X

DRILLER'S SIGNATURE: [illegible]

8	165	350			[illegible]

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158613

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually inspect BOP's, Furnaces & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR	MONTH
RIG NO	58
FUEL	
141	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LICENCE NO.:	WELL NAME AND NO.:
OPERATOR:	CONTRACTOR:
SURFACE LOCATION:	UNIQUE ID:
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.		
MORN.					1	7																	
DAY					1	3														3		1½	
EVE.							¼																¼
TOTAL							¼													3		1½	¼

MORNING

DRILLING ASSEMBLY

1			.25 m
1	Bit		.32 m
1			9.23 m
1		114	1.38 m
1		165	13.50 m
1	X/O	114	.49 m
1	HWDP	127	15.11 m
1	JAR	174	5.17 m
23	HWDP	127	211.3 m
			262.1 m
D.P.	STANDS		m
D.P.	SINGLES		m
KELLYDOWN			m
TOTAL			m
WT. OF DC			1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE				B	Gage	ODC	Reason Pulled	Total Run m/hr
I	O	MDC	LOC					

HOLE DRAG	
TORQUE AT BOTTOM	
PULL ON BOTTOM (daN)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RAM CORE-C	ROTARY R.P.M.
2362			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		15

2302

DEPTH (m)	DEVIATION (°)	D

DAY

DRILLING ASSEMBLY

1		1.10 m
1	Bumper Sub	2.52 m
1	Jar	2.46 m
1	X	.51 m
6		56.75 m
1		2.73 m
1	X/O	.49 m
	BHA	66.58 m
D.P.	STANDS	m
D.P.	SINGLES	2306.69 m
KELLYDOWN		10.50 m
TOTAL		2381.70 m
WT. OF DC	8000	1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE				B	Gage	ODC	Reason Pulled	Total Run m/hr
I	O	MDC	LOC					

HOLE DRAG	
TORQUE AT BOTTOM	6000 FT lbs
PULL ON BOTTOM (daN)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RAM CORE-C	ROTARY R.P.M.
2362			15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
5400	152		15

1500

DEPTH (m)	DEVIATION (°)	DIR

EVENING

DRILLING ASSEMBLY

1		1.10 m
1		2.52 m
1	Jar	2.46 m
1	X/O	.51 m
6	159	56.75 m
1		2.73 m
1	X/O	.49 m
	BHA	66.58 m
D.P.	STANDS	m
D.P.	SINGLES	2235.69 m
KELLYDOWN		12.90 m
TOTAL		2380.00 m
WT. OF DC	8000	1000 daN
WT. OF STRING	78000	1000 daN

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE				B	Gage	ODC	Reason Pulled	Total Run m/hr
I	O	MDC	LOC					

HOLE DRAG	4000	6000
TORQUE AT BOTTOM	
PULL ON BOTTOM (daN)	

MUD RECORD

TIME	16:00	20:00	23:30
DENSITY kg/m³	1320	1450	1500
FUNNEL VIS. - (S/L)	75	80	83
W.L. (cm³)	6.4	6.5	7.0
pH	11.5	11.5	11.5
m^3	74.5	77.9	78.9

PRODUCT	AMOUNT X UNIT
Barite	630 sk
	5 sk
Kelzan	2 sk
Biocide	1 pl
	1 pl
	1 pl

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRG. RAM CORE-C	ROTARY R.P.M.
2362			15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
6100	152		152

2800

DEPTH (m)	DEVIATION (°)	DIRE

FOLD HERE →

DAILY CHECKS

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well License & Site Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOP's - Flanges & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills checked		

YEAR	MONTH	DAY
91	2	21

RIG NO: 38

FUEL @ 8:00

RIG: 141 | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	59.81	STSC	HLC	184	2622.87	5.70	2624.50

WEATHER

TEMPERATURE	-2 °C
CURRENT CONDITIONS	
WIND DIRECTION	SW
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F-1000	[illegible]	[illegible]
127	25.07	[illegible]	[illegible]	[illegible]	[illegible]	124	F-1000	FM 500	[illegible]
127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	F-1000	FM 500	[illegible]

SAFETY MTG: [illegible] the [illegible]

TOTALS

SHALE SHAKER(S)

NO	TYPE	
2	[illegible]	
SCREENS CHANGED	YES / NO	
TOP 140	TOP 175	
MIDDLE 140	MIDDLE 175	
BOTTOM 175	BOTTOM 175	

RENTALS SERVICES

1 [illegible] 5384
[illegible] 2207
ACCUM. 36

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	30

2300 | | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
00:00	01:00	1	5	Circ TO [illegible] TOP of FISH @ 2282 m
01:00	[illegible]	7	6	Flow ✓ P.O.H. [illegible]
				Total Length of Fish [illegible] : 65.29 m

4.26 m
Strap [illegible] 10.79 m
[illegible] 11.18 m
[illegible] 11 m

NOTES

8 | 10.5 | 350

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2369			15	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5400	152	—	152	45

1500 | 231 | | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	1000	2	22	Make up Fishing BHA #62
1000	1300	3	6	RIH to 2098m Flow Fill Pipe
1300	1430	1½	23	P/U 20 Joints of E3DP Tag Fish @ 2284.7m
1430	1600	1½	5	Circ. & Cond Mud @ 2281m
				INCREASE MUD WEIGHT TO 1650 kg/m³

NOTES: Crown Saver, Fastline clamp, Deadline Anchor.
Boiler Blown Down 3X

8 | 10.5 | 350 | [illegible] | [illegible] | 2207 kPa

EVENING TOUR

RECORD

20:00	23:30
1450	15:00
80	83
6.5	7.0
11.5	11.5
72.4	78.4

METRES DRILLED

FROM	TO	DRG REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2362			15	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6100	152	—	152	45

2800 | 231 | | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
[illegible]			
0			

TIME LOG

FROM	TO	HRS	CODE	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	2100	5	5	Circulate & Condition mud, Raise MUD WEIGHT
				TO 1650 kg/m³
2100	2115	¼	23	B.O.P. Drill [illegible]
2115	2130	¼	7	RS [illegible] 1950 [illegible]
2130	2400	2½	5	Circulate & Condition mud Raise Weight to 1650

NOTES: ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boiler Blown down 3X. [illegible]

8 | 10.5 | 350 | [illegible] | [illegible] | [illegible]

158612

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LICENCE NO.:	WELL NAME AND NO.:
1300	CANADIAN FOREST ET AL NORTH LIARD C-31

OPERATOR:	CONTRACTOR:
CANADIAN FOREST OIL	AKITA DRILLING LTD
SURFACE LOCATION:	UNIQUE ID.:
300-C31-6080-12330-0	300-C31-6040-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial ✗ — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial — Initial
(3) H²S Signs Posted (if required) — Initial — Initial
(4) Well License & Sock Diagram Posted — Initial — Initial
(5) Flare Lines Staked — Initial — Initial
(6) BOP Drills Performed — Initial — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR | MONTH
RIG NO.
FUEL
RIG 168
WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	W/L SIDE ENTRY	SURFACE	WAIT ON ORDERS
MORN.																			6				2	
DAY							1/4												2 3/4		1/4		4 1/2	3/4
EVE.					3/4														2 1/2			1 1/2	2 3/4	
TOTAL					3/4		1/4												10 3/4		1/4	1 1/2	9 1/4	3/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	LENGTH (m)
1			.25
1	MOTOR	160	6.24
1	FLOAT SUB	163	.75
1	REST SUB	166	.75
1	MWD DC	157	9.76
1	NM EXT SUB	164	1.98
2	NM FLEX	163/162	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	JAR	174	5.67
23	HWDP	127	210.70
			319.61
71	D.P.	STANDS	2035.07
	D.P.	SINGLES	
		KELLYDOWN	3.96
		TOTAL	2349
WT. OF DC		10000	1000 daN
WT. OF STRING		81,000	1000 daN

BIT RECORD

BIT NO.	13m
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	SMITH
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / To / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

LINER SIZE (mm): 152 | S.P.M.

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	LENGTH (m)
1			.25
1	MTR	160	6.24
1	FLOAT SUB	163	.75
1	REST SUB	166	.75
1	MWD DC	157	9.76
1	NM EXT SUB	164	1.98
2	NM FLEX	163/162	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	JAR	174	5.67
23	HWDP	127	210.20
			319.61
71	D.P.	STANDS	2035.07
	D.P.	SINGLES	
IN		KELLYDOWN	3.96
		TOTAL	2349
WT. OF DC		14000	1000 daN
WT. OF STRING		76,000	1000 daN

BIT RECORD

BIT NO.	13m
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	SMITH
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / To / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00
DENSITY kg/m³	1370
FUNNEL VIS. - (S/L)	78
W.L. (cm³)	6.0
pH	12.0
V.V.T	76.9

PRODUCT	AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

LINER SIZE (mm): 152 | S.P.M.

DEPTH (m)	DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	LENGTH (m)
1			.25
1	MTR	160	6.24
1	FLOAT SUB	163	.75
1	REST SUB	166	.75
1	MWD	157	9.76
1	NM EXT SUB	164	1.98
2	NM FLEX	163/162	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	JAR	174	5.67
23	HWDP	127	210.20
			319.61
71	D.P.	STANDS	2035.07
	D.P.	SINGLES	
		KELLYDOWN	5.30
		TOTAL	2349.0
WT. OF DC		19000	1000 daN
WT. OF STRING		[illegible]	1000 daN

BIT RECORD

BIT NO.	13m
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	SMITH
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / To / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	01:00
DENSITY kg/m³	1370
FUNNEL VIS. - (S/L)	67
W.L. (cm³)	6.4
pH	12.0
P.V.in³	73.7

PRODUCT	AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2362			

3970 | LINER SIZE (mm): 152 | S.P.M.

DEPTH (m)	DEVIATION (°)

FOLD HERE →

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial — Initial
(3) H²S Signs Posted (if required) — Initial — Initial
(4) Well License & Stick Diagram Posted — Initial — Initial
(5) Flare Lines Staked — Initial — Initial
(6) BOP Drills Performed — Initial — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR	MONTH	DAY
[illegible]	[illegible]	[illegible]

RIG NO 28

FUEL @ 8:00

RIG 1168 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	71.61	BT & C	HCL	129	2632.87	5.70	2629.50

WEATHER	
TEMPERATURE	−1[illegible] °C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.25	HW	76	158	4½ IF	30	F-1600	F[illegible]CO	254
127	38.07	E3	101	156	↓	127	F-1600	FMSCO	254
127	29.02	E2	108	156		145	F-800	F[illegible]CO	226.[illegible]

SAFETY MTG.	22	23	24	25	TOTALS
	L/D SIDE ENTRY SUB	[illegible]	WAIT ON ORDERS		
		2			
¼		1½	¾		
	1½	2¼			
¼	1½	4¼	¾		24

SHALE SHAKER(S)		
NO. TYPE	FLC	FLC
SCREENS CHANGED ☐ YES ☐ NO		
TOP	140	175
MIDDLE	140	175
BOTTOM	140	175

RENTALS SERVICES

TMI – 6[illegible]
PMJ – 579/28
Accum – 26

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	02:00	2	23	LATCH ON TO AND RECOVER [illegible] TOOL WITH [illegible]
				WIRELINE.
02:00	05:30	3½	19	[illegible] AND RUN IN HOLE W/[illegible] TOOL
				THROUGH SIDE ENTRY SUB.
05:30	08:00	2½	19	BEGIN TRYING TO FIND FREE POINT

NOTES: BRAKES, LINKAGE, FASTLINE CLAMP, DEADMAN ANCHOR, CROWN SAVER
BOILER BLOWDOWN 3X

[signature]

8	KPa	350 °C

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2362				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0845	¾	19	TRY TO FIND FREE POINT
0845	1045	2	23	PULL OUT WIRELINE, CHANGE TOOLS & RUN BACK IN
1045	1115	½	19	TRY TO FIND FREE POINT & COULD NOT GET DOWN
1115	1245	1½	23	PULL OUT WIRELINE & ADD WEIGHT & RIH
1245	1345	1	19	TRY TO FIND FREE POINT 100% FREE @ 2313
1345	1445	1	23	PULL OUT WIRELINE
1445	1500	¼	7	K/S [illegible] REMOTE CHOKE
1500	1545	¾	24	WAIT ON ORDERS
1545	1600	¼	21	Safety MEETING W/CANFISH RADIO SILENCE

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILERS BLOWN DOWN 3X

[signature]

8	105	350°	100 000 daN	FALL ARREST	2201	kPa

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2362				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
3970	152		152	35

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1645	¾	23	RIG UP EXPLOSIVE CHARGE TO SHOOT OFF PIPE
1645	1800	1¼	19	RIH TO SHOOT OFF HWDP & MISRUN
1800	20:30	2½	23	PULL OUT MISRUN CHARGE ON WIRELINE
20:30	21:30	1	19	RIH W/ STRING SHOT #2
21:30	21:45	¼	19	BACK OFF SUCCESSFUL @ 2252.5 WIRE LINE
21:45	23:15	1½	22	PULL PIPE UP TO 2245 m. RETRIEVE
				WIRE LINE AND LAY OUT SIDE ENTRY SUB
23:15	24:00	¾	5	CIRC AND CLEAN TOP OF FISH @ 22[illegible]

NOTES: BRAKES, LINKAGE, FASTLINE CLAMP, DEADMAN ANCHOR, CROWN SAVER
Boiler Blow down 3X

8	10.4	350°	100,000

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158611

LICENCE NO.: 19[illegible]	WELL NAME AND NO.: Canadian Forest FTAL [illegible] C-31	
OPERATOR: Canadian Forest [illegible]	CONTRACTOR: [illegible] LTD	
SURFACE LOCATION: [illegible]	UNIQUE ID.: [illegible]	
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [illegible]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [illegible]	

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial [illegible] — Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist) — Initial [illegible] — Initial
(3) H2S Signs Posted (if required) — Initial [illegible] — Initial
(4) Well License & Stick Diagram Posted — Initial [illegible] — Initial
(5) Flare Lines Staked — Initial [illegible] — Initial
(6) BOP Drills Performed — Initial [illegible] — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial [illegible] — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial [illegible]
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR [illegible] MONTH [illegible]
RIG NO 55

FUEL @ [illegible]
RIG 103

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Work Stuck Pipe	[illegible]	Wash to Bottom
MORN.																						7½		½
DAY																						8		
EVE.																						6½	1½	
TOTAL																								

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25
1	Motor	160	6.29
1	Float Sub	163	.75
1	Rest Sub / Mud Dc	166 / 157	.75 / 9.26
1	NMFEXSub	164	1.98
2	NM Flex	163	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	Jar	174	5.67
23	HWDP	127	210.20
	BHA		319.61
71	D.P.	STANDS	2035.07 m
	D.P.	SINGLES	m
Stick up	KELLYDOWN		5.68 m
	TOTAL		2349.00 m
WT. OF DC		19 000	1000 daN
WT. OF STRING		20 000	1000 daN

BIT RECORD

BIT NO.	13M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Smith
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION — HOLE DRAG: 11 000 ↑ 13 000 ↓ Rotating; TORQUE @ BOTTOM: 7000 - 7000 [illegible]; FILL ON BOTTOM (m):

MUD RECORD — MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	06:00
DENSITY kg/m³	1390
FUNNEL VIS. - (S/L)	65
W.L. (cm³)	6.0
pH	12.0
P.V.T. m³	79.0

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2362			

PUMP: 8.900 | LINER SIZE (mm) 152 | S.P.M. | LINER SIZE 15[illegible]

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25
1	Mtr	160	6.29
1	Float Sub	163	.75
1	Rest Sub / Mud Dc	166 / 157	.75 / 9.26
1	NMFEXSub	164	1.98
2	NM Flex	163	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	Jar	174	5.67
23	HWDP	127	210.20
	BHA		319.61
71	D.P.	STANDS	2035.07 m
	D.P.	SINGLES	m
In	KELLYDOWN		3.96 m
	TOTAL		2349 m
WT. OF DC		19 000	1000 daN
WT. OF STRING		86 000	1000 daN

BIT RECORD

BIT NO.	13M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Smith
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION — HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	13:30
DENSITY kg/m³	1380
FUNNEL VIS. - (S/L)	80
W.L. (cm³)	6.0
pH	12.0
P.V.T. m³	78.4

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2362			

PUMP: LINER SIZE (mm) 152 | S.P.M. | LINER SIZE 15[illegible]

DEPTH (m) | DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	O.D.	Length
1	Bit		.25
1	Motor	160	6.29
1	Float Sub	163	.75
1	Rest Sub / Mud DC	166 / 157	.75 / 9.76
1	NMFEXSub	164	1.98
2	NM Flex	163 / 162	18.38
1	X/O	164	.48
7	HWDP	127	65.60
1	Jar	174	5.67
23	HWDP	127	210.20
	BHA =		319.61
	D.P.	STANDS	2035.07 m
71	D.P.	SINGLES	m
In	KELLYDOWN		3.96 m
	TOTAL		2349 m
WT. OF DC		19 000	1000 daN
WT. OF STRING		21 000	1000 daN

BIT RECORD

BIT NO.	13M
SIZE (mm)	215.9
IADC CODE	4 3 7
MFG.	Smith
TYPE	MF1P
SERIAL NO.	YE9528
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION — HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	2200
DENSITY kg/m³	1380
FUNNEL VIS. - (S/L)	80
W.L. (cm³)	6.0
pH	12.0
P.V.T.	77.9

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2362			

PUMP: LINER SIZE (mm) | S.P.M. | LINER SIZE

DEPTH (m) | DEVIATION (°) | DIR

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY 30

RIG NO.

FUEL @ 8:00

RIG | BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	HLC	194	2632	4.70	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH mm
[illegible]	[illegible]	[illegible]	7[illegible]	[illegible]	[illegible]	[illegible]	F-1000	[illegible]	[illegible]
[illegible]	[illegible]	[illegible] F3	[illegible]	152	↓	[illegible]	F-1000	[illegible]	[illegible]
[illegible]	[illegible]	[illegible] E2	150	[illegible]		14	[illegible]	F-1000	225

SAFETY MTG	WORK STUCK PIPE	[illegible]	WASH TO BOTTOM
7½			½
8			
6½		1½	
			24

SHALE SHAKERS: NO TYPE FLC | FLC; SCREENS CHANGED YES 2 NO; TOP 140 | TOP 175; MIDDLE 140 | MIDDLE 175; BOTTOM 140 | BOTTOM 175

RENTAL: [illegible] - 44 [illegible]; [illegible] - 22440 [illegible]; [illegible]

MORNING TOUR

RECORD | METRES DRILLED: FROM 2362 | TO | DRG RMR CORE-C | ROTARY R.P.M. | WT ON BIT (1000 daN)

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152 | S.P.M. 55; 8.900

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	00:30	½	24	WASH TO ~~[illegible]~~ F/2315 to 2349.
00:30				[illegible] 2349m. [illegible] TORQUE
	08:00	7½	22	[illegible] WORK PIPE @ [illegible]
				JAR PIPE @ 130 000 daN
				INSPECTED DERRICK AFTER JARING

NOTES: BRAKES, LINKAGE, FASTLINE CLAMP, DEADMAN ANCHOR, CROWN SAVER
BOILER BLOWDOWN 3X

[illegible]	105	350	135 000 daN	WORK STUCK PIPE	2432 kPa

DAY TOUR

RECORD | METRES DRILLED: FROM 2362 | TO | DRG RMR CORE-C | ROTARY R.P.M. | WT ON BIT (1000 daN)

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152 | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	16:00	8	22	WORK PIPE w/TORQUE STUCK @ 2349
				ATTEMPT TO GET FREE

NOTES: CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILER BLOWDOWN 3X

[illegible]	105	350	130 000 daN	JARRING W/TOP DRIVE	[illegible] kPa

EVENING TOUR

RECORD | METRES DRILLED: FROM 2362 | TO | DRG RMR CORE-C | ROTARY R.P.M. | WT ON BIT (1000 daN)

LINER SIZE (mm) | S.P.M. | LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	22:30	6½	22	ATTEMPT TO FREE STUCK PIPE @ 2349m
22:30	24:00	1½	23	RIG UP [illegible] WIRELINE, RUN IN TO RETRIEVE
				M.W.D. TOOL.
				INSPECT DERRICK AND BRAKES @ 21:00 HRS
				MONITOR [illegible] & TRIP TANK [illegible] TIMES
				WHEN NOT PUMPING

NOTES: BRAKES, LINKAGE, FASTLINE CLAMP, DEADMAN ANCHOR, CROWN SAVER
BOILER BLOWDOWN 3X

[illegible]	105	350			1981 kPa

159240

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills checked		

YEAR | MONTH | RIG NO. | FUEL | RIG 130 | TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al North Liard 3-31

OPERATOR: Canadian Forest Oil

CONTRACTOR: [illegible]

SURFACE LOCATION: [illegible]

UNIQUE ID.: [illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

	OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	Handle Tools
MORN.			1½				¼	¼			¼												1
DAY			1½	1		14½	3¾	¼															
EVE.							4½			3/4													½ ¼
TOTAL			3	1		14½	8½	½		3/4	¼												1 ½ ¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length
1	Bit		.25
1	Motor Sub	160/113	7.72
1	Float Sub	160/57	.75 / 3.76
1	Shock Sub	114	1.6
2	NMDC	113	18.36
1	X/O	112/110	.44 / .56
1	X/O	110	.36
7	DC	177	65.60
1	Jar	174	5.67
23	DC	177	216.20
		BHA	326.49
71	D.P.	STANDS	
	D.P.	SINGLES	2030.78
Stick up		KELLYDOWN	14.77
		TOTAL	2340.00
WT. OF DC			19000
WT. OF STRING			87000

BIT RECORD

BIT NO.	12M
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3 x 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	58
TOTAL HOURS RUN	45

CUTTING STRUCTURE: T | T | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Rev m/hr

HOLE DRAG: 11000 ↑ 13000 ↓ [illegible]

TORQUE AT BOTTOM: 7000 - [illegible] ft lbs

FILL ON BOTTOM (m): —

MUD RECORD

TIME	02:00	04:30	06:30
DENSITY kg/m³	1360	1360	1360
FUNNEL VIS. - (S/L)	73	70	68
W.L. (cm³)	7.7	7.3	6.5
pH	12.0	12.0	12.0
P. Vol m³	81.0	80.5	80.2

PRODUCT	AMOUNT X UNIT
Barcide	1 PL
Corrosion	1 PL
Aktimer 1301	2 PLS
Sodium Sulfite	1 Sx
Drispac	2 + 1 Sx
Starpak	2 + 1 Sx
Lignite	2 + 2 Sx

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

Centrifuge #2

METRES DRILLED

FROM	TO	DRILL RATE	ROTARY R.P.M.
2350	2360	10	30 / Motor 100

Pump: 10400 | 152 | 153

4900 | 354

DEPTH (m)	DEVIATION (°)
2346.42	3.3°

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

D.P. STANDS | D.P. SINGLES | KELLYDOWN | TOTAL | WT. OF DC | WT. OF STRING

BIT RECORD

BIT NO.	12M
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3 x 12.7
DEPTH OUT (m)	2362
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	60
TOTAL HOURS RUN	46½

T	T	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Rev m/hr
2	4	BT	H	F	2	CT	HR	1.3

HOLE DRAG: 11000 ↑ 12000 ↓ [illegible]

TORQUE AT BOTTOM: 7000 - [illegible] ft lbs

FILL ON BOTTOM (m):

MUD RECORD

TIME	08:00	10:00
DENSITY kg/m³	1360	1360
FUNNEL VIS. - (S/L)	71	70
W.L. (cm³)	6.2	6.2
pH	11.5	11.5
P. Vol m³	71.3	71.3

PRODUCT	AMOUNT X UNIT
Baroid (?) Barite	70 Sx
Lignite	1 Sx

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

Centrifuge

METRES DRILLED

FROM	TO	DRILL RATE	ROTARY R.P.M.
2360	2362	2	30 / Motor 100

Pump: 9800 | 152 | 152

DEPTH (m) | DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	OD	Length
1	Bit		.25
1	Motor / Float Sub	160/113	6.23
1	Bit Sub / Float Sub	160/57	.75 / 3.76
1	Shock Sub	114	1.48
2	NMDC	113	18.38
1	X/O	114	.48
7	DC	177	65.60
1	Jar	174	5.67
23	DC	177	216.26
		BHA	319.61
19	D.P.	STANDS	1977.45
3	D.P.	SINGLES	19.26
[illegible]		KELLYDOWN	-1.35
		TOTAL	2315
WT. OF DC			17000
WT. OF STRING			6[illegible]0

BIT RECORD

BIT NO.	13M
SIZE (mm)	215.9
IADC CODE	437
MFG.	Smith
TYPE	MF15
SERIAL NO.	YE9586
JETS (mm)	3 x 14.3
DEPTH OUT (m)	
DEPTH IN (m)	2362
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T | T | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Rev m/hr

HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (m)

MUD RECORD

TIME | DENSITY kg/m³ | FUNNEL VIS. - (S/L) | W.L. (cm³) | pH

PRODUCT | AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRILL RATE	ROTARY R.P.M.
2362			

Pump: 9800 | 152 | 152

4900 | 354

DEPTH (m) | DEVIATION (°)

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's, Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5)		Initial

YEAR MONTH DAY

RIG NO.

FUEL @ 8:00

RIG 130 BOILER

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]								

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS
127	29.02	[illegible]				
127	[illegible]	[illegible]				127
127	[illegible]					144

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
F-[illegible]	EMSCO	[illegible]
F-[illegible]	EMSCO	[illegible]
F-[illegible]	EMSCO	[illegible]

SAFETY MTG. [illegible]

1

1/2 1/4

1 1/2 1/4

TOTALS 24

NO TYPE	FLC	FLC
SCREENS CHANGED	YES	NO
TOP	110	175
MIDDLE	140	175
BOTTOM	140	175

T[illegible] MT = 41

Accum MT = 578470

[illegible] = 36

RECORD — MORNING TOUR

04:30	06:30
1360	1360
70	68
7.3	6.5
12.0	12.0
80.5	80.2

METRES DRILLED

FROM	TO	[illegible]	ROTARY RPM	WT ON BIT
2350	2360	10	30	13
			100	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10400	152		152	85

4900 354 50

DEPTH (m)	DEVIATION (°)	DIRECTION
2346.42	[illegible]	2[illegible]

Centrifuge #2

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

[illegible]	[illegible]	3/4	2	Drill [illegible]
[illegible]		1/4		[illegible]
[illegible]		1	22	[illegible] tight hole
[illegible]		1/4		[illegible] 2346m [illegible]
[illegible]		1/4		[illegible] 2346.42 [illegible]
[illegible]		2	2	Drill [illegible] 2360 [illegible]

Transfered 1.4 m³ of Prehydrated Gel To Active

[illegible] ↑ 17 ↓ 14

[illegible] #2

NOTES [illegible] Saver

[illegible] 2432

RECORD — DAY TOUR

10:00
1360
70
6.2
11.5
74.3

METRES DRILLED

FROM	TO	[illegible]	ROTARY RPM	WT ON BIT
2360	2362	2	30	13
			MTR 100	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9800	152		152	85

DEPTH (m)	DEVIATION (°)	DIRECTION

0

Centrifuge

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	0930	1 1/2	2	Drill 2360m - 2362m Rotate
0930	1100	1 1/2	5	Circulate bottoms up & circ. hole clean
1100	1115	1/4	7	R/S [illegible]
1115				Back ream [illegible] - 2301 [illegible]
	1215	1	3	Back ream [illegible] to 2301
1215				[illegible] pump [illegible] Kelly hose
	1600	3 3/4	6	POOH [illegible]

Trip [illegible] 11.14 [illegible] Diff. .11

[illegible]

NOTES [illegible]

[illegible] 3X

[illegible] 350 105 000 [illegible] Tripping 2432

RECORD — EVENING TOUR

METRES DRILLED

FROM	TO	[illegible]	ROTARY RPM	WT ON BIT
2362				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9800	152		152	85

4900 354 50

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	1700	1	6	POOH from 360m flow [illegible] out of hole
1700	1730	1/2	23	Change bit & check MWD tool
1730	1900	1 1/2	6	RIH to 356m
1900	2230	3 1/2	6	Test MWD tool [illegible]
				[illegible]
2230	2245	1/4	9	[illegible] drill line
2245	2300	1/4		RIH [illegible]
2300	2400	1/4	24	[illegible]

NOTES [illegible]

[illegible] 2432

159239

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LICENCE NO.:	WELL NAME AND NO.:
140[illegible]	[illegible]

OPERATOR:	CONTRACTOR:
[illegible]	[illegible]

SURFACE LOCATION:	UNIQUE ID.:
[illegible]	[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]
SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial / Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial / Initial
(3) H2S Signs Posted (if required) — Initial / Initial
(4) Well License & Stick Diagram Posted — Initial / Initial
(5) Flare Lines Staked — Initial / Initial
(6) BOP Drills Performed — Initial / Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial / Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR | MONTH
RIG NO.
FUEL @ 8
RIG 158 | BOILER

WEATHER: TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

TIME - HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	[illegible]
MORN.		4				3	¼			½												¼
DAY		7½								½												
EVE.		7½					¼															
TOTAL		21½					½			1												1¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		OD	LENGTH
1	[illegible]		.25 m
1	[illegible]		[illegible] m
1	[illegible]		[illegible] m
1	NMC[illegible]		1.75 m
2	NMDC	1[illegible]	18.95 m
1	[illegible]	160	.44 m
1	X/o	156	.36 m
7	HWDP	127	65.6 m
1	JAR	174	5.67 m
23	HWDP	127	216.26 m
	BHA		330.48
70	D.P. STANDS		2015.53 m
1	D.P. SINGLES		7.55 m
	KELLY [illegible]		[illegible] m
	TOTAL		2377.00 m
	WT. OF DC		17 000
	WT. OF STRING		21 000

BIT RECORD

BIT NO.	12M
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3 X 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED	2377/75
TOTAL HOURS RUN	23¼
CUTTING STRUCTURE T / T2 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr	
HOLE CONDITION	
HOLE DRAG	14 000 ↑ 2000 ↓
TORQUE AT BOTTOM	[illegible]
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1350	1350	1350
FUNNEL VIS. - (S/L)	60	56	55
W.L. (cm³)	7.8	7.5	7.5
pH	11.5	11.0	11.0
P.V.T. m³	90.3	91.0	91.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Cosmos	1 PL
Sod. S.[illegible]	3 sxs
Akmer [illegible]	2 PLS
Drispak	3 sxs
Starpak	3 sxs
Lignite	8 sxs
Soda Ash	1 sx

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRD R-RM CORE-C	ROTARY R.P.M.
2315	2327	[illegible]	30 MOTOR 160

PUMP	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10200	152		1[illegible]
4400		321	

DEPTH (m) | DEVIATION (°) | DIRECTION

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		OD	LENGTH
1			.25 m
1	[illegible]	160	[illegible] m
1	[illegible]		.75 m
1	[illegible]		4.86 m
1	[illegible]	163	1.55 m
2	[illegible] DC	163	18.96 m
1	[illegible]	160	.46 m
1	X/o	156	.36 m
7	HWDP	127	65.60 m
1	JAR	174	5.67 m
23	HWDP	127	216.26 m
	BHA		344.69
70	D.P. STANDS		
XX	D.P. SINGLES		2025.37 m
	Stick Up		6.36 m
	TOTAL		2339 m
	WT. OF DC		16000
	WT. OF STRING		83000

BIT RECORD

BIT NO.	18M
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3X12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED	37
TOTAL HOURS RUN	30¾
CUTTING STRUCTURE	
HOLE DRAG	18000 ↑ 7000 ↓ Rotating
TORQUE AT BOTTOM	7000 - 9000 [illegible]
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	08:00	10:00	12:00
DENSITY kg/m³	1345	1340	1340
FUNNEL VIS. - (S/L)	62	65	68
W.L. (cm³)	7.5	8.0	8.0
pH	11.5	11.5	11.0
P.V.T. m³	91.5	92.1	82.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
GEL	30 sxs
Barite	57 sx
[illegible]	[illegible]
Biocide	1 [illegible]
[illegible]	1 [illegible]
[illegible]	2 PL
[illegible]	1 sx
Lignite	2 sx

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
3	1340	1020	1810

CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRD R-RM CORE-C	ROTARY R.P.M.
2327	2339	12	30 MTR SLIDING 160

PUMP	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
9600	152	85	15[illegible]
4500		50	

DEPTH (m)	DEVIATION (°)	DIRECTION
2312.88	7.9	
2322.32	9.1	2[illegible]

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		OD	LENGTH
1			.25 m
1	[illegible]		.75 m
1	[illegible]	177	[illegible] m
1	[illegible]	157	1.76 m
2	NMDC	163	18.98 m
1	[illegible]	160	.26 m
1	X/o	156	.36 m
7	HWDP	127	65.60 m
1	JAR	174	5.67 m
23	HWDP	127	216.26 m
	BHA =		330.48
71	D.P. STANDS		7020.97 m
—	D.P. SINGLES		
	Stick-up KELLYDOWN		[illegible] m
	TOTAL		2350 m
	WT. OF DC		17000
	WT. OF STRING		[illegible]

BIT RECORD

BIT NO.	18M
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3X12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED	48
TOTAL HOURS RUN	38¼
CUTTING STRUCTURE	
HOLE DRAG	[illegible] Rotating
TORQUE AT BOTTOM	7000 - [illegible]
FILL ON BOTTOM (m)	[illegible]

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	18:00	20:00	23:00
DENSITY kg/m³	1355	1360	1360
FUNNEL VIS. - (S/L)	68	61	64
W.L. (cm³)	7.5	7.0	8.0
pH	11.5	12.0	12.0
P.V.T. m³	71.0	79.3	80.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
[illegible]	1 sx
[illegible]	3 sx
[illegible]	1 sx
[illegible]	1 sx
Kelzan	1 sx
Soda Ash	4 sx

SOLIDS CONTROL

CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRD R-RM CORE-C	ROTARY R.P.M.
2339	2350	11	30 SLIDE 160

PUMP	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10200	152		152
4400		343	

DEPTH (m)	DEVIATION (°)	DIRECTION
2331.32	7.8°	7[illegible]

DRILLER'S SIGNATURE

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial
(3) H2S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stack Diagram Posted	Initial [illegible]	Initial
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY

RIG NO

FUEL @ 8:00

RIG 153 | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	29.4

WEATHER

TEMPERATURE	- °C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O D (mm)	TYPE THREAD	NO OF JOINTS
[illegible]	24.24	[illegible]	71	15[illegible]	4½ IF	
[illegible]	2[illegible].27	E[illegible]	[illegible]	156		
1[illegible]	29.22	E-2	108	156		

PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
F-1000	[illegible]	254
F-1000	[illegible]	254
F-800	[illegible]	225

	SAFETY MTG.	22	23	24	25	26
	[illegible]					
	14					
	1¼					

TOTALS

SHALE SHAKER(S)		
NO. TYPE	FLC	FLC
SCREENS CHANGED	YES	✓NO
TOP	140	125
MIDDLE	140	125
BOTTOM	140	125

RENTALS SERVICES

[illegible] 7131
[illegible] 33117
[illegible] 36

MORNING TOUR

RECORD

04:00	06:00
1350	1350
56	55
7.5	7.5
11.0	11.0
91.0	91.2

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
23[illegible]	[illegible]	29	30	12
			MOTOR 170	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10000	152		152	85

REDUCED PUMP SPEED

4400 @ 3[illegible] @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
[illegible]	[illegible]	5	2	DRILL F/[illegible] - 2325m
[illegible]	[illegible]	1¼	7	[illegible] 2323 [illegible]
[illegible]	[illegible]	¼	7	[illegible]
[illegible]	[illegible]30	[illegible]	2	[illegible] 2327m
[illegible]30	08[illegible]	½	[illegible]	[illegible]
				[illegible]
				[illegible] KPA

NOTES [illegible] CROWN SAVER
BOILER [illegible] 3X

DRILLER'S SIGNATURE [illegible]

185	105 350	105000	[illegible]	7[illegible]5E KPA

DAY TOUR

RECORD

10:00	12:00
1340	1340
65	68
8.0	8.0
11.5	11.0
92.1	82.2

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2327	2339	12	30	15
		SLIDING	MTR 100	15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9600	152	85	152	

REDUCED PUMP SPEED

4500 @ 50 @ [illegible]

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2312.58	7.7	
2320.32	9.1	258.5

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
3	1340	1020	1870

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	0815	¼	10	SURVEY @ 2312.58m
0815	1500	6¾	2	DRILL 215.9mm HOLE FROM 2327m - 2337m KB
1500	1515	¼	10	SURVEY @ 2320.32
1515	1600	¾	2	SLIDE DRILL F/2337m - 2339m
				OFF BTM TORQUE 6000 - 7000 FT LBS
				HOLE DRAG NON ROTATING ↑[illegible] 8000↓

NOTES ✓CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILER BLOWN DOWN 3X

DRILLER'S SIGNATURE [illegible]

8	105 350	102000 daN	DRILL FLOOR [illegible]	2[illegible] KPA

EVENING TOUR

RECORD

20:00	23:00
1360	1360
61	64
7.0	8.0
12.0	12.0
79.3	80.7

METRES DRILLED

FROM	TO	DRLD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2339	2350	11	30	12
		SLIDE	100	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10200	152		152	85

REDUCED PUMP SPEED

4400 @ 34[illegible] @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION
2331.92	7.2°	255.4

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE 2

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG

FROM	TO	ELAPSED TIME	CODE NO.	DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	1630	½	2	SLIDE DRILL 2339m - 2340m
1630	2000	3½	2	DRILL 215.9mm HOLE F/2340m - 2346m KB
2000	2015	¼	7	K/S FUNCTION ANNULAR 20 SEC CLOSE/OPEN
2015	2400	3¾	2	SLIDE DRILL F/2346m - 2350m
				HOIST NON ROTATING ↑17000 ↓16000
				OFF BOTTOM PRESSURE 9300 kPa [illegible] # 2

NOTES [illegible] DEADMAN ANCHOR, [illegible]
Boiler Blow down 3x

DRILLER'S SIGNATURE

[illegible]	105 350	102[illegible]	F.F.E	2432

FOLD HERE →

159238

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | RIG NO.

FUEL @ 8

RIG 1C7cm

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.:

WELL NAME AND NO.:

OPERATOR:

CONTRACTOR:

SURFACE LOCATION:

UNIQUE ID.:

SIGNATURE OF OPERATOR'S REPRESENTATIVE:

SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

CODE NO.	1 OPER.	2 RIG UP & TEAR DOWN	3 DRILL ACTUAL	4 REAMING	5 CORING	6 COND. MUD & CIRC.	7 TRIPS	8 RIG SERVICE	9 REPAIR RIG	10 CUT OFF DRILL LINE	11 DEV SURVEY	12 WIRE LINE LOGS	13 RUN CASE & CEMENT	14 WAIT ON CEMENT	15 NIPPLE UP B.O.P.	16 TEST B.O.P.	17 DRILL STEM TEST	18 PLUG BACK	19 SQUEEZE CEMENT	20 FISHING	21 DIR. WORK	22 SAFETY MTG.	
MORN.								1/4													7/4		1
DAY			4½																				3¼
EVE.			6					1/4															1¾
TOTAL			10½					½													6¾		6¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1			.75 m
1		162	9.26 m
1	NM PIT...	164	1.98 m
2	NM DC	163	16.28 m
1			.56 m
1		161	.36 m
7		127	65.60 m
1	JAR	174	5.67 m
23	HWDP	127	210.20 m
	BHA		320.49
69	D.P.	STANDS	1977.40 m
X	D.P.	SINGLES	m
	KELLY DOWN		9.08 m
	TOTAL		2307 m
WT. OF DC		10000	1000 daN
WT. OF STRING		61000	1000 daN

BIT RECORD

BIT NO.	12 m
SIZE (mm)	
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	6¾

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG	2000 up / 1000
TORQUE AT BOTTOM	—
FILL ON BOTTOM (m)	—

MUD RECORD — MUD TYPE: WATER BASED / OIL BASE

TIME	01:30	03	06:30
DENSITY kg/m³	1360	1	1360
FUNNEL VIS. - (S/L)	60		55
W.L. (cm³)	7.5	7.5	7.5
pH	11.0	11.0	11.0
	79.1	79.4	82.9

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Sod Sulfite	2 sxs
Coilnex	1 PL
Biocide	1 PL
	1 PL
Sulfamic Acid	1 sx
Starpak	1 SX
Drispac	1 sx
Ilmenite	2 sxs

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

HOURS RUN 0

METRES DRILLED

FROM	TO	DRD-R-R CORE-C	ROTARY R.P.M.
2302	2307	5	—

PUMP: LINER SIZE (mm) 152 | S.P.M. 85

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	MOTOR	170	m
1		163	.75 m
1		167	9.26 m
1	NM PITS	164	1.98 m
9	NM DC	163	16.38 m
1		110	.56 m
1	X/O	161	.36 m
7	HWDP	127	65.60 m
1	JAR	174	5.67 m
23	HWDP	127	210.20 m
			330.49 m
69	D.P.	STANDS	m
XX	D.P.	SINGLES	1976.74 m
	KELLY DOWN		5.23 m
	TOTAL		2312 m
WT. OF DC			1000 daN
WT. OF STRING		67000	1000 daN

BIT RECORD

BIT NO.	12 M
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3X 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	10
TOTAL HOURS RUN	11¼

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG	Boost 9000 k Sliding
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASE

TIME	11:00	13:00	15:00
DENSITY kg/m³	1370	1370	1360
FUNNEL VIS. - (S/L)	59	59	61
W.L. (cm³)	10.2	10.0	8.0
pH	12.0	12.0	12.0
	81.1	81.5	84.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Biocide	1 pl
Coilnex	1 pl
Gel	15 sx
Sulfite	15 x
	25 x
Starpak	2 sx
	35 sx
	2 sx

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

HOURS RUN 0 — CENTRIFUGE

HOURS RUN 0

METRES DRILLED

FROM	TO	DRD-R-R CORE-C	ROTARY R.P.M.
2307	2312	5	

PUMP: 9600 | LINER SIZE (mm) 152 | S.P.M.

DEPTH (m) | DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1			.75 m
1		167	9.26 m
1	NM PITS	161	1.98 m
2	NM DC	163	16.38 m
1	X/O	110	.56 m
1	X/O	156	.36 m
7	HWDP	127	65.60 m
1	JAR	179	5.67 m
23	HWDP	127	210.20 m
70	D.P.	STANDS	m
—	D.P.	SINGLES	m
	KELLY DOWN		8.88 m
	TOTAL		2318.00 m
WT. OF DC		11000	1000 daN
WT. OF STRING		67000	1000 daN

BIT RECORD

BIT NO.	12 M
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	XV
SERIAL NO.	133054
JETS (mm)	3X 12.7
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	16
TOTAL HOURS RUN	17¼

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION

HOLE DRAG	1400 ↑ 2000 ↓
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	—

MUD RECORD — MUD TYPE: WATER BASED / OIL BASE

TIME	18:00	20:00	23:30
DENSITY kg/m³	1350	1350	1350
FUNNEL VIS. - (S/L)	58	60	60
W.L. (cm³)	8.5	8.5	9.5
pH	12.0	11.5	11.5
	85.5	89.4	89.7

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD-R-R CORE-C	ROTARY R.P.M.
2312	2318	6	

PUMP: 9600 | LINER SIZE (mm) 152 | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

FOLD HERE →

DAILY CHECKS

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY 7

RIG NO

FUEL @ 8:00

RIG | BOILER

WEATHER: TEMPERATURE °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING TUBING OR LINER

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG. HEAD (m)	SET AT (m)

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.25	H.W.	76				F-1000	EMSCO	254
127	29.01	E		156		13	F-1000	EMSCO	254
127	29.02	E	105	156		14	F-1000	EMSCO	254

SAFETY MTG. Gyro

3½ · 1¾ · CH

SHALE SHAKER(S)

NO TYPE FLC FLC

SCREENS CHANGED YES X NO

TOP | TOP

MIDDLE | MIDDLE

BOTTOM | BOTTOM

RENTALS SERVICES

TMT

36

MORNING TOUR

MUD RECORD

03:30	06:30
1370	1360
55	55
9.5	9.5
11.0	11.0
79.4	82.1

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2302	2307	5	—	2

LINER SIZE (mm) 152 | SPM | LINER SIZE (mm) 152 | SPM

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

0

0

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

		¼	7	R/S [illegible] 15 [illegible]
			20	[illegible]
			22	[illegible]

NOTES

DAY TOUR

RECORD

13:00	15:00
1370	1360
59	61
10.0	8.0
12.0	12.0
81.5	84.2

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT
2307	2312	5		

9600 | 152 | | 152 | 85

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

0

CENTRIFUGE

0

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	1115	3¼	22	[illegible] W/GYRO [illegible] RIH W/GYRO
1115	1545	4½	2	DRILL 2307m - 2312m
1545	1600	¼	22	ACCUMULATED TIME TO [illegible] GYRO

NOTES [illegible]

8 | 105 350 | 105 000 daN | [illegible]

EVENING TOUR

MUD RECORD

20:00	23:30
1350	1350
60	60
9.5	9.5
11.5	11.5
89.4	89.7

METRES DRILLED

FROM	TO	DRLD REAM CORE	ROTARY R.P.M.	WT. ON BIT
2312	2318	6		

9600 | 152 | | 152 | 85

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

0

CENTRIFUGE #2

0

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	21:30	5½	2	DRILL 2312m - 2317m [illegible]
21:30	23:15	1¾	22	[illegible]
23:15	23:30	¼	7	[illegible]
23:30		½	2	DRILL [illegible] 2317m - 2318m

NOTES [illegible]

DRILLER'S SIGNATURE

159237

LICENCE NO.	WELL NAME AND NO.
OPERATOR	CONTRACTOR
SURFACE LOCATION	UNIQUE ID
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER

DAILY CHECKS — OPR. — R.M.

YEAR — MO. — ON NO. — FUEL — 139 — TEMPERATURE — CURRENT CONDITIONS — WIND DIRECTION — ROAD

OPER				
MORN				
DAY		4		
EVE		1¼ 9		
TOTAL				

Morning tour

TIME	0000 — 04:30
DENSITY kg/m³	1345 — 1350
FUNNEL VIS. (S/L)	56 — 58
WL (cm³)	9.0 — 9.0
pH	11.0 — 11.0 — 11.0
	81.4 — 81.3 — 82.5

PRODUCT — AMOUNT X UNIT

70 — D.P. — STANDS 2000.11 — D.P. SINGLES — KELLYDOWN — TOTAL — WT. OF D.C. — WT. OF STRING

BIT NO. — SIZE — IADC CODE — MFG. Hughes — TYPE — SERIAL NO. — JETS — DEPTH OUT — DEPTH IN — TOTAL METRES DRILLED — TOTAL HOURS RUN — CUTTING STRUCTURE — HOLE DRAG — TORQUE AT BOTTOM — P/U OFF BOTTOM

FROM — TO — ROTARY RPM — 2300 — LINER SIZE mm — SPM — 4000 — 152 — 65 — DEPTH (m) — DEVIATION (°)

Day tour

	Bit	Bit
BIT NO.	Bit 6	Bit
SIZE	215.9	151
MFG.	Hughes	Hughes
TYPE		XV
SERIAL NO.		133C54
JETS	3x 14.3	3x 14.3
DEPTH OUT	1338	
DEPTH IN	1330	1338
TOTAL METRES DRILLED	8	
TOTAL HOURS RUN	1¾	

CUTTING STRUCTURE: 2 3 ST 6 E I CT 3PI

TIME	0200
DENSITY kg/m³	1375
pH	11.5
	81.3

PRODUCT — AMOUNT X UNIT

WT. OF D.C. — 8000

FROM — TO — 2300 — 4000 — 152 — 65 — DEPTH (m) — DEVIATION (°) — DIRECTION

Evening tour

BIT NO.	Bit
SIZE	151
MFG.	Hughes
TYPE	XV
SERIAL NO.	133C54
JETS	3x 14.7
DEPTH IN	1338
TOTAL METRES DRILLED	0
TOTAL HOURS RUN	0

TIME	20:30
DENSITY kg/m³	1345
FUNNEL VIS. (S/L)	78
WL (cm³)	9.0
pH	11.0
	81.9

PRODUCT — AMOUNT X UNIT

FROM — TO — ROTARY RPM — 2300 — LINER SIZE mm — SPM — 1100 — 152 — 65 — 4200 — 51 — DEPTH (m) — DEVIATION (°) — DIRECTION

D.P. — STANDS — D.P. — SINGLES — KELLYDOWN — TOTAL — WT. OF D.C. — WT. OF STRING — HOLE DRAG — TORQUE AT BOTTOM — P/U OFF BOTTOM

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
1) Daily Walk Around Inspection		
2) Derrick Inspection		
3) H₂S Alarms Posted		
4) Well Location & Mud Diagram Posted		
5) Pipe Limits Stated		
6) BOP Drills Performed		
7) Visually Inspect BOP's - Fastenings & Degasser Lines		
1) Rig Site Health and Safety Meeting		
2) C.A.O.D.C. Rig Safety Inspection Checklist		
3) Mast Inspection		
4) Crown Saver Checked		
5) Motor Kills Checked		

YEAR	MONTH	DAY
[illegible]	[illegible]	[illegible]

RIG NO 28

FUEL @ 8:00

RIG 139 BOILER

WEATHER	
TEMPERATURE	[illegible] °C
CURRENT CONDITIONS	[illegible]
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D (mm)	MIN I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]			[illegible]	[illegible]	29	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]	7435	[illegible]	[illegible]	[illegible]	[illegible]				[illegible]
[illegible]	[illegible]	E	[illegible]		✓				[illegible]
[illegible]	[illegible]	E	[illegible]					8 [illegible]	256

SAFETY MTG

						TOTALS
	½	¼				
			2			
			2½		¼	
	2½	¼	12[illegible]	½	¼	24

SHALE SHAKER(S)			
NO. TYPE			
SCREENS CHANGED	YES	NO	
TOP 140	TOP 175		
MIDDLE [illegible]	MIDDLE 175		
BOTTOM 140	BOTTOM 175		

RENTALS SERVICES

AMT - 1514

AMT - 059107

[illegible] M [illegible] 33

RECORD

22:00	04:30
1345	1352
52	5[illegible]
2.0	9.5
11.0	11.0
31.3	8[illegible]5

MORNING TOUR

METRES DRILLED

FROM	TO	DRLG TIME CORE	ROTARY R.P.M	WT ON BIT (1000 daN)
[illegible]				
1352	1352	2		

PRESSURE	LINER SIZE (mm)	S.P.M	LINER SIZE (mm)	S.P.M
4[illegible]	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
[illegible]	[illegible]	[illegible]	12	[illegible] ON CEMENT
		2		[illegible]
				[illegible]
		1		[illegible]
		½		[illegible]
7		¼	7	[illegible]
				~~[illegible]~~
				~~[illegible]~~
0730	0800	½	14	FLUSH [illegible] @ 1352 m [illegible]
				TRANSFERED 2.4 m³ of GL to Active

NOTES [illegible]

[illegible] X

[illegible]

DAY TOUR

METRES DRILLED

FROM	TO	DRLG TIME CORE	ROTARY R.P.M	WT ON BIT (1000 daN)
1352				

PRESSURE	LINER SIZE (mm)	S.P.M	LINER SIZE (mm)	S.P.M
4100	152	85	152	

DEPTH (m)	DEVIATION (°)	DIRECTION
TRIP [illegible]		
CAL - [illegible] m³		
[illegible] - [illegible] m³		
[illegible] - [illegible]		

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0900	1	5	CIRC. BOTTOMS UP
0900	1300	4	6	[illegible] POOH [illegible] 535 [illegible]
1300	1345	¾	24	LAY DOWN 159mm DCS
1345	1400	¼	7	CK FUNCTION BLIND RAMS, [illegible] CK
1400	1600	2	24	[illegible] DIRECTIONAL BHA [illegible]

NOTES CROWN SAVER, [illegible] [illegible]

DRILLERS [illegible] 3X

6 | 10.5 | 350 | 40 000 | [illegible] FUEL | 2770 [illegible]

EVENING TOUR

METRES DRILLED

FROM	TO	DRLG TIME CORE	ROTARY R.P.M	WT ON BIT (1000 daN)
1352				

PRESSURE	LINER SIZE (mm)	S.P.M	LINER SIZE (mm)	S.P.M
4100	152	85	152	
4200		51		42

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG / DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2300	7	5	RIH. TO 347m TEST [illegible] FILL PIPE EVERY [illegible]
[illegible]	[illegible]	1¼	5	CIRC TILL GAS FREE. @ 2240 m.
2115	2400	2¾	25	[illegible]
				[illegible]
				[illegible]
		¼		[illegible]

NOTES TONGS, LINKAGE, [illegible], CROWN SAVER

[illegible]

5 | 145 | 32 [illegible] | | [illegible] | NA

FOLD HERE →

159236

LICENCE NO.	WELL NAME AND NO.	
[illegible]	[illegible]	
OPERATOR	CONTRACTOR:	
SURFACE LOCATION	UNIQUE ID	
[illegible]	[illegible]	
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:	
[illegible signature]	[illegible signature]	

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial ___ Initial ___
(2) Detailed Inspection-Weekly (using checklist) — Initial ___ Initial ___
(3) H_2S Signs Posted (if required) — Initial ___ Initial ___
(4) Well License & Stick Diagram Posted — Initial ___ Initial ___
(5) Flare Lines Staked — Initial ___ Initial ___
(6) BOP Drills Performed — Initial ___ Initial ___
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial ___ Initial ___

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial ___
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/month) — Initial ___
(3) Mast Inspection Before Raising or Lowering — Initial ___
(4) Crown Saver Checked — Initial ___
(5) Motor Kills checked — Initial ___

YEAR | MONTH
RIG NO. [illegible]
FUEL @ 8:[illegible]
RIG 1.46 BOILER
WEATHER: TEMPERATURE — | CURRENT CONDITIONS | WIND DIRECTION | ROAD ICY

OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	BOP Drill
MORN					23	3¼					½											
DAY					1	6¾																
EVE													7¾								¼	
TOTAL					4½	11½					½		7¾								¼	

MORNING TOUR

DRILLING ASSEMBLY

1	S[illegible]		1.86 m
30	[illegible]		199.33 m
1	X/O		.57 m
74	D.P.	STANDS	
2	D.P.	SINGLES	[illegible].49 m
	KELLYDOWN		m
	TOTAL		2330.19 m
	WT. OF DC		
	WT. OF STRING		74000

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		
CUTTING STRUCTURE T, T, MDC LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.		
HOLE DRAG		
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)		

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	02:00
DENSITY kg/m³	1335
FUNNEL VIS. - (S/L)	70
W.L. (cm³)	9.2
pH	10.5
P.G. ..3	74.0

PRODUCT	AMOUNT X UNIT
Al. Defoam	1 pl

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0 (Centrifuge)			

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.
2330			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
5500	152	—	152
2500		33[illegible]	

DEPTH (m)	DEVIATION (°)	DIR

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY

1			.25 m
1	[illegible]	172	1.4[illegible] m
3	[illegible]	172	25.3[illegible] m
1	X/O	177	.5 m
7	[illegible]	127	[illegible] m
1	Jar	177	[illegible] m
23	[illegible]	127	21[illegible] m
		[illegible]	311.94 m
63	D.P.	STANDS	21[illegible].27 m
—	D.P.	SINGLES	m
	KELLYDOWN		11.26 m
	TOTAL		2100.[illegible] m
	WT. OF DC		[illegible]
	WT. OF STRING		[illegible]

BIT RECORD

BIT NO.	11 [illegible]	
SIZE (mm)	[illegible]	
IADC CODE	[illegible]	
MFG.	[illegible]	
TYPE	[illegible]	
SERIAL NO.	[illegible]	
JETS (mm)	3 x 12.7	
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		
CUTTING STRUCTURE T, T, MDC LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.		
HOLE DRAG	[illegible]	
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)	—	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0 (CENTRIFUGE)			

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.
2330			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
8500	152		152
3100		100	

DEPTH (m)	DEVIATION (°)	DIR
[illegible] 2020	MEAS	[illegible]
	[illegible]	
	DIFF	+7

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY

1			.25 m
1	Bit Sub	158	1.44 m
3	DC's	158	28.38 m
1	X/O	157	.65 m
7	[illegible]	157	65.60 m
1	JAR	172	5.67 m
23	[illegible]	127	210.9[illegible] m
		Total	30[illegible].94 m
43	D.P.	STANDS	2117.27 m
	D.P.	SINGLES	
	KELLYDOWN		11.26 m
	TOTAL		2100.00 m
	WT. OF DC		[illegible]
	WT. OF STRING		8[illegible]

BIT RECORD

BIT NO.	11 RR	
SIZE (mm)	215.9	
IADC CODE		
MFG.	HUGHES	
TYPE	JDE	
SERIAL NO.	FH226	
JETS (mm)	3 x 12.7	
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		
CUTTING STRUCTURE T, T, MDC LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.		
HOLE DRAG		
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)		

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	16:00
DENSITY kg/m³	1330
FUNNEL VIS. - (S/L)	60
W.L. (cm³)	9.0
pH	10.5
Y.V.Tm³	82.8

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0 (CENTRIFUGE)			

METRES DRILLED

FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.
2330			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
2850	152		152

DEPTH (m)	DEVIATION (°)	DIR

[illegible signature]

FOLD HERE →

DAILY CHECKS OPR. [illegible] R.M.

(1) Daily Walk Around Inspection — Initial [illegible] Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial Initial
(3) H²S Signs Posted (if required) — Initial [illegible] Initial
(4) Well License & Stick Diagram Posted — Initial [illegible] Initial
(5) Flare Lines Staked — Initial [illegible] Initial
(6) BOP Drills Performed — Initial [illegible] Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial [illegible] Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial [illegible] Initial
(5) Motor Kills checked — Initial

YEAR	MONTH	DAY

RIG NO [illegible]

FUEL @ 8:00

RIG 1,4E [illegible] BOILER

WEATHER	
TEMPERATURE	−9 °C
CURRENT CONDITIONS	[illegible]
WIND DIRECTION	
ROAD	ICY

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	STEEL	[illegible]	1??	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	SW	76	168	H.W.F.	30	F-1600	Emsco	254
127	2807	E3	101	156		127	F-1600	Emsco	254
127	[illegible]	E3	108	156	↓	145	F-800	Emsco	228.?

	SAFETY MTG.	21	22	23	24	25	26	TOTALS
	BOP Drill							
								5
		$3/4$						6
		$1/4$						24

SHALE SHAKER(S)

NO. [illegible] TYPE [illegible]

SCREENS CHANGED ☐ YES ☒ NO

TOP	140	TOP	175
MIDDLE	140	MIDDLE	175
BOTTOM	140	BOTTOM	175

RENTALS SERVICES

TMJ - 524300
[illegible] - 4714
[illegible] - .34

MORNING TOUR

RECORD

23:00
1335
70
9.2
10.5
74.0

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2330				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5500	152	—	152	100

2500		33		50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
0			

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

FROM	TO			
0000	0015	$1/4$	6	Continue R.I.H. F/1900m - 2274m
0015	0145	$1\frac{1}{2}$	5	Wash To 2330m Circulate bottoms up.
0145	0200	$1/4$	6	Wiper Trip up To Casing
0200	0315	$1\frac{1}{4}$	5	Circulate bottoms up, [illegible]
0315	0345	$1/2$	12	R[illegible] & Cement
0345	0445	1	6	P.O.O.H. 8 Stands To 2100m
0445	0530	$3/4$	5	Circulate [illegible] Pump Pill
0530	0545	$1/4$	7	[illegible] Bottom [illegible]
0545	0800	$2\frac{1}{4}$	6	P.O.O.H. [illegible] 85 [illegible] E3
				Continue P.O.O.H.

NOTES [illegible] Brakes & Linkages.
Boiler Blow down 2X

DRILLER'S SIGNATURE [illegible]

8	10.5	350°C	15000 [illegible]	Cementing Plugs.	3104 KPA

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2330				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
2500	152		152	110

3100		100		60

DEPTH (m)	DEVIATION (°)	DIRECTION
[illegible]	MEAS	11.??
	[illegible]	3.12
	[illegible]	+3.??

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
CENTRIFUGE			
0			

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

FROM	TO			
08[illegible]	10[illegible]	$2\frac{1}{4}$	6	P.O.O.H. [illegible] OUT OF HOLE
1[illegible]	1[illegible]	$1/4$	7	[illegible]
1[illegible]	15[illegible]	$4\frac{1}{2}$		[illegible] R.I.H. [illegible]
15[illegible]	1600	1	5	CIRC. BTMS-UP
				[illegible] MIXED 5.3m³ 6.2 TONNES OF SLURRY WEIGHTED TO
				[illegible] Pumped [illegible] Pressure Tested
				Lines To [illegible] Pumped [illegible] Slurry [illegible] By
				[illegible]
				[illegible]
				[illegible]
			*	[illegible] B.O.P. [illegible]

NOTES [illegible]
[illegible]

DRILLER'S SIGNATURE [illegible]

0	10.5	[illegible]	15000.	[illegible]	3109 KPA

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2330				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
2850	152		152	60

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
CENTRIFUGE			
0			

TIME LOG — **DETAILS OF OPERATION IN SEQUENCE AND REMARKS**

FROM	TO			
1600	1845	$2\frac{3}{4}$	13	WAIT ON CEMENT
1845	1900	$1/4$	22	HELD BOP DRILL SECURE IN 60 SEC
1900	2400	5	13	WAIT ON CEMENT

NOTES ✓ CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILER BLOWN DOWN 3X CHECK DRAWWORKS CHAINS

DRILLER'S SIGNATURE [illegible]

6	10.5	750		BOP DRILL	3107 KPA

FOLD HERE

159235

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest etal North Wood C31
OPERATOR:	CONTRACTOR:
Canadian Forest Oil	[illegible] Drilling
SURFACE LOCATION:	UNIQUE ID.:
300-C31-J060-12330-0	300-C31-G060-12330-0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS — OPR. / R.M.

- (1) Daily Walk Around Inspection — Initial [initials] — Initial
- (2) Detailed Inspection-Weekly having checklist — Initial [initials] — Initial
- (3) H₂S Signs Posted (if required) — Initial [initials] — Initial
- (4) Well License & Stick Diagram Posted — Initial [initials] — Initial
- (5) Flare Lines Staked — Initial [initials] — Initial
- (6) BOP Drills Performed — Initial [initials] — Initial
- (7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial [initials] — Initial
- (1) Rig Site Health and Safety Meeting (once/month) — Initial — Initial
- (2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month) — Initial — Initial
- (3) Mast Inspection Before Raising or Lowering — Initial — Initial
- (4) Crown Saver Checked — Initial — Initial
- (5) Motor Kills checked — Initial — Initial

YEAR / MONTH: [illegible]
RIG NO.: 56

FUEL
RIG: 1.71

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Evaluate / Run Pipe
MORN.		3	3/4		1	1/2	1/4															
DAY					7 1/4	4 3/4	1/4														3/4	
EVE.						5 3/4															1/4	2 1/2
TOTAL		3	3/4		8 1/4	10 1/4	1/2														1	2 1/2

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
			.25 m
1	Bit Sub	158	1.19 m
3	DC	159	26.36 m
1	X/O	159	.65 m
7	HWDP	127	65.66 m
1	Jar	172	5.67 m
23	HWDP	127	210.20 m
		BHA:	311.94 m
71	D.P.	STANDS	2035.04 m
—	D.P.	SINGLES	— m
	KELLYDOWN	49 -	16.99 m
	TOTAL		2330.00 m
	WT. OF DC	30000	1000 daN
	WT. OF STRING	95000	1000 daN

BIT RECORD

BIT NO.	10 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N432F
JETS (mm)	Open
DEPTH OUT (m)	2330
DEPTH IN (m)	2311.46
TOTAL METRES DRILLED (m)	19
TOTAL HOURS RUN	3

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 10000 daN Slack [illegible]
TORQUE AT BOTTOM: 9000-16000 Ft lbs
FILL ON BOTTOM (m): —

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1330	1330	1335
FUNNEL VIS. - (S/L)	65	63	65
W.L. (cm³)	12.	11	9.6
pH	10.5	11.0	11.0
Pit m³	79.2	80.4	80.4

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Lignite	8 sx
Staypak	4 sx
Drispac	4 sx
Sod Sulfite	2 sx
Causticx	1 pl
Biocide	1 pl
XL-Defoamer	1 pl
Alumic [illegible]	1 pl

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY — 0; Centrifuge [illegible]; 0

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.
2311.46	2330	18.54	80

PUMP: 7000 | LINER SIZE 152 | S.P.M. - | 152

2600 | 315

DEPTH (m) | DEVIATION (°)

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1			.25 m
1	Bit Sub	158	1.19 m
3	DC's	159	26.38 m
1	X/O	159	.65 m
7	HWDP	127	65.66 m
1	Jar	172	5.67 m
23	HWDP	127	210.24 m
		BHA:	311.94 m
71	D.P.	STANDS	2035.04 m
	D.P.	SINGLES	— m
	KELLYDOWN 1/2		16.96 m
	TOTAL		2330.00 m
	WT. OF DC	30000	1000 daN
	WT. OF STRING	95000	1000 daN

BIT RECORD

BIT NO.	10 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N432F
JETS (mm)	Open
DEPTH OUT (m)	2330
DEPTH IN (m)	2311.46
TOTAL METRES DRILLED (m)	19
TOTAL HOURS RUN	3

T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
4	6	WT	A	E	2	CT	TD	

HOLE CONDITION
HOLE DRAG: 5000 ↑↓ Rotating
TORQUE AT BOTTOM: 9000 - 15000 FT-lB
FILL ON BOTTOM (m): —

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	08:30	12:30
DENSITY kg/m³	1330	1330
FUNNEL VIS. - (S/L)	68	66
W.L. (cm³)	9.0	
pH	10.0	10.5
Pit m³	79.2	77.8

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Caustic	3 sks + 1

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.

2330 —

PUMP: 6500 | LINER SIZE 152 | S.P.M. | 152

2600 | 330

DEPTH (m) | DEVIATION (°) | DIR.

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

NO.		O.D.	LENGTH
1	Stinger		1.86 m
20	3½ DP		189.27 m
1	X/O		.57 m
			m
		BHA:	191.70 m
74	D.P.	STANDS	m
XX	D.P.	SINGLES	2140.49 m
	KELLYDOWN		m
	TOTAL		2332.19 m
	WT. OF DC		1000 daN
	WT. OF STRING	74000	1000 daN

BIT RECORD

BIT NO.	10 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N432F
JETS (mm)	Open
DEPTH OUT (m)	2330
DEPTH IN (m)	2311.46
TOTAL METRES DRILLED (m)	19
TOTAL HOURS RUN	3

CUTTING STRUCTURE: T | T₀ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITION
HOLE DRAG:
TORQUE AT BOTTOM:
FILL ON BOTTOM (m):

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	Trip Record
DENSITY kg/m³	Meas - 13.56
FUNNEL VIS. - (S/L)	Calc - 11.21
W.L. (cm³)	Diff - 2.35
pH	
Pit m³	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY — 0; Centrifuge [illegible]; 0

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.
2330			

PUMP: LINER SIZE 152 | S.P.M. | 152

DEPTH (m) | DEVIATION (°) | DIREC.

DRILLER'S SIGNATURE: [signature]

FOLD HERE

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Parameters & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY

RIG NO

FUEL @ 8:00

RIG 1.71 | BOILER

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	76	158	[illegible]	30	F-800	[illegible]	[illegible]
127	38.07	E2	101	156		[illegible]	F-800	[illegible]	[illegible]
127	29.02	E2	108	156		145	F-800	[illegible]	229.0

SAFETY MTG		
[illegible]		
3/4		
1/4	[illegible]	
1	272	

TOTALS

NO. TYPE

SCREENS CHANGED YES NO

TOP | TOP 75

MIDDLE | MIDDLE

BOTTOM 140 | BOTTOM 75

T.M.T 5[illegible]349

[illegible] 3313

Agitators [illegible] 34

RECORD

04:00	06:00
1330	1335
63	65
11	9.96
11.0	11.0
80.4	80.4

MORNING TOUR

METRES DRILLED

FROM	TO	DRG RAM CORE C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2311.46	2330	18.54	80	9

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
7000	152	-	152	110

2600 | 3.5 | 50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

0

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	0315	3¼	3	Ream from 2308.94 m - 2312 m
0315	0615	3	2	Drill [illegible] 2330 m
0615	0630	¼	7	[illegible]
0630	0730	1	5	[illegible]
0730	08			[illegible] to Csg

NOTES [illegible]

[illegible] 3X

[illegible] | [illegible] 350 | 10000 | [illegible] | 5104 [illegible]

RECORD

12:30	
1330	
66	
10.5	
77.8	

DAY TOUR

METRES DRILLED

FROM	TO	DRG RAM CORE C	ROTARY R.P.M.	WT ON BIT (1000 daN)
[illegible]				
2330				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6500	152		152	110

7800 | 330 | 25

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	0830	½	22	Flow ✓ in Csg @ 2291
0830	09:45	1¼	5	R.I.H to 2330 m.
09:45	10	1¼	5	Circ. Hole clean.
10	12	2		[illegible] hole not [illegible]
12				[illegible] run back to bottom
12	1300	1	5	Circ [illegible] up - max [illegible], 33.3% [illegible]
13	13:45	¾	6	Pump out 5 stds, [illegible]
13:45	14:00	¼	7	R/S [illegible]
14	15	1	6	[illegible] 5 stds, [illegible]
15	15:15	¼	22	Flow ✓
15:15	16		6	P.O.O.H. [illegible]
				[illegible] 2000

NOTES [illegible]

[illegible] 3X

[illegible] | [illegible] 350 | [illegible] | [illegible] | 5104 [illegible]

RECORD

EVENING TOUR

METRES DRILLED

FROM	TO	DRG RAM CORE C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2330				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

0

0

TIME LOG | DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16	18	2	6	P.O.O.H. [illegible]
18	18	¼	22	Flow ✓ [illegible]
18	19:45		6	[illegible]
19:45	21:15		23	[illegible]
21:15	2300	1¾	6	R.I.H. [illegible]
2300	2330	½	23	[illegible] E3
2330	2400	½	6	R.I.H. to [illegible]

NOTES [illegible]

[illegible] 3X

[illegible] | [illegible] 350 | [illegible] | 5104 [illegible]

159234

DAILY CHECKS

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al Nord Lord C31

OPERATOR: Canadian Forest Oil

CONTRACTOR: [illegible]

SURFACE LOCATION: [illegible] C-31-[illegible]

UNIQUE ID: 30[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

TIME	OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG.
	MORN						4	1/4														3 3/4
	DAY						4	1/4		3/4												2
	EVE		2				2 3/4	3/4														
	TOTAL		3				10 3/4	1/2		3/4												5 3/4

DRILLING ASSEMBLY / BIT RECORD / MUD RECORD

DRILLING ASSEMBLY		BIT RECORD	
1	2.35	BIT NO.	10MRR
1 Bit sub 158	1.19	SIZE (mm)	15.9
3 DC 159	29.38	IADC CODE	
1 X/O 159	.65	MFG.	HUGHES
7 HWDP 127	65.66	TYPE	GTS1
1 Jar 172	5.67	SERIAL NO.	N342F
23 HWDP 127	210.26	JETS	[illegible]
		DEPTH OUT	
BHA:	311.99	DEPTH IN	331.46
		TOTAL METRES DRILLED	
		TOTAL HOURS RUN	
70 D.P. STANDS	2006.11	CUTTING STRUCTURE	
— D.P. SINGLES	—		
KELLYDOWN	9.11		
TOTAL	2309.9	HOLE DRAG	10000 N S
WT. OF DC	30000	TORQUE AT BOTTOM	800-1500
WT. OF STRING	95000	FILL ON BOTTOM (m)	—

MUD RECORD		
TIME	20:00	2400
DENSITY	1310	1320
FUNNEL VIS. - (S/L)	100	65
W.L. (cm³)	8.5	12
pH	10.5	10.5
[illegible]	75.5	78.1

PRODUCT | AMOUNT X UNIT

FROM	TO
331.46	
2307[illegible]	2308[illegible]

6800 | 150

4200

DEPTH (m) | DEVIATION

FOLD HERE →

DAILY CHECKS | OPR. | R.M.

TEMPERATURE | CURRENT CONDITIONS | WIND DIRECTION | ROAD

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
							75.70	

FUEL 1.92

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN I.D. (mm)	TOOL J.O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
									254
									254
									228.6

SCREENS CHANGED YES NO
TOP / MIDDLE / BOTTOM

3¾
2 ¼ ¼ 1½
5¾

FROM | TO | ROTARY RPM
DEPTH (m) | DEVIATION (°) | DIRECTION

NOTES

FROM | TO | ROTARY RPM
DEPTH (m) | DEVIATION (°) | DIRECTION

NOTES

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO		ROTARY RPM	
2400			60-70	1-7
2307.93	2308.99			

2400	
320	
65	
12	
10.5	
78.1	

6600 | 159 | - | 159 | 110
4200 | | | | 50

1845	23¾		H. Fill ...
2000			
2000	2212		Ream ... 2297.50 m
2215	2315	1	Wash from 2297.5 m - 2307.93 m
2315		3	REAM 2307.93 m - 2308.99 m

DEPTH (m) | DEVIATION (°) | DIRECTION

NOTES

2559 m.

159233

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's · Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills Checked		Initial

YEAR: [illegible] MONTH: [illegible]

RIG NO: 58

FUEL @ 8

RIG: 2.21

WEATHER: TEMPERATURE — CURRENT CONDITIONS — WIND DIRECTION — ROAD: ICY

LICENCE NO.: 1908

WELL NAME AND NO.: [illegible] North [illegible] C31

OPERATOR: [illegible]

CONTRACTOR: [illegible] Drilling Ltd.

SURFACE LOCATION: [illegible] C31 [illegible]-40-13-30-0

UNIQUE ID: [illegible]-C31-[illegible]-40-13-30-0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

Time distribution

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG		WORK Pipe	Flow
MORN						3¾									3½							1½		
DAY															2									
EVE						[illegible]									3¼								1¼	¼
TOTAL						[illegible]									[illegible]							1½	1¼	¼

MORNING TOUR

DRILLING ASSEMBLY

D.P.	STANDS	
D.P.	SINGLES	
	KELLYDOWN	
	TOTAL	
WT. OF DC		
WT. OF STRING		

BIT RECORD

BIT NO.	9038
SIZE (mm)	[illegible]
IADC CODE	
MFG.	[illegible]
TYPE	[illegible]
SERIAL NO.	[illegible]
JETS (mm)	3x[illegible]
DEPTH OUT (m)	
DEPTH IN (m)	[illegible]
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE T T MDC LOC B Gage ODC Reason Pulled Total Run m/hr	[illegible]
HOLE DRAG	
TORQUE AT BOTTOM	
PULL ON BOTTOM	

MUD RECORD

TIME	22:00	[illegible]
DENSITY kg/m³	1310	[illegible] 14.24
FUNNEL VIS. - (S/L)	[illegible]	[illegible]
W.L. (cm³)	[illegible]	[illegible]-3.05
pH	[illegible]	
Pit m³	[illegible]	

PRODUCT	AMOUNT X UNIT
[illegible]	[illegible]

METRES DRILLED

FROM	TO	DRG. REAM CORE-C	ROTARY R.P.M.
2311.46			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
9100	152	—	152
5500			

DEPTH (m)	DEVIATION (°)	DIR

HOURS RUN: 0 — HOURS RUN: 0

[signature]

DAY TOUR

DRILLING ASSEMBLY

1	Packer	1.47 m
30	[illegible]	[illegible]
	[illegible]	[illegible]
70 D.P.	STANDS	[illegible]
D.P.	SINGLES	
	KELLYDOWN	[illegible]
	TOTAL	[illegible]
WT. OF DC		
WT. OF STRING		

BIT RECORD

BIT NO. / SIZE / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS / DEPTH OUT / DEPTH IN / TOTAL METRES DRILLED / TOTAL HOURS RUN / CUTTING STRUCTURE

HOLE DRAG: [illegible]

TORQUE AT BOTTOM

PULL ON BOTTOM

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

PRODUCT	AMOUNT X UNIT
BARITE	60 sks
LIGNITE	1 sk

METRES DRILLED

FROM	TO	DRG. REAM CORE-C	ROTARY R.P.M.
2311.46			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		152

DEPTH (m)	DEVIATION (°)	DIR

HOURS RUN: 0 — HOURS RUN: 0

[signature]

EVENING TOUR

DRILLING ASSEMBLY

1	Packer	1.47 m
30	[illegible]	275.80
	BHA:	277.27 m
30 D.P.	STANDS	860.01
D.P.	SINGLES	
	KELLYDOWN	
	TOTAL	1137.28
WT. OF DC		
WT. OF STRING		50000

BIT RECORD

BIT NO. / SIZE / IADC CODE / MFG. / TYPE / SERIAL NO. / JETS / DEPTH OUT / DEPTH IN / TOTAL METRES DRILLED / TOTAL HOURS RUN / CUTTING STRUCTURE

HOLE DRAG

TORQUE AT BOTTOM

PULL ON BOTTOM

MUD RECORD

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

Pit m³

PRODUCT	AMOUNT X UNIT

METRES DRILLED

FROM	TO	DRG. REAM CORE-C	ROTARY R.P.M.
2311.46			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
	152		152

DEPTH (m)	DEVIATION (°)	DIRE

HOURS RUN: 0 — HOURS RUN: 0

[signature]

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible] DAY 22

RIG NO 58

FUEL @ 8:00

RIG 221 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG. HEAD (m)	SET AT (m)
	3[illegible]	[illegible] 7	7[illegible]	ST+C	[illegible]	139	[illegible]	5.70	[illegible]

WEATHER

TEMPERATURE -7 °C

CURRENT CONDITIONS [illegible]

WIND DIRECTION [illegible]

ROAD ICY

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	[illegible]	76	158	4½ IF	30	F-1000	EMSCO	254
127	38.07	E	101	156	↓	[illegible]	F-1000	EMSCO	254
127	29.02	E	108	156		[illegible]	F-800	EMSCO	228.6

SAFETY MTG.						TOTALS
	[illegible]	WORK P[illegible]	Flow /			
	1½					8
						8
		1¼	¼			8
	1½	1¼	¼			24

SHALE SHAKER(S)

NO./TYPE [illegible] F.L.C.

SCREENS CHANGED YES X NO

TOP 140	TOP 175	
MIDDLE 140	MIDDLE 175	
BOTTOM 140	BOTTOM 175	

RENTALS SERVICES

T.M.I. - 5.4137

A.M.I. - 4959

A.[illegible] 0,1 - 37

MORNING TOUR

RECORD

Trip Record

[illegible] 14.89

[illegible] - 11.61

[illegible] - 3.28

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9100	152	-	152	50

REDUCED PUMP SPEED: 5500 @ [illegible] @ 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge #2

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE NO.	DETAILS
00:00	02:15	2¼	6	Continue Pooh Flow @ 35 stds, 55 stands [illegible]
[illegible]	04:15	1½	[illegible]	[illegible] Tools [illegible]
04:15	04:30	¼	7	R/S [illegible]
04:30	08:00	3½	15	[illegible] Test Plug [illegible]
				[illegible] Test Annular TOP [illegible]
				HCR [illegible] Kill & Choke Line Valves
				[illegible]
				[illegible]
				1500 [illegible] 10 [illegible]

NOTES [illegible] Crown Saver [illegible] Brakes [illegible]

[illegible] 3x

DRILLER'S SIGNATURE [illegible]

BOILER HRS. RAN	kPa	STACK TEMP.	MAXIMUM EXPERIENCED HOOKLOAD	SAFETY TOPIC	
8	105	350 °C		T[illegible]	3559 KPA

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge 2

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE NO.	DETAILS
[illegible]	1[illegible]:00	2	15	[illegible]
				[illegible]
				[illegible] IN [illegible]
				[illegible] TEST
				[illegible] NO LOSS IN [illegible] PACKER
1[illegible]:00	16:00	6	[illegible]	R.I.H. W/ CASING PACKER
				ACCUMULATOR FUNCTION TEST START PRESS 21000
				CLOSE ANNULAR 600 KPA LOSS, 21 SEC, CLOSE PIPE
				RAMS [illegible] KPA LOSS [illegible] SEC, CLOSE PIPE RAMS 400 KPA
				LOSS 4 SEC, CLOSE PIPE RAMS 700 KPA LOSS, [illegible] SEC.
				TOTAL PRESSURE LOSS 10 000 [illegible] 13 SEC TO REBUILD
				PRESSURE. [illegible] PRESSURE 6500 KPA

NOTES [illegible] SAVER

Boiler Blow down 3x

DRILLER'S SIGNATURE [illegible]

BOILER HRS. RAN	kPa	STACK TEMP.	MAXIMUM EXPERIENCED HOOKLOAD	SAFETY TOPIC	
8	10[illegible]	350 °C	—	[illegible]	3559

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		1[illegible]	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge #2

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE NO.	DETAILS
16:00	17:30	1½	6	RUN IN HOLE W/ CASING PACKER FOR PRESSURE TEST
17:30	18:15	¾	15	Set Packer @ 2252 & TEST CSG AGAINST
				[illegible]
18:15	18:30	¼	7	Rig Service.
18:30	19:45	1¼	23	[illegible] 100 [illegible] Attempt to Circulate
19:45	20:15	½	6	POOH. with Packer TO 2140 m (5 Stands)
20:15	20:30	¼	24	TOP Fill Pipe and Flow ✓
20:30	24:00	3½	6	Continue Pooh. with Packer Flow @ 10 stands
				[illegible] 35 [illegible]

NOTES Crown Saver [illegible] Brakes & [illegible]

Boiler Blowdown 3x

DRILLER'S SIGNATURE [illegible]

BOILER HRS. RAN	kPa	STACK TEMP.	MAXIMUM EXPERIENCED HOOKLOAD	SAFETY TOPIC	
8	10.5	350 °C	105000 [illegible]	[illegible]	3559.

159232

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LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al Nelinkoni C-31
OPERATOR:	CONTRACTOR:
Canadian Forest Oil	Akita Drilling Ltd
SURFACE LOCATION:	UNIQUE ID:
300-C31 60-40 -122-30-0	[illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial / Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial / Initial
(3) H₂S Signs Posted (if required) — Initial / Initial
(4) Well License & Stick Diagram Posted — Initial / Initial
(5) Flare Lines Staked — Initial / Initial
(6) BOP Drills Performed — Initial / Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial / Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR	MONTH	DAY
[illegible]	11	[illegible]

RIG NO. 58

FUEL @ 8:00 — RIG 1.04 — BOILER

WEATHER: TEMPERATURE + · CURRENT CONDITIONS · WIND DIRECTION · ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	[illegible]	WORK PIPE
MORN.					2	3½																2½	
DAY					1¾	4																7¾	
EVE.					2	1¾																5	1¼
TOTAL					5¾	9¼																15¼	1¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	Bit	.25 m
1	Motor	6.21 .75 m
1	Reamer	8.26 m
1	Ext-Sub	1.98 m
2	NMDC	18.48 m
1	X/O NMDC	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.67 m
23	HWDP	210.20 m
	BHA	320.51 m
D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		m
WT. OF DC	20,000	1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	9 MKR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	JD-8
SERIAL NO.	FH226
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2311
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE CONDITION: HOLE DRAG · TORQUE AT BOTTOM · FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☑ WATER BASED ☐ OIL BASED

TIME	0:00	Tessar [illegible]
DENSITY kg/m³	1295	[illegible] 10.76
FUNNEL VIS. - (S/L)	70	[illegible] 7.87
W.L. (cm³)	9.5	[illegible] 2.89
pH	11.0	
PVT m³	82.2	

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
[illegible]	68 sx
Lignite	15K.

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0			

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.
2311.46			

PUMPS

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
[illegible] 300	152	—	152
6000	195		

DEVIATION

DEPTH (m)	DEVIATION (°)	DIR

Gary Tikala

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	Bit	.25 m
1	Motor	6.21 .75 m
1	Reamer	8.26 m
1	Ext-Sub	1.98 m
2	NMDC	18.48 m
1	X/O NMDC	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.67 m
23	HWDP	210.20 m
	BHA	320.51 m
69 ½	D.P. STANDS	1987.13
1	Single D.P. SINGLES	9.86
KELLYDOWN		-10.54
TOTAL		2307.46
WT. OF DC	20,000	1000 daN
WT. OF STRING	85,000	1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	JD-8
SERIAL NO.	FH226
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2311
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE CONDITION: HOLE DRAG · TORQUE AT BOTTOM · FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	13:30	17:30
DENSITY kg/m³	1290	1290
FUNNEL VIS. - (S/L)	70	67
W.L. (cm³)	10.2	10.0
pH	8.0	8.5
PVT m³	81.1	80.2

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Caustic	2 sxs

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.
2311.46			

PUMPS

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10500	152	[illegible]	152
6000	195		

DEVIATION

DEPTH (m)	DEVIATION (°)	DIR

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	Bit	.25 m
1	Motor	6.21 .75 m
1	Reamer	8.26 m
1	Ext Sub	1.98 m
2	NMDC	18.48 m
1	X/O NMDC	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.67 m
23	HWDP	210.20 m
	BHA	320.51 m
69 ½	D.P. STANDS	1987.13
1	Single D.P. SINGLES	9.86
KELLYDOWN		-10.54
TOTAL		2307.46
WT. OF DC	20,000	1000 daN
WT. OF STRING	85,000	1000 daN

BIT RECORD

BIT NO.	9 MKR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	JD-8
SERIAL NO.	FH226
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2311
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T₀	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE CONDITION: HOLE DRAG Backream · TORQUE AT BOTTOM 3000 [illegible] · FILL ON BOTTOM (m) —

MUD RECORD — MUD TYPE: ☑ WATER BASED ☐ OIL BASED

TIME	21:00	22:00
DENSITY kg/m³	1330	1310
FUNNEL VIS. - (S/L)	65	69
W.L. (cm³)	8.5	8.5
pH	11.0	11.0
PVT m³	78.1	78.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0			

METRES DRILLED

FROM	TO	DRG RM-R CORE-C	ROTARY R.P.M.
2311.46			35

PUMPS

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
9100	152	—	152
5500	195		

DEVIATION

DEPTH (m)	DEVIATION (°)	DIR

DRILLER'S SIGNATURE: Gary Tikala

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (onecrew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (onerig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY

RIG NO 58

FUEL @ 8:00

RIG | BOILER

WEATHER: TEMPERATURE +3 °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING TUBING OR LINER	O.D (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
					ACL	184		5.70	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN I.D (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
		HW	76	158	4½ IF		F-1000	EMSCO	254
127	33.07	E3	101	156	↓		F-1000	EMSCO	254
127	27.02	E3	108	156	↓		F-800	EMSCO	228.6

SAFETY MTG.			TOTALS	SHALE SHAKER(S)		RENTALS SERVICES
Hand	Work Pipe			NO. / TYPE	FLC	TMT-516395
2V0			4	SCREENS CHANGED YES / NO		AMI-6367
7¾			8	TOP 140	TOP 175	Accum. 0.1-35
3	1½		3	MIDDLE 140	MIDDLE 175	
7¾	1½		24	BOTTOM 140	BOTTOM 175	

MORNING TOUR

RECORD

Target ★
10.76
7.87
2.89

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.56				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10000	152	—	152	55

6000 | 195 | 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00		¼		Work Gyro ...
	00:15			
00:15	01:30	1¼		Pull out ... Rig out ...
01:30	03:00	1½	5	Circulate Bottoms up, Flow ✓ Pump Pill
	06:30	3½		... 35 ...
06:30	07:30	1		Rig ... Gyro ...
07:30	08:00	½	5	Test Mud ✓

NOTES ✓ Crown Saver, Fastline Clamp, Deadman Anchor, Brake & Linkage
Boiler Blowdown 3X

DRILLER SIGNATURE: [illegible]

8 | 105 | 350 | 9500 | Consumption of ... 3898 KPA

DAY TOUR

RECORD

17:30
1290
67
10.0
8.5
80.2

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.56				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10500	152		152	65

6000 | 195 | 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
		4		... to 2263
		1¾	5	Circulate ... Wash to 2295m.
	16:00	2¾	22	Rig up Schlumberger & ... and run ... Gyro

NOTES ✓ ... Crown Saver
Boiler Blow down 3X

DRILLER SIGNATURE: [illegible]

3898 KPA

EVENING TOUR

MUD RECORD

23.00
1310
69
8.5
11.0
73.0

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.56			35	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
9100	152	—	152	80

5500 | | 50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	16:45	¾	22	Gyro w/ Schlumberger and Orient Tool
16:45	18:15	1½	22	Orient w/ Gyro Run Down Through Window
				... In to 2308m Stuck In Hole
18:15	19:00	¾	23	Work Stuck Pipe Could Not Get Free
19:00	19:45	¾	22	Pull out of Hole with Wireline
19:45	20:15	½	23	Work Stuck Pipe F/2308–2295m
20:15	22:15	2	5	Circulate Bottoms up, Flow ✓ Pump Pill
22:15	24:00	1¾	7	POOH, Flow ✓ 5 ...

NOTES ✓ Crown Saver, Fastline Clamp, Deadman Anchor, Brake & Linkage
Boiler Blowdown 3X

DRILLER SIGNATURE: [illegible]

5 | 105 | 350 | 9500 | 3107 KPA

159231

DAILY CHECKS OPR. R.M.

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly using checklist
(3) H2S Signs Posted (if required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually inspect BOP's, Flanges & Degasser Lines

(1) Rig Site Health and Safety Meeting
(2) C.A.O.D.C. Rig Safety Inspection Checklist
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills checked

YEAR / MONTH 21
RIG NO.
FUEL
1.26
TEMPERATURE
CURRENT CONDITIONS
WIND DIRECTION
ROAD

LICENCE NO.: 1900	WELL NAME AND NO.: Canadian Forest ... 631
OPERATOR:	CONTRACTOR:
SURFACE LOCATION: 300-631-...	UNIQUE ID: 300-631-...
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG		Function BOP	...	GYRO
MORN.						10 ...																3			
DAY						...																	1/2	2 1/4	
EVE.						...																			1 3/4
TOTAL					2	11 3/4																3	1/2	4 3/4	1 3/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.5 m
1	Motor	6.21 .75 m
1	...	.78 m
1	...	18.48 m
1	...	.44 m
1	Bhd	.56 m
1	...	.36 m
7	...	65.60 m
1	Jar	5.63 m
23	HWDP	... m
		3... 3... m
D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		
WT. OF DC	...	1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	9 ...
SIZE (mm)	...
IADC CODE	
MFG.	...H-S
TYPE	...7
SERIAL NO.	...
JETS (mm)	3x...
DEPTH OUT (m)	...
DEPTH IN (m)	...
TOTAL METRES DRILLED (m)	...
TOTAL HOURS RUN	...

CUTTING STRUCTURE T1	T2	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr
1	2	CT		E	I	CT		

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME
DENSITY kg/m³
FUNNEL VIS. - (S/L)
W.L. (cm³)
pH
PVT ...3

PRODUCT	AMOUNT X UNIT
Barite	188 sx
Lignite	1 SK.

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

Centrifuge #...

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD REAM CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.75 m
1	Motor / Float Sub	6.21 .75 m
1	Res Sub / ...	.75 .76 m
1	Ext Sub	1.48 m
7	NMDC	18.48 m
1	...	.44 .56 m
1	XO	.36 m
7	HWDP	65.60 m
1	Jar	5.67 m
23	HWDP	210.26 m
	Run =	370... m
D.P.	STANDS	m
D.P.	SINGLES	m
KELLYDOWN		m
TOTAL		2311.46 m
WT. OF DC	20 000	1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	9 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	JD 8
SERIAL NO.	FH 226
JETS (mm)	3x 11
DEPTH OUT (m)	
DEPTH IN (m)	2311
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T1	T2	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME
DENSITY kg/m³
FUNNEL VIS. - (S/L)
W.L. (cm³)
pH

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

Centrifuge #...

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

METRES DRILLED

FROM	TO	DRD REAM CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		.25 m
1	Motor / Float Sub	6.21 .76 m
1	Res Sub / ...	.750 .76 m
1	Ext Sub	1.49 m
2	NMDC	18.48 m
1	...	.44 .56 m
1	XO	.36 m
7	HWDP	65.66 m
1	Jar	5.67 m
23	HWDP	210.26 m
	Run:	380.51 m
69x D.P.	STANDS	1987.13 m
... D.P.	SINGLES	9.65 .85 m
KELLYDOWN		-22.18 m
TOTAL		2369... m
WT. OF DC	...000	1000 daN
WT. OF STRING	...	1000 daN

BIT RECORD

BIT NO.	9 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	JD-8
SERIAL NO.	FH226
JETS (mm)	3x 11
DEPTH OUT (m)	—
DEPTH IN (m)	2311
TOTAL METRES DRILLED (m)	—
TOTAL HOURS RUN	—

CUTTING STRUCTURE T1	T2	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr

HOLE DRAG 7000 / 7000 ...
TORQUE AT BOTTOM 7000 ...
FILL ON BOTTOM (m)

MUD RECORD

TIME
DENSITY kg/m³
FUNNEL VIS. - (S/L)
W.L. (cm³)
pH
PVT ...3

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

Centrifuge #...

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			

METRES DRILLED

FROM	TO	DRD REAM CORE	ROTARY R.P.M.
2311.46			15

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
10500	152	—	152
5400			

DEPTH (m)	DEVIATION (°)

FOLD HERE ➔

DAILY CHECKS — OPR. — R.M.

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly
(3) H2S Signs Posted (if required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOP's - Flarelines & Degasser Lines

(1) Rig Site Health and Safety Meeting
(2) C.A.O.D.C. Rig Safety Inspection Checklist
(3) Mast Inspection Before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills Checked

YEAR — MONTH — DAY

RIG NO.

FUEL @ 8:00

BOILER

	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
LAST CASING									
TUBING									
LINER									

	°C
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS
127	74.32	[illegible]		159		30
127	38.07	E3	101	156		138
127	29.02	E3	108	156		175

PUMP TYPE	PUMP MANUFACTURER	STROKE
F-1000	[illegible]	
F-1000	Emsco	254
F-800	Emsco	228.6

SAFETY MTG.

3

1/2

3 — 1/2 — 13/4

TOTALS

SHALE SHAKERS — NO. — TYPE

SCREENS CHANGED YES X NO

	TOP	MIDDLE	BOTTOM
	14-		
	175	175	175

T.O.T.- 513745

A.M.J-3617

Accum. [illegible] .35

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD. REAM. CORE.	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HRS RUN — INTAKE DENSITY (kg/m³) — OVERFLOW DENSITY (kg/m³) — UNDERFLOW DENSITY (kg/m³)

Centrifuge

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
00:00	02:30	21/2	6	[illegible] 2113.30 m
02:30	[illegible]	3/4	[illegible]	[illegible]
				[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]			[illegible]
[illegible]	[illegible]		7	[illegible]
[illegible]	04:[illegible]	1/2	5	[illegible]
[illegible]	08:00	3/4		[illegible]

NOTES √Crown Saver - Fastline Clamp Deadline Anchor Brakes & Linkage. Boiler Blowdown 3X.

8 | 10.5 | 350°C

Testing POP valves 4236 KPA.

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD. REAM. CORE.	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

Centrifuge

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
08:00	10:00	2	6	P.O.O.H. [illegible] @ B.H.A. [illegible] DRAIN [illegible]
10:00	10:30	1/2	7	[illegible] OBSERVED NO [illegible] COMING OUT OF [illegible] B.O.P. STACK, FLOW CHECK
10:30	15:15	4 3/4	21	[illegible] B.H.A. [illegible] DIRECTIONAL TOOLS
15:15	15:30	1/4	7	[illegible] ANNULAR [illegible] CLOSE/OPEN
15:30	16:00	1/2	6	RIH W/BIT [illegible]
				[illegible] DRIVE 16:00
				[illegible] DRIVE 31:00

NOTES √BRAKES, LINKAGE, FASTLINE CLAMP, DEADMAN ANCHOR, CROWN SAVER. BOILER BLOWDOWN 3X.

6 | 10.5 | 300°C

[illegible] — 4123 KPA

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRLD. REAM. CORE.	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46			15	

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10500	152	—	152	85
5400				50

DEPTH (m)	DEVIATION (°)	DIRECTION

Centrifuge

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
16:00	19:30	3 1/2	6	RUN IN B.H.A. [illegible] MWD @ 376 m [illegible] R.I.H. [illegible]
19:30	19:45	1/4	7	[illegible]
19:45	20:45	1	6	R.I.H. [illegible] 2295 m
20:45	22:15	1 1/2	5	Break Circ. Circulate Bottoms Up
22:15	24:00	1 3/4	25	Rig [illegible] & Run in GYRO. Gyro Cannot Get Through TOP OF MWD? Attempt To [illegible] TOP OF MWD?

NOTES √Crown Saver [illegible] Deadline [illegible] Brakes [illegible]. Boiler Blowdown 3X.

[illegible]

159230

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR: 09 MONTH: 07 DAY

RIG NO. 58

FUEL @ 8:

RIG 1.49 BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: Canadian Forest et al North Liard C31A

OPERATOR: Canadian Forest Oil Ltd.

CONTRACTOR: Akita Drilling Ltd.

SURFACE LOCATION: 300 C31A 6040 12330 0

UNIQUE ID.: 300 C31A 6040 12330 0

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

CODE	1 OPER.	2 RIG UP & TEAR DOWN	3 DRILL ACTUAL	4 REAMING	5 CORING	6 COND. MUD & CIRC.	7 TRIPS	8 RIG SERVICE	9 REPAIR RIG	10 CUT OFF DRILL LINE	11 DEV SURVEY	12 WIRE LINE LOGS	13 RUN CASE & CEMENT	14 WAIT ON CEMENT	15 NIPPLE UP B.O.P.	16 TEST B.O.P.	17 DRILL STEM TEST	18 PLUG BACK	19 SQUEEZE CEMENT	20 FISHING	21 DIR. WORK	22 SAFETY MTG.	Coring Ops	Standby
MORN.						1			3½														3/4	3¾
DAY						9			3/4															
EVE.						7¾	½																	
TOTAL						17¾	½		4¼														3/4	3¾

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	Motor & Float Sub	6.21 .75 m
1	Bit Sub	.75 m
	Orientor	18.48 m
1	X/O	.44 m
1	UBHO sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
23	HWDP	210.20 m
	BHA =	309.03 m
69	D.P. STANDS	1977.85 m
1		6.04 m
XX	D.P. SINGLES	19.26 m
	KELLYDOWN	-26.30 m
	TOTAL	2285.88 m
WT.OF DC	20000	1000 daN
WT.OF STRING	94000	1000 daN

BIT RECORD

BIT NO.	9 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	ATSI
SERIAL NO.	N34ZF
JETS (mm)	3 X 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	7¼

CUTTING STRUCTURE: T | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

MUD TYPE: WATER BASED / OIL BASED

TIME	07:00
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	83
W.L. (cm³)	9.0
pH	11.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL EQUIPMENT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRG. RMR. CORE-C	ROTARY R.P.M.
2311.46			

PUMP: LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152

DEVIATION SURVEYS: DEPTH (m) | DEVIATION (°) | DI...

DRILLER: [signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	Motor & Float Sub	6.21 .75 m
1	Bent Sub	.75 m
1	Ormoc	18.48 m
1	X/O	.44 m
1	UBHO Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
23	HWDP	210.20 m
	BHA =	309.03 m
69	D.P. STANDS	1977.85 m
		6.04 m
XX	D.P. SINGLES	19.26 m
	KELLYDOWN	-26.30 m
	TOTAL	2285.88 m
WT.OF DC	20000	1000 daN
WT.OF STRING	94000	1000 daN

BIT RECORD

BIT NO.	9 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	ATSI
SERIAL NO.	N34ZF
JETS (mm)	3 X 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	7¼

CUTTING STRUCTURE: T | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE CONDITIONS

HOLE DRAG: 10000 up 10000 down

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME	09:00	13:00	16:00
DENSITY kg/m³	1210	1230	1245
FUNNEL VIS. - (S/L)	97	80	80
W.L. (cm³)	9.0	9.0	9.0
pH	11.0	11.0	11.0
P.V.T. m³	78.1	78.9	80.8

PRODUCT	AMOUNT X UNIT
Corinox	1 PL
Biocide	2 PL
Sod Sulfite	2 SKS
~~Barit~~ BARITE	33 sks

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge #1			
0			

METRES DRILLED

FROM	TO	DRG. RMR. CORE-C	ROTARY R.P.M.
2311.46	2285.88		

PUMP: 8100 | LINER SIZE (mm) 152 | S.P.M. 52 | LINER SIZE (mm) 15...

DEVIATION SURVEYS: DEPTH (m) | DEVIATION (°) | DIR...

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	Motor & Float Sub	6.23 .75 m
1	Bent Sub	.75 m
1	Ormoc	18.48 m
1	X/O	.44 m
1	UBHO Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
23	HWDP	210.20 m
	BHA	309.03 m
69	D.P. STANDS	1977.85 m
	D.P. SINGLES	19.26 m
	KELLYDOWN	-26.30 m
	TOTAL	2285.88 m
WT.OF DC	20000	
WT.OF STRING	[illegible]	

BIT RECORD

BIT NO.	9 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	ATSI
SERIAL NO.	N34ZF
JETS (mm)	3 X 11.1
DEPTH OUT (m)	—
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	7¼

CUTTING STRUCTURE: T | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 5000 [illegible]

TORQUE AT BOTTOM

FILL ON BOTTOM (m) —

MUD RECORD

TIME	18:00	20:30	23:00
DENSITY kg/m³	1270	1275	1280
FUNNEL VIS. - (S/L)	74	68	65
W.L. (cm³)	9.0	9.0	9.2
pH	11.0	11.0	11.0
P.V.T. m³	84.0	85.5	86.6

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRG. RMR. CORE-C	ROTARY R.P.M.
2311.46			15

PUMP: 10500 | LINER SIZE (mm) 152 | S.P.M. 67 | LINER SIZE (mm) 152

7200 | 50

DEVIATION SURVEYS: DEPTH (m) | DEVIATION (°) | DIRE...

DRILLER: [signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
	01	

RIG NO. 58

FUEL @ 8:00

RIG 1.49 BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.61	BT+C	L-80	187	2632.87	5.70	2639.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	74.35	HW	76	159	4½IF	30	EMSCO	F-1000	254
127	38.1	E3	101	156	↓	188	EMSCO	F-1000	254
127	29.02	E2	108	156		199	EMSCO	F-800	228.6

	SAFETY MTG.					TOTALS
	Tripping Pipe	[illegible]				
	3¼	3¾				4
						5
						5
	3¼	3¾				24

SHALE SHAKER(S)

NO. 2 TYPE Derrick F.L.C.

SCREENS CHANGED ☐ YES ☒ NO

TOP 140	TOP 175	
MIDDLE 140	MIDDLE 175	
BOTTOM 140	BOTTOM 175	

RENTALS/SERVICES

T.M.I. - 5:1693

A.M.I. - 1565

Accum. O.I. - 35

MORNING TOUR

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			DETAILS
0000	0045	3/4	55	[illegible] Pressure To Drill Pipe [illegible] Pressure [illegible]
				[illegible] Pump Shut In [illegible] For Below Shut in Press - 920 KPA
0045	0230	1¾	93	Work Drill String Attempt To [illegible]
0230	0500	2½	9	Work on Top Drive
0500	0700	2	23	Work Drill String F/2311 m - 2185 m
0700	0800	1	5	Circulate

NOTES √Crown Saver Eq[illegible] [illegible] Drilling Line, Brakes & Linkage.
Boiler Blowdown 3x [illegible]

0	Centrifuge		
HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

9	104	350°	145000	Jarring	5137 KPA

DAY TOUR

12:00	16:00
1230	1245
80	80
9.0	9.0
11.0	11.0
78.9	80.8

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46	2285.58			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
8100	152	52	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			DETAILS
0800	1600	8	5	Circulate AND condition Mud Raise
				Density w/ Barite

NOTES [illegible] Linkage, [illegible] [illegible] Crown Saver
Boiler Blowdown 3x

8	103	350°	45000	Mixing [illegible]	5025 KPA

EVENING TOUR

20:30	23.00
1275	1280
68	65
9.0	9.2
11.0	11.0
85.5	86.6

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2311.46			15	—

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
10500	152	67	152	—

7700 — 50 — 185

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			DETAILS
1600	2330	7½	5	Circulate And Condition Mud Raise
				Density w/ Barite
2330	2400	½	6	Flow Check Flow 5 [illegible]

NOTES [illegible] Linkage, Fastline Clamps, Drawworks Anchor, Crown Saver
Boiler Blowdown 3x [illegible] (Safety Meeting) [illegible] on Remote [illegible]

0	Centrifuge		
HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

5	10.5	350°	43000	Test BOP Valves	[illegible]

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159229

LICENCE NO.:	WELL NAME AND NO.:
1900	Canadian Forest et al North [illegible] c-31-A

OPERATOR:	CONTRACTOR:
Canadian Forest Oil Ltd	Akita Drilling Ltd

SURFACE LOCATION:	UNIQUE ID.:
300 c-31-A 60-40 123-30	300 c-31-A 60-40 123-30

SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[illegible]	[illegible]

DAILY CHECKS

(1) Daily Walk Around Inspection — Initial [illegible] — Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist) — Initial [illegible] — Initial [illegible]
(3) H²S Signs Posted (if required) — Initial [illegible] — Initial [illegible]
(4) Well License & Stick Diagram Posted — Initial [illegible] — Initial [illegible]
(5) Flare Lines Staked — Initial [illegible] — Initial [illegible]
(6) BOP Drills Performed — Initial [illegible] — Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial [illegible] — Initial [illegible]

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial [illegible]
(5) Motor Kills checked — Initial

YEAR	MONTH
2001	01

RIG NO. 58

FUEL

RIG	BOILER
1.64	

WEATHER	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

TIME - HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Lay out the Tools	[illegible]	[illegible]	
MORN.																			$7\frac{3}{4}$			$\frac{1}{4}$			
DAY																			6				2		
EVE.																			5					3	
TOTAL																			$18\frac{3}{4}$			$\frac{1}{4}$	2	3	

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 / 6.21	m
1	FLT SUB / [illegible]	.75 / .75	m
2	[illegible]	18.48	m
1	X/O	.44	m
1	[illegible]	.56	m
1	X/O	.36	m
7	HWDP	65.60	m
1	JAR	5.43	m
23	HWDP	[illegible]	m
	BHA	309.03	m
69	D.P. STANDS	1977.85	m
	[illegible]	6.64	m
XX	D.P. SINGLES	19.26	m
	KELLYDOWN	.90	m
	TOTAL	2311.46	m
WT. OF DC		90000	1000 daN
WT. OF STRING		86000	1000 daN

BIT RECORD

BIT NO.	8 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N34ZF
JETS (mm)	3x11.1
DEPTH OUT (m)	[illegible]
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	$2\frac{3}{4}$

CUTTING STRUCTURE T	T_0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE ☑ WATER BASED ☐ OIL BASED

TIME	0400		
DENSITY kg/m³	1140		
FUNNEL VIS. - (S/L)	57		
W.L. (cm³)	6.0		
pH	11.5		
PVT m^3	62.9		

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RMR CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152	-	152

DEPTH (m)	DEVIATION (°)	DI

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25	m
1	MOTOR / FLOAT SUB	6.21 / .75	m
1	[illegible]	.75	m
2	NMDC	18.48	m
1	X/O	.44	m
1	NMDC	.56	m
1	X/O	.36	m
7	HWDP	65.65	m
1	JAR	5.43	m
23	HWDP	210.00	m
	BHA	309.03	m
69	D.P. STANDS	1977.85	m
		6.64	m
XX	D.P. SINGLES	19.26	m
	KELLYDOWN	.90	m
	TOTAL	2311.46	m
WT. OF DC		90000	1000 daN
WT. OF STRING		86000	1000 daN

BIT RECORD

BIT NO.	8 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N34ZF
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	$2\frac{3}{4}$

CUTTING STRUCTURE T	T_0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE ☒ WATER BASED ☐ OIL BASED

TIME	0600		
DENSITY kg/m³	[illegible]		
FUNNEL VIS. - (S/L)	60		
W.L. (cm³)	6.0		
pH	11.5		
PVT m^3	59.6		

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RMR CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)	DIR

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25	m
1	MOTOR / FLOAT SUB	6.21 / .75	m
1	[illegible]	.75	m
2	NMDC	18.48	m
1	X/O	.44	m
1	NMDC	.56	m
1	X/O	.36	m
7	HWDP	65.60	m
1	JAR	5.43	m
23	HWDP	210.20	m
	BHA =	309.03	m
69	D.P. STANDS	1977.85	m
		6.64	m
XX	D.P. SINGLES	17.76	m
	KELLYDOWN	.90	m
	TOTAL	2311.78	m
WT. OF DC		90000	1000 daN
WT. OF STRING		86000	1000 daN

BIT RECORD

BIT NO.	8 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N34ZF
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	$2\frac{3}{4}$

CUTTING STRUCTURE T	T_0	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE ☐ WATER BASED ☐ OIL BASED

TIME	1500		
DENSITY kg/m³	1150		
FUNNEL VIS. - (S/L)	60		
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)	DIRE

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial [illegible]
(3) H2S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial [illegible]
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial [illegible]

YEAR	MONTH	DAY
2001	01	12

RIG NO 58

FUEL @ 8:00

RIG 1.64 | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	220.5	77.4	[illegible]	[illegible]	129	[illegible]	4.71	2624.5

WEATHER		DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
TEMPERATURE	°C										
CURRENT CONDITIONS		127	74.35	[illegible]	76	[illegible]	[illegible] IF	33	F-1000	Emsco	254
WIND DIRECTION		127	36.47	E3	1.1	[illegible]	↓	178	F-1000	Emsco	254
ROAD		127	29.02	E3	115	[illegible]		174	F-[illegible]	Emsco	266.8

SAFETY MTG.	HANDLE TOOLS	[illegible]	[illegible]
14			
	2		
		3	
14	2	3	

TOTALS: 6, 6, 8, 4

SHALE SHAKER(S)	
NO. TYPE Derrick Ell.	
SCREENS CHANGED YES ☒ NO	
TOP [illegible]	TOP 175
MIDDLE [illegible]	MIDDLE [illegible]
BOTTOM [illegible]	BOTTOM [illegible]

RENTALS SERVICES

TMT 7C4

AMT 510912

Accom [illegible] 35

MORNING TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs	Code	Details
0000	0145	1¾	19	POOH with fish attempt #3 on 1⅞ tubing
				Retrieval [illegible] of wire line damage on spear
0145	0200	¼	[illegible]	Change [illegible] spear to 1m length.
0200	0300	1	19	RIH w/fishing assem. #3 tag @ 317m & work tubing
0300	0415	1¼	19	POOH w/fish run #3 pulled out some wire line
0415	0545	1½	19	RIH w/run #4 tag fish @ 316m & work tag
0545	08:00	2¼	19	POOH w/fishing run #4

NOTES ✓ Crown saver, [illegible] checked, [illegible]

Boiler: Blown down 3x

[signature]	8	105 350°	Fishing for wire line	5137 kPa

DAY TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs	Code	Details
0800	1000	2	23	Work on top drive [illegible]
[illegible]	1145	1¾	19	R.I.H. w/Run #5 tag fish @ 318m & work tubing
1145	1345	2	19	POOH w/Run #5
1345	1515	1½	19	R.I.H. w/Run #6. [illegible] fish @ 318m & work tbg.
1515	1600	¾	19	POOH w/Run #6

NOTES ✓ Crown saver, [illegible] checked, [illegible]

Boiler: Blown down 3x, Held [illegible]

[signature]	8	105 350°C	15000	Confined space entry	5151 kPa

EVENING TOUR

RECORD

METRES DRILLED FROM	TO	DRLD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

From	To	Hrs	Code	Details
16⁰⁰	21⁰⁰	5	19	P.O.O.H. w/ Run #6 no wireline
				RIG dn w/ fishing assembly & [illegible] spear
21⁰⁰	24⁰⁰	3	24	Attempt to fill drill pipe. No flow
				up annulus. Pressure up drill pipe
				to 10000 kPa bleed off air

NOTES Crown saver, E-[illegible], [illegible] anchor, brakes & linkage

[illegible] 3X

[signature]	3	[illegible] 350	[illegible]	5137 kPa

159228

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOPs - Pipelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)	Initial	Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)	Initial	Initial
(3) Mast Inspection Before Raising or Lowering	Initial	Initial
(4) Crown Saver Checked	Initial	Initial
(5) Motor Kills checked	Initial	Initial

YEAR 2001 MONTH
RIG NO. 54
FUEL
RIG 1.87
WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD ICY

LICENCE NO.:
WELL NAME AND NO.: Canadian Forest et al Northland c-31-A
OPERATOR: Canadian Forest Oil Ltd.
CONTRACTOR: Akita Drilling Ltd.
SURFACE LOCATION:
UNIQUE ID:
SIGNATURE OF OPERATOR'S REPRESENTATIVE:
SIGNATURE OF CONTRACTOR'S RIG MANAGER:

TIME (HRS)

CODE NO. / OPER	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG	Wait on fishing tools	Fishing Tool R	RIT	Fill 1⅛ Tubing Handl
MORN																						8			
DAY																					¼	6	1¾		
EVE																				1¾			3¼	1½	½
TOTAL																				1¾	¼	14	5	1½	½

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
1	MTK Float Sub	6.21 / .75 m
1	Res. Sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	UBHO Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.20 m
	BHA	309.03 m
64 / 2	D.P. / Pup Joints STANDS	1977.85 / 6.04 m
XX	D.P. SINGLES	19.26 m
	Rotary table to kelly bushing / Stick up	0.57 m
	TOTAL	2311.46 m
WT. OF DC		20000 daN
WT. OF STRING		84000 daN

BIT RECORD

BIT NO.	8 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GT51
SERIAL NO.	N342F
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2¼
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE: WATER BASED ☑ OIL BASED ☐

TIME	04:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	60
W.L. (cm³)	6.0
pH	11.5
Pv / Vis	83.2

MUD MATERIALS ADDED / SOLIDS CONTROL

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0	Centrifuge		

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE
152		152

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
1	Shock Float Sub	6.21 / .75 m
1	Res Sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	UBHO Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
33	HWDP	210.20 m
	BHA	309.03 m
64 / 2	D.P. Pup Joints STANDS	1977.85 / 6.04 m
XX	D.P. SINGLES	19.26 m
	KELLY DOWN	- .90 m
	TOTAL	2311.78 m
WT. OF DC		20000 daN
WT. OF STRING		84000 daN

BIT RECORD

BIT NO.	8 MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GT51
SERIAL NO.	N342F
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2¼
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

MUD TYPE: WATER BASED ☑ OIL BASED ☐

TIME	08:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	62
W.L. (cm³)	6.0
pH	11.5
Pv / Vis	83.6

MUD MATERIALS ADDED / SOLIDS CONTROL

PRODUCT	AMOUNT X UNIT
Biocide	1 pl

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0	Centrifuge		

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE
152		152

DEPTH (m)	DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
1	Flt Sub	6.21 / .75 m
1	Res Sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	UBHO Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.20 m
	BHA	309.03 m
64 / 2	D.P. Pup Joints STANDS	1977.85 / 6.04 m
XX	D.P. SINGLES	19.26 m
	Stick up / KELLY DOWN	.90 m
	TOTAL	2311.25 m
WT. OF DC		20000 daN
WT. OF STRING		84000 daN

BIT RECORD

BIT NO.	8 MRR	Fish BHA
SIZE (mm)	215.9	Bumper Sub 3E
IADC CODE		X/O
MFG.	HUGHES	Bumper Sub
TYPE	GT51	Jars
SERIAL NO.	N342F	X/O
JETS (mm)	3 x 11.1	
DEPTH OUT (m)		
DEPTH IN (m)	2303	
TOTAL METRES DRILLED (m)	8	
TOTAL HOURS RUN	2¼	Total
CUTTING STRUCTURE: T / T0 / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.		
HOLE DRAG		
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)		

MUD RECORD

MUD TYPE: WATER BASED ☑ OIL BASED ☐

TIME	22:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	62
W.L. (cm³)	6.0
pH	11.5
Pv / Vis	83.0

MUD MATERIALS ADDED / SOLIDS CONTROL

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
0	Centrifuge		

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm)	S.P.M.	LINER SIZE
152		152

DEPTH (m)	DEVIATION (°)

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	11	11

RIG NO 54

FUEL @ 8:00

RIG	BOILER
187	

WEATHER	
TEMPERATURE	-2 °C
CURRENT CONDITIONS	[illegible]
WIND DIRECTION	Calm
ROAD	[illegible]

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG. HEAD (m)	SET AT (m)
	244.5	216.7	77.4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
117	74.35	[illegible]	76	[illegible]	[illegible]	33	[illegible]	Emsco	254
117	35.17	E	[illegible]	[illegible]	[illegible]	135	[illegible]	Emsco	254
127	[illegible]	E	[illegible]	[illegible]	[illegible]	174	[illegible]	Emsco	[illegible]

DR. WORK	SAFETY MTG.				
	Wait for Tubing & Fishing Tools		Pull 1⅞ tubing		
	8				
3/4	6	1 3/4			
		3 1/4	1 1/2	1/2	
3/4	14	5	1 1/2	1/2	

TOTALS

SHALE SHAKERS

NO.	TYPE	
	[illegible]	
SCREENS CHANGED	YES	NO
TOP 145	TOP 175	
MIDDLE 145	MIDDLE 175	
BOTTOM 145	BOTTOM 175	

RENTALS SERVICES

TMT 511473

Salt 345

[illegible] 35

RECORD — MORNING TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3211.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0800	8	22	Wait for 1⅞ Tubing & Fishing Tools
				[illegible]
				[illegible]

NOTES ✓ Crown Saver, Fastline Clamp, Deadline [illegible]
[illegible] Blown Down 3X

[illegible]	8	165	350°	Jarring W/Top Drive	5137 kPa

RECORD — DAY TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3211.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge #2

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1400	6	22	Wait on 1⅞ Tubing & Fishing Tools.
1400	1545	1 3/4	33	Unload & [illegible] Tubing [illegible] To [illegible] Tubing
				[illegible]
1545	1600	1/4	21	Held Safety meeting on [illegible]

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor, Brakes & [illegible]
[illegible] Blown down 3X, Function Remote Choke, [illegible]

Gary [illegible]	0	165	350°C	[illegible]	5137 kPa

RECORD — EVENING TOUR

METRES DRILLED

FROM	TO	DRLD REAM CORE C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3211.46				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
C			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1800	2	23	Pick up 1⅞ Tubing [illegible]
1800	2015	2 1/4	19	[illegible] Fish @ 31[illegible]m, [illegible]
2015	2145	1 1/2	24	Pull out 1⅞ Tubing ~~[illegible]~~
2145				Retrieve Slumberger Wash Tank [illegible]
				Parted @ Rope Spear
	2215	1/2	25	Make new Jars - Bumper Sub & Rope Spear
2215	2330	1 1/4	23	Run in 1⅞ [illegible] Rope Spear [illegible] @ 32[illegible]
2330	2400	1/2	25	Attempt to latch on to Fish
				Remaining on [illegible]
				and [illegible] Slumberger [illegible]

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor
[illegible] Blown Down 3X

[illegible]	0	165	350	120 [illegible]	5137 kPa

FOLD HERE →

159227

LICENCE NO.:	WELL NAME AND NO.:
01900	Canadian Forest et al North [illegible]
OPERATOR:	CONTRACTOR:
[illegible]	Akita Drilling Inc
SURFACE LOCATION:	UNIQUE ID.:
[illegible]	[illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[signature]	[signature]

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial [illegible]
(3) H²S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Fl. lines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible]

RIG NO [illegible]

FUEL @ 8:

RIG [illegible] BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HOURS

OPER.	8 Rig Service	19 Fishing	21 Safety Mtg.	22 Wait on [illegible]	23 [illegible]
MORN.	1/4			7 3/4	
DAY		7 3/4	1/4		
EVE.		4 3/4	1/4		3
TOTAL	1/4	12 1/2	1/2	7 3/4	3

Column headings: CODE NO. / OPER. / RIG UP & TEAR DOWN / DRILL ACTUAL / REAMING / CORING / COND MUD & CIRC / TRIPS / RIG SERVICE / REPAIR RIG / CUT OFF DRILL LINE / DEV SURVEY / WIRE LINE LOGS / RUN CASE & CEMENT / WAIT ON CEMENT / NIPPLE UP B.O.P. / TEST B.O.P. / DRILL STEM TEST / PLUG BACK / SQUEEZE CEMENT / FISHING / DIR. WORK / SAFETY MTG.

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	Length
1	[illegible]	.55 m
1	MTR	[illegible] m
1	[illegible]	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	[illegible]	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	[illegible] m
	BHA	[illegible]
154	D.P. STANDS	1973.25
XX	D.P. SINGLES	[illegible] m
	KELLY DOWN	[illegible]
	TOTAL	2305
WT. OF DC		10000
WT. OF STRING		84000

BIT RECORD

BIT NO.	8MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GT-S1
SERIAL NO.	N342F
JETS (mm)	3X N.A
DEPTH OUT (m)	
DEPTH IN (m)	2301
TOTAL METRES DRILLED (m)	5
TOTAL HOURS RUN	[illegible]
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	48000 [illegible]
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: ☑ WATER BASED ☐ OIL BASED

TIME	06:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	58
W.L. (cm³)	6.0
pH	11.5
P.V.T.	81.5

MUD MATERIALS ADDED — PRODUCT / AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY (kg/m³) / UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRLG RM-R CORE-C	ROTARY R.P.M.
2311.46			

LINER SIZE (mm): 152 — S.P.M. — LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

DAY TOUR

DRILLING ASSEMBLY

No.	Item	Length
1	[illegible]	.55 m
1	MOTOR	6.21 m
1	Bit Sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	[illegible]	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	[illegible] m
	BHA	319.13
154	D.P. STANDS	1973.25
X	D.P. SINGLES	[illegible] m
	KELLY DOWN	[illegible] m
	TOTAL	[illegible] m
WT. OF DC		10000
WT. OF STRING		84000

BIT RECORD

BIT NO.	8MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GTS1
SERIAL NO.	N342F
JETS (mm)	3XNA
DEPTH OUT (m)	
DEPTH IN (m)	2301
TOTAL METRES DRILLED (m)	5
TOTAL HOURS RUN	
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	15:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	61
W.L. (cm³)	6.0
pH	11.5
PVT	84.5

MUD MATERIALS ADDED — PRODUCT / AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY — HOURS RUN: 0 — Centrifuge — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRLG RM-R CORE-C	ROTARY R.P.M.
2311.46			

LINER SIZE (mm): 152 — S.P.M. — LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

No.	Item	Length
1	[illegible]	.55 m
1	MTR	6.21
1	Bit Sub	.75 m
	Bit sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	UBHO SUB	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.80 m
	BHA =	319.13
154	D.P. STANDS	1973.25
2	pup jts	6.64
XV	D.P. SINGLES	19.25 m
1	Pup Jt	1.67
	Stick up	2.37
	TOTAL	2311.55 m
WT. OF DC		10000
WT. OF STRING		84000

BIT RECORD

BIT NO.	8MRR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GTS1
SERIAL NO.	N342F
JETS (mm)	3X N.A
DEPTH OUT (m)	
DEPTH IN (m)	2301
TOTAL METRES DRILLED (m)	5
TOTAL HOURS RUN	2 1/4
CUTTING STRUCTURE: T / T₀ / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: ☑ WATER BASED ☐ OIL BASED

TIME	21:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	60
W.L. (cm³)	6.0
pH	11.5
P. Vol.	84.0

MUD MATERIALS ADDED — PRODUCT / AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY — HOURS RUN: 0 — CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRLG RM-R CORE-C	ROTARY R.P.M.
2311.46			

LINER SIZE (mm): 152 — S.P.M. — LINER SIZE (mm)

DEPTH (m) / DEVIATION (°) / DIR.

[signature]

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7

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial [illegible]	Initial [illegible]
(3) H2S Signs Posted (if required)	Initial [illegible]	Initial [illegible]
(4) Well License & Stor Diagram Posted	Initial [illegible]	Initial [illegible]
(5) Flare Lines Staked	Initial [illegible]	Initial [illegible]
(6) BOP Drills Performed	Initial [illegible]	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible] DAY [illegible]

RIG NO [illegible]

FUEL @ 8:00

RIG [illegible] BOILER

WEATHER	
TEMPERATURE	°C
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
[illegible]	[illegible]	[illegible]	71	[illegible]	[illegible]	13	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	131	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		174	[illegible]	[illegible]	[illegible]

20	21	22	23	24	25	26	TOTALS
SAFETY MTG.	WORK [illegible]	[illegible]					
	7¾						
½							
½		3					
½	7¾	3					

SHALE SHAKER(S)

NO. TYPE [illegible]

SCREENS CHANGED YES × NO

TOP	TOP
140	175
MIDDLE	MIDDLE
[illegible]	[illegible]
BOTTOM	BOTTOM
140	135

RENTALS SERVICES

TMT [illegible]

[illegible] 154

[illegible] 35

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
[illegible]	[illegible]	¼	7	[illegible] KELLY [illegible]
[illegible]	0800	7¾	22	[illegible]
				HELD CAMP FIRE DRILL
				HELD [illegible] MEETING [illegible]

NOTES [illegible]

[illegible]

DRILLER SIGNATURE [illegible]

BOILER HRS. RUN	[illegible]	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD	[illegible]	[illegible]
8	[illegible]	350°	150 000 daN	CAMP FIRE DRILL	5137 kPa

DAY TOUR

RECORD

13.00
1240
61
6.0
11.5
84.5

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
0800				[illegible] SPOT [illegible]
				[illegible] @ 550 [illegible]
	1030	[illegible]	14	[illegible] 328.5 [illegible]
1030	1315	1¾	19	[illegible] 328m-311.70m
1315	1415	1	[illegible]	[illegible] TOOL [illegible]
				RUN [illegible] @ 313m
1415	1500	¾	[illegible]	[illegible]
1500	1515	¼	[illegible]	[illegible]
1515	1600	¾	[illegible]	[illegible]

NOTES [illegible]

[illegible]

DRILLER SIGNATURE [illegible]

BOILER HRS. RUN	[illegible]	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD	[illegible]	[illegible]
8	[illegible]	[illegible]	100 000 daN	FISHING [illegible]	5137 kPa

EVENING TOUR

D RECORD

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
311.46				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

REDUCED PUMP SPEED

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	ELAP. TIME	CODE	DETAILS
1600	1745		19	ATTEMPT TO BACK OFF [illegible], ATTEMPT Failed
				[illegible]
				[illegible] @ 311m
1745	1800	[illegible]	[illegible]	[illegible]
1800	1900	1	19	[illegible]
1900				PULL OFF & REMOVE SIDE ENTRY SUB
	2015		19	RUN BACK IN & SCREW BACK INTO SHOT JOINT
2015	2100	¾	19	[illegible] TAG FISH @ 318m
2100	2400	3	13	WAIT FOR SMALL STRING OF D.P.

NOTES [illegible] SAVES [illegible]

[illegible]

DRILLER SIGNATURE [illegible]

BOILER HRS. RUN	[illegible]	STACK TEMP	MAXIMUM EXPERIENCED HOOKLOAD	[illegible]	[illegible]
8	1051	350°	115 000 daN	FISHING [illegible]	5137 kPa

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159226

LICENCE NO.:	[illegible]
WELL NAME AND NO.:	Canadian Forest et al North [illegible] [illegible]-31A
OPERATOR:	[illegible] Forest Oil Inc
CONTRACTOR:	[illegible] Drilling Ltd
SURFACE LOCATION:	[illegible]
UNIQUE ID.:	[illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	[illegible]
SIGNATURE OF CONTRACTOR'S RIG MANAGER:	[illegible]

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial [illegible]
(3) H²S Signs Posted (if required)	Initial	Initial [illegible]
(4) Well License & Stick Diagram Posted	Initial	Initial [illegible]
(5) Flare Lines Staked	Initial	Initial [illegible]
(6) BOP Drills Performed	Initial	Initial [illegible]
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial [illegible]
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR [illegible] MONTH [illegible]

RIG NO. 58

FUEL @ 8:

RIG 111 BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.			[illegible]
MORN.																								8
DAY							1/4		3/4															7
EVE.																								8
TOTAL							1/4		3/4															23

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	Bit	.35 m
1	MTK [illegible] Sub	6.21 m
1	[illegible] Sub	.75 m
2	NMDC	18.46 m
1	X/O	.44 m
1	[illegible] Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.20 m
	[illegible]	309.03 m
76	D.P. STANDS	[illegible] m
	D.P. SINGLES	
[illegible]	KELLY DOWN	4.37 m
	TOTAL	2311.46 m
WT. OF DC		20000 daN
WT. OF STRING		[illegible] daN

BIT RECORD

BIT NO.	8 [illegible]
SIZE (mm)	[illegible]
IADC CODE	
MFG.	Hughes
TYPE	GT S1
SERIAL NO.	N347F
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2 1/4
CUTTING STRUCTURE T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	02:00	04:00	06:00
DENSITY kg/m³	1235	1240	1240
FUNNEL VIS. - (S/L)	55	50	56
W.L. (cm³)	6.0	6.0	7.0
pH	11.5	11.5	11.5
[illegible] m³	75.2	76.2	78.8

PRODUCT	AMOUNT X UNIT
Barite	[illegible] sx
Lignite	6 sx
Gel	55 sx
Soda Ash	1 sx
[illegible]	1 pl
Starch	2 sx
Desco	2 sx
[illegible]	1 sx

SOLIDS CONTROL: HOURS RUN 0; CENTRIFUGE: HOURS RUN 0 (INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY)

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm) 152 · S.P.M. · LINER SIZE 152

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	[illegible]	.35 m
1	MOTOR [illegible]	6.21 m
1	[illegible] Sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	[illegible]	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.20 m
	[illegible]	309.03 m
69 [illegible]	D.P. STANDS	1987.48
[illegible]	SINGLES	1.50 / 19.27 m
	KELLY DOWN	− 11.38 m
	TOTAL	2306.[illegible] m
WT. OF DC		20000 daN
WT. OF STRING		84000 daN

BIT RECORD

BIT NO.	9 [illegible]
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GT S1
SERIAL NO.	N134ZF
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2 1/4
CUTTING STRUCTURE T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	08:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	58
W.L. (cm³)	6.0
pH	11.5
[illegible] m³	78.9

PRODUCT	AMOUNT X UNIT
Potassium	56 sx
Caustic	1 sx
Lime	2 sx
[illegible]	1 pl

SOLIDS CONTROL: HOURS RUN 0; CENTRIFUGE: HOURS RUN 0 (INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY)

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm) 152 · S.P.M. · LINER SIZE 152

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	[illegible]	.35 m
1	MTK FIT Sub	6.21 m
1	[illegible] Sub	.75 m
2	NMDC	18.45 m
1	X/O	.44 m
1	[illegible] Sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.43 m
23	HWDP	210.20 m
	[illegible]	309.03 m
69	D.P. STANDS	1987.[illegible]
[illegible]	SINGLES	[illegible] m
[illegible]	KELLY DOWN	11.33 m
	TOTAL	[illegible] m
WT. OF DC		20000 daN
WT. OF STRING		[illegible] daN

BIT RECORD

BIT NO.	8 [illegible]
SIZE (mm)	[illegible]
IADC CODE	
MFG.	Hughes
TYPE	GT S1
SERIAL NO.	N347F
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2 1/4
CUTTING STRUCTURE T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	21:00
DENSITY kg/m³	1240
FUNNEL VIS. - (S/L)	58
W.L. (cm³)	6.0
pH	11.5
P.V. Tank	81.4

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN 0; CENTRIFUGE: HOURS RUN 0 (INTAKE DENSITY, OVERFLOW DENSITY, UNDERFLOW DENSITY)

METRES DRILLED

FROM	TO	DRG. RMR. CORE	ROTARY R.P.M.
2311.46			

LINER SIZE (mm) 152 · S.P.M. · LINER SIZE 152

DEPTH (m)	DEVIATION (°)	DIRECTION

[illegible]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR / MONTH / DAY

RIG NO. 5[illegible]

FUEL @ 8:00

RIG 111 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE
127	74.25	[illegible]	71	[illegible]	4 IF	17	[illegible]	[illegible]	[illegible]
127	36.7	E	71	165	↓	174	[illegible]	[illegible]	[illegible]
127	[illegible]	E	[illegible]	[illegible]		174	[illegible]	[illegible]	[illegible]

SAFETY MTG.

JAR & WORK STRING
8
7
8
[illegible]

TOTALS 24

SHALE SHAKERS

NO. TYPE [illegible]	
SCREENS CHANGED	☐ YES ☒ NO
TOP 140	TOP 175
MIDDLE 145	MIDDLE 175
BOTTOM 140	BOTTOM 175

RENTALS SERVICES

[illegible]
[illegible] 24
[illegible] .35

RECORD (MORNING TOUR)

04:00	06:00
1240	1240
50	56
6.0	7.0
11.5	11.5
76.2	78.8

HOURS RUN / INTAKE DENSITY (kg/m) / OVERFLOW DENSITY (kg/m) / UNDERFLOW DENSITY (kg/m)

0

CENTRIFUGE

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

0

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3311.44				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0800	8	25	JAR & WORK STRING

JAR STRING @ 140000 daN
WORK STRING UP TO 155000 daN

NOTES ✓ CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR
BOILERS BLOWN DOWN 3X

DRILLER'S SIGNATURE [illegible] | 8 | 103 350 | 155000 daN | 5137 kPa

RECORD (DAY TOUR)

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3311.44				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	—

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

0

Centrifuge

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

0

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1500	7	25	JAR & Work String
1500	1545	3/4	9	Slip&cut 20m of Drilline, ✓Crown Saver
1545	1600	1/4	7	RIS, Fluid on [illegible]

Jar String @ 140000 DAN
Work String up to 155000 daN
Inspect TopDrive & Derrick.

NOTES ✓ Crown Saver. Fastline Clamp, Deadline Anchor, Brake + Linkage, Boiler Blowndown 3X

DRILLER'S SIGNATURE [illegible] | 8 | 103 350°C | 155000 daN | Pulling Tight Hole 5137 KPA

RECORD (EVENING TOUR)

METRES DRILLED

FROM	TO	DRD REAM CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
3311.44				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

REDUCED PUMP SPEED

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

0

CENTRIFUGE

HOURS RUN / INTAKE DENSITY / OVERFLOW DENSITY / UNDERFLOW DENSITY

0

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2400	8	25	Work String up to 150,000 daN

NOTES ✓ CROWN SAVER. FASTLINE CLAMP DEADLINE ANCHOR
BOILERS BLOWN DOWN 3X

DRILLER'S SIGNATURE [illegible] | 8 | 103 [illegible] | 155000 | 5137 kPa

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159225

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	✓	✓
(2) Detailed Inspection-Weekly (using checklist)	✓	
(3) H2S Signs Posted (if required)	✓	
(4) Well License & Stick Diagram Posted	✓	
(5) Flare Lines Staked	✓	
(6) BOP Drills Performed	✓	
(7) Visually inspect BOPs - Flarelines & Degasser Lines	✓	
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		
(3) Meet Inspect on Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills checked		

YEAR: 2001 MONTH: 01
RIG NO: 58
FUEL
RIG: 1.32

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: KCC
WELL NAME AND NO.: Canadian Forest et al North [illegible] c-31-I
OPERATOR: Canadian Forest Oil Ltd.
CONTRACTOR: Akita Drilling Ltd.
SURFACE LOCATION: [illegible]
UNIQUE ID: [illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]
SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME (HOURS)

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MTG.	Flow check		Gyro	[illegible]
MORN.					2 3/4																	1/4			
DAY					1 1/4	3 3/4	1/4																1 1/2	1 1/2	
EVE		1/4																		1/2					3 3/4
TOTAL		1/4			-	7 1/4	1/4													1/2		1/4	1 1/2	1 1/2	3 3/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Drill [illegible]	1.72 m
1	[illegible]	4.71 m
13	HWDP	115.63 m
1	Jar	5.3[illegible] m
17	HWDP	156.17 m
		m
	BHA	160.23 m
70 D.P.	STANDS	
X D.P.	SINGLES	2016.36 m
Stick up	KELLYDOWN	5.44 m
	TOTAL	2303
WT. OF DC	17000	
WT. OF STRING	85000	

BIT RECORD

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
TYPE		
SERIAL NO.		
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE: T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.

HOLE DRAG: Normal [illegible]
TORQUE AT BOTTOM: 14000 [illegible]
FILL ON BOTTOM (m): –

MUD RECORD

TIME	01:00	03:00
DENSITY kg/m³	1160	1180
FUNNEL VIS. - (S/L)	88	83
W.L. (cm³)	7.5	8.0
pH	10.5	11.0
P.V. m³	69.4	73.4

PRODUCT	AMOUNT X UNIT
Barite	244 sx
Lignite	4 sx
[illegible]	1 ol
T-352	1 ol
Caustic	1 sx
Lime	1 sx

HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)
HOURS RUN: 0
CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRG REAM CORE	ROTARY R.P.M.
2303			

	LINER SIZE (mm)	S.P.M.
4450	152	
2550	55	

DEPTH (m) | DEVIATION (°)

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	motor	6.21 .75 m
1	Rest sub	.75 m
2	NMDC	18.48 m
1	[illegible]	.35 m
1	UBHO sub	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
23	HWDP	210.20 m
	BHA:	309.03
70 D.P.	STANDS	2006.75 m
– D.P.	SINGLES	– m
	KELLYDOWN	-19.78 m
	TOTAL	2296.00 m
WT. OF DC	20 000	
WT. OF STRING	84000	

BIT RECORD

BIT NO.	8M RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GTS1
SERIAL NO.	N342F
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.

HOLE DRAG
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	
PVT m³	

PRODUCT	AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY
HOURS RUN: 0
CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRG REAM CORE	ROTARY R.P.M.
2303			

LINER SIZE (mm) | S.P.M.

DEPTH (m) | DEVIATION (°)

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	MTR	6.8 .75 m
1	Res. sub	.75 m
2	NMDC	18.48 m
1	X/O	.44 m
1	UBHO sub	.54 m
1	X/O	.36 m
7	HWDP	65.60 m
1	Jar	5.43 m
23	HWDP	210.20 m
	BHA:	309.03
70 D.P.	STANDS	2006.75 m
D.P.	SINGLES	
Stick up	KELLYDOWN	4.70
	TOTAL	2311.46 m
WT. OF DC	20000	
WT. OF STRING	84000	

BIT RECORD

BIT NO.	8M RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Hughes
TYPE	GTS1
SERIAL NO.	N342F
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2303
TOTAL METRES DRILLED (m)	8
TOTAL HOURS RUN	2 1/4

CUTTING STRUCTURE: T, T₀, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.

HOLE DRAG: [illegible]
TORQUE AT BOTTOM
FILL ON BOTTOM (m)

MUD RECORD

TIME	19:30	21:30	23:30
DENSITY kg/m³	1175	1195	1225
FUNNEL VIS. - (S/L)	80	66	58
W.L. (cm³)	9.0	7.0	7.0
pH	10.5	10.0	10.0
P.V.T. m³	74.2	74.5	74.2

PRODUCT	AMOUNT X UNIT

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY
CENTRIFUGE — HOURS RUN

METRES DRILLED

FROM	TO	DRG REAM CORE	ROTARY R.P.M.
2303	2311.46		

	LINER SIZE (mm)	S.P.M.
4000	152	90

DEPTH (m) | DEVIATION (°)

[signature]

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DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stack Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)	Initial	
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/rig/month)	Initial	
(3) Mast Inspection Before Raising or Lowering	Initial	
(4) Crown Saver Checked	Initial	
(5) Motor Kills checked	Initial	

YEAR	MONTH	DAY
[illegible]	[illegible]	14

RIG NO 58

FUEL @ 8:00

RIG | BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5.71	[illegible]

WEATHER: TEMPERATURE °C / CURRENT CONDITIONS / WIND DIRECTION / ROAD

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	Hw	76	159	4½ IF	33	F-1000	Emsco	254
127	38.17	E	101	162		135	F-1000	Emsco	254
127	29.02	E	108	162		174	F-800	Emsco	229

TOTALS	SHALE SHAKER(S)	RENTALS SERVICES
4	NO. 2 TYPE Derrick FLC	Tuat 57854
4	SCREENS CHANGED ☐ YES ☒ NO	[illegible]
4	TOP 140 / TOP 175	[illegible]
4	MIDDLE 140 / MIDDLE 175	
24	BOTTOM 140 / BOTTOM 175	

1/4							
		1½	1½				
				3 3/4			
1/4		1½	1½	3 3/4			

MORNING TOUR

RECORD

03:00
1180
83
8.0
11.0
73.4

METRES DRILLED

FROM	TO	DRD. R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2303				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
4450	152		152	65
2550		65		50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0345	3¾	5	Circ & increase mud density to 1200 kg/m³
0345	0400	¼	[illegible]	Up one single, flow check, pump pill
0400	0800	4	6	P.O.O.H. [illegible]
				[illegible]

Trip Record - meas: 13.71
Cal: 10.92
DIFF: 2.79

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boilers Blown Down 3X

6	105 350°	105 000 daN	6410 kpa

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRD. R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2303				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	—

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	0930	1½	23	Make up motor assembly, Pick up New Jars
				SN Fusion - 10135
0930	1015	¾	6	Make up BHA, R.I.H. To 335m
1015	1045	½	5	Test MWD @ 335m, Pulse = 37 PSI @ 87 spm
1045	1100	¼	7	RIS Function Lower Pipe Rams 6 sec/ck.
1100	1345	2¾	6	R.I.H. Flow/Fill Pipe every 500m
1345	1430	¾	5	Circulate. To Clean Gyro Set Area.
1430	1600	1½	24	Rig up & Run [illegible] Gyro

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage -
Boiler Blowdown 3x Held Camp Fire Drill

5	116.5 350°C	99000 daN	Wind Conditions	6490 KPA

EVENING TOUR

RECORD

21:30	23:30
1145	1225
65	58
7.0	7.0
10.0	10.0
74.5	74.2

METRES DRILLED

FROM	TO	DRD. R&R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2303	2311.46		[illegible]	7/14

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
4000	152	90	152	

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	1800	2	20	Orientate through window & start side track
1800	2015	2¼	2	Slide 2303m - 2311.46m
2015	2115	1	25	Work pipe stuck @ 2310m
2115	2400	2¾	25	Work / Jar string

JAR @ 140 000 daN
Pull string up to 150 000 daN

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boilers Blown Down 3X

5	105 350°	150 000 daN	5474 kpa

159224

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LICENCE NO.:	WELL NAME AND NO.:		
1900	Canadian Forest et al North Liard c-31A		
OPERATOR:	Canadian Forest Oil Ltd.	CONTRACTOR:	Akita Drilling Ltd.
SURFACE LOCATION:	300 C31A 6040 12330 0	UNIQUE ID.:	300 C31A 6040 12330 0
SIGNATURE OF OPERATOR'S REPRESENTATIVE:		SIGNATURE OF CONTRACTOR'S RIG MANAGER:	

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial
(3) H2S Signs Posted (if required) — Initial
(4) Well License & Stack Diagram Posted — Initial
(5) Flare Lines Staked — Initial
(6) BOP Drills Performed — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR 2001 MONTH 01

RIG NO. 56

FUEL

RIG 1.56

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME (HRS)

CODE NO.	OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV. SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Dry Fire	Handle Tools	Fish 1	L/D Pipe
	MORN.					1½																	6½			
	DAY					½	5 ½																	2	¼	
	EVE.		¾			1½	3¾																			1¾
	TOTAL		¾			4½	9¼	¼															6½	2	¼	1¾

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.45 m	
1	MTK	6.15	
1	FLT SUB	.75 m	
1	KLS SUB	.76 m	
3	NMDC	27.13 m	
1	X/O	.44 m	
1	Circulating Sub	.61 m	
1	X/O	.36 m	
7	HWDP	15.60 m	
1	JAR	5.56 m	
23	HWDP	210.06 m	
	BHA	318.03 m	
69	D.P. STANDS	[illegible]	m
–	D.P. SINGLES	–	m
	KELLYDOWN	5.36	m
	TOTAL	[illegible]	
	WT. OF DC	24000	1000 daN
	WT. OF STRING	90000	1000 daN

BIT RECORD

BIT NO.	7RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	ATSI
SERIAL NO.	N3417F
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.
2	3	CT	H	E	I	NO		

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD

TIME	03:00
DENSITY kg/m³	1140
FUNNEL VIS. - (S/L)	55
W.L. (cm³)	7.0
pH	10.0
P.V.T.	63.3

PRODUCT	AMOUNT X UNIT
Barite	42 sx
Lignite	1 sx

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.
2302			

	LINER SIZE (mm)	S.P.M.	LINER SIZE
5500	152		152

DEPTH (m)	DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit [illegible]		1.76 m
1	5595 [illegible]	127	9.71 m
13	HWDP	127	119.63 m
1	JAR	170	5.36 m
17	HWDP	127	156.17 m
		BHA	292.63
	D.P. STANDS		m
	D.P. SINGLES		m
	KELLYDOWN		m
	TOTAL		m
	WT. OF DC	17000	1000 daN
	WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 10000 & 10000 [illegible]

TORQUE AT BOTTOM 8500 FT/lb

FILL ON BOTTOM (m) —

MUD RECORD

TIME	0900
DENSITY kg/m³	1140
FUNNEL VIS. - (S/L)	58
W.L. (cm³)	7.0
pH	10.0
P.V.T.	63.6

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY
0			
Centrifuge			
0			

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.
2302			23

	LINER SIZE (mm)	S.P.M.	LINER SIZE
5500	152	–	152
3600		59	

DEPTH (m)	DEVIATION (°)

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Dull Hole		1.76 m
1	5595 DJ	127	9.71 m
13	HWDP	127	119.63 m
1	JAR	170	5.36 m
17	HWDP	127	156.17 m
		BHA	292.63
70	D.P. STANDS		m
x	D.P. SINGLES	2016.36	m
Stickup	KELLYDOWN	5.99	m
	TOTAL	2303	m
	WT. OF DC	17000	1000 daN
	WT. OF STRING	65000	1000 daN

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
TYPE	
SERIAL NO.	
JETS (mm)	
DEPTH OUT (m)	
DEPTH IN (m)	
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG 8000 ↑ 12000 ↓

TORQUE AT BOTTOM 4-15000 FT LBS

FILL ON BOTTOM (m) 0

MUD RECORD

TIME	23:00
DENSITY kg/m³	1150
FUNNEL VIS. - (S/L)	62
W.L. (cm³)	7.5
pH	10.5
P.V.T.	63.3

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY	OVERFLOW DENSITY	UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD-RMR-CORE-C	ROTARY R.P.M.
2302.5	2303	C	50

	LINER SIZE (mm)	S.P.M.	LINER SIZE
3650	152		152
2400			

DEPTH (m)	DEVIATION (°)

FOLD HERE →

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (4 required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
2001	07	7

RIG NO. 56

FUEL @ 8:00

RIG 1.56 BOILER

WEATHER: TEMPERATURE °C; CURRENT CONDITIONS; WIND DIRECTION; ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	216.7	79.61	BTC	N80	183	2632.87	5.76	2629.5

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.35	HW	71	165	4 IF	33	F-1000	Emsco	254
127	38.27	G	111	151	↓	136	F-1000	Emsco	254
127	29.02	E2	108	165	↓	174	F-800	Emsco	254

SAFETY MTG.				TOTALS
Dry Fire	Hazardous Equip.	Wk. 2		
1½				9
	2	¼		6
			1¾	6
1½	2	¼	1¾	24

SHALE SHAKER(S)

NO. TYPE 2 Derrick FLC

SCREENS CHANGED ☐ YES ☒ NO

TOP 140	TOP 175
MIDDLE 140	MIDDLE 175
BOTTOM 140	BOTTOM 175

RENTALS SERVICES

TMI 50765F

AMJ 8287

Accum Oil .35

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2302				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5500	152		152	60

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0000	0630	6½	22	Work & JAR STRING 2301m-2291m
0630	0800	1½	5	Circ. Bottoms up

~~[illegible]~~

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boilers Blown Down 3X

[signature]	8	105	350°	140 000 daN		8088 kPa

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2302			33	0

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5500	152	-	152	80
3600				50

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

0800	0830	½	5	Circulate & Clean hole.
0830	0845	¼	7	RIS Function TOP Pipe Rams 6 secs ✓ RSPP
0845	0945	1	6	Pull 5 stands Flow ✓ Pump Pill Blow out Kelly
0945	1345	4	6	P.O.O.H. Flow ✓ E 1290m HWDP,
1345	1430	¾	25	[illegible] motor
1430	1445	¼	24	Flow ✓ [illegible] Blind Rams 6 secs
1445	1600	1¼	23	measure & make up milling BHA.

Trip Record - [illegible] - 14.88
[illegible] - 11.56
Diff - 3.32

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & linkage.
Boilers Blown down 3X, ✓ TOP Drive after tripping.

[signature]	8	105	350°C	9400 daN	Tripping	8088 kPa

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2302.5	2303	1	60	½

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
3656	152		152	65
2400				60

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

1600	1645	¾	6	Make up mill BHA.
1645	1830	1¾	25	R.I.H. Then Lay down 27 Joints 3½" E2.
				Measure Pipe & Adjust Tally
1830	2130	3	,	R.I.H. TO 2270m
2130	2245	1¼	5	Brk Circ. & Wash 2270m - 2302m
2245	2300	¼	2	Drill 2302.5 m 2303m
2300	2400	1	5	Pull up into Casing & Cond. MUD

Torque Increase @ 2295.5m
from 9000 FT/lbs to 15000 FT/lbs

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boilers Blown Down 3x

[signature]	8	105	350°	90 000 daN		1393 kPa

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159223

LICENCE NO.: 1900	WELL NAME AND NO.: Canadian Forest et al North Leduc C-31-A	
OPERATOR: Canadian Forest Oil LTD	CONTRACTOR: Akita Drilling LTD	
SURFACE LOCATION: 3-C C31A 11/40 W3300	UNIQUE ID.: 3-C C31A 60/40 W330 0	
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:	

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H²S Signs Posted (if required)		
(4) Well License & Shot Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one/crew/month)		initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		initial
(3) Mast inspection Before Raising or Lowering		initial
(4) Crown Saver Checked		initial
(5) Motor Kills checked		initial

YEAR 01 MONTH 01 · RIG NO. 54

FUEL 8:0 · RIG 1,54 · BOILER

WEATHER: TEMPERATURE · CURRENT CONDITIONS · WIND DIRECTION · ROAD

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	Handle Tools	GYRO		Wait on ...
MORN.					1/4	5¼	¼															2¼			
DAY						1	¼													4			2¾		
EVE.																				½		¾	3¾		3¼
TOTAL					¼	6½	½													4½		3	6½		3¼

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	MOTOR FL-SUB	6.13 m
1	RES SUB	.75 m
3	NMDC	27.63 m
1	X/O	.44 m
1	CENT SUB	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.36 m
23	HWDP	210.30 m
	BHA = 315.03	m
	D.P. STANDS	m
	D.P. SINGLES	m
	KELLYDOWN	m
	TOTAL	m
WT. OF DC	24000	1000 daN
WT. OF STRING		1000 daN

BIT RECORD

BIT NO.	7 m	
SIZE (mm)	215.9	
IADC CODE		
MFG.	HUGHES	
TYPE	GTS1	
SERIAL NO.	N34ZF	
JETS (mm)	3x11.1	
DEPTH OUT (m)		
DEPTH IN (m)	2302	
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		
CUTTING STRUCTURE T_1 T_2 MDC LOC · B · Gage · ODC · Reason Pulled · Total Run m/hr.		
HOLE DRAG		
TORQUE AT BOTTOM		
FILL ON BOTTOM (m)		

MUD RECORD

TIME	03:00
DENSITY kg/m³	1140
FUNNEL VIS. - (S/L)	55
W.L. (cm³)	7.0
pH	10.0
PVT m³	63.3

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
5			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2302			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
127		127

DEPTH (m)	DEVIATION (°)	DIR

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		.25 m
1	MOTOR FLOAT SUB	6.13 m
1	RES SUB	.75 m
3	NMDC	27.63 m
1	X/O	.44 m
1	CENT SUB	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.36 m
23	HWDP	210.30 m
	BHA - 318.03	m
71	D.P. STANDS	m
XX	D.P. SINGLES	1997.47 m
	KELLYDOWN	-14.50 m
	TOTAL	2301.00 m
WT. OF DC	24000	1000 daN
WT. OF STRING	92000	1000 daN

BIT RECORD

BIT NO.	7m
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GTS1
SERIAL NO.	N34ZF
JETS (mm)	3X11.1
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE T_1 T_2 MDC LOC · B · Gage · ODC · Reason Pulled · Total Run m/hr.	
HOLE DRAG	12000 FV
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	
PVT m³	

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

Centrifuge

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2302			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
7400	152		152

DEPTH (m)	DEVIATION (°)	DIR

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1		.25 m
1	MTR FLSUB	6.13 m
1	RES SUB	.75 m
3	NMDC	27.63 m
1	X/O	.44 m
1	CENT SUB	.56 m
1	X/O	.36 m
7	HWDP	65.60 m
1	JAR	5.36 m
23	HWDP	210.30 m
	BHA	318.03 m
69	D.P. STANDS	m
X	D.P. SINGLES	1987.96 m
	Stick up	3.97 m
	TOTAL	2302 m
WT. OF DC	24000	1000 daN
WT. OF STRING	90000	1000 daN

BIT RECORD

BIT NO.	7m
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	GTS1
SERIAL NO.	N34ZF
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2302
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE T_1 T_2 MDC LOC · B · Gage · ODC · Reason Pulled · Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	1125
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2302			

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
152		152

DEPTH (m)	DEVIATION (°)	DIR

FOLD HERE ➔

3

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial

(1) Rig Site Health and Safety Meeting (one/crew/month)	Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)	Initial
(3) Mast Inspection Before Raising or Lowering	Initial
(4) Crown Saver Checked	Initial
(5) Motor Kills checked	Initial

YEAR | MONTH | DAY 12

RIG NO

FUEL @ 8:00

RIG 1.5 4 | BOILER

WEATHER: TEMPERATURE °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING, TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	189	[illegible]	5.70	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	29.3	[illegible]	71	[illegible]	[illegible]	33	[illegible]	Emsco	254
127	[illegible]	E	[illegible]	[illegible]		158	[illegible]	Emsco	254
127	[illegible]	E	[illegible]	[illegible]		171	[illegible]	Emsco	228.6

CH. WORK	SAFETY MTG.	Handle Tools	GYRO		Wait on ...	TOTALS
		2 1/4				
			3/4			
3/4		3/4	3 3/4	3 1/4		8
1/4		3	6 1/2	3 1/4		24

SHALE SHAKER(S): TYPE [illegible] | SCREENS CHANGED YES ✓ NO | TOP 110 / 175 | MIDDLE 110 / 175 | BOTTOM 110 / 175

RENTALS SERVICES: [illegible] 505152 | [illegible] 5781 | [illegible] .35

MORNING TOUR

RECORD | METRES DRILLED: FROM 2302 | TO | DRD RM-R CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) 127 | S.P.M. | LINER SIZE (mm) 127 | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³): 0

CENTRIFUGE: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY: 0

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0000	0200	2	6	P.O.O.H. Hang 35 stds, Out of Hole
0200	0215	1/4	7	Rig Service, Function Blind rams Accu. c/s
0215	0430	2 1/4	22	M/U Bit Motor & MWD Tools [illegible] Tools
0430	0530	1	6	R.I.H. To 345 m
0530	0545	1/4	5	Fill Pipe & Test MWD Tool
0545	0800	[illegible]	6	R.I.H. From 345m - 1665 ... Fill Pipe every 350.

Trip Record: [illegible] 11.75 m³ [illegible] 13.15 m³ Diff 2.[illegible]

NOTES ✓ Crown Saver, Fastline Clamp, Deadline Anchor
Boilers Blown Down 3x

[signature] | 6 | [illegible] | 350

DAY TOUR

RECORD | METRES DRILLED: FROM 2302 | TO | DRD RM-R CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

7400 | LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152 | S.P.M. 90

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY: 0

Centrifuge: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY: 0

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	0815	1/4	7	Rig Function [illegible] 19 [illegible] c/s
0815	0915	1	6	R.I.H. From 1665 m - 2293 m Fill Pipe every 350 m
0915	1000	3/4	20	Break Circ, Circ [illegible] Attempt Survey w/ MWD
				Attempt To orient motor & Slide outside window.
1000	[illegible]	3/4	23	Rig up & Run Gyro, ~~[illegible]~~
[illegible]	1315	1/2	20	Orient motor Attempt To Slide out window
1315	1600	2 3/4	20	[illegible] 100 [illegible] Attempt To Slide out window
				Run Gyro [illegible]
				Gyro & Attempt To Slide out window.

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor Brakes & Linkage.
Boilers Blown Down 3x, Greased Crown & Blocks.

[signature] | 8 | [illegible] 350 | 115000 daN | Running GYRO | 8096 kPa

EVENING TOUR

RECORD | METRES DRILLED: FROM 2302 | TO | DRD RM-R CORE-C | ROTARY R.P.M. | WT. ON BIT (1000 daN)

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 152 | S.P.M.

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	1700	1	23	Pull out Gyro due to Failure.
1700	1715	1/4	20	Attempt To Slide motor out window.
1715	1845	1 1/2	24	Motor Stalled. Work Pipe & Try To free motor.
1845				Rig up To Break out [illegible] Tool Joint.
	1930	3/4	22	Lay Down Top Joint of DP
1930	2215	2 3/4	23	Rig up & Run Gyro / Pull Gyro out
2215	2400	1 3/4	24	Work and Jar String

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boiler Blown Down 3x

[signature] | 8 | 108 350 | 135000 daN | 1112 kPa

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159222

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting		initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist		initial
(3) Mast Inspection Before Raising or Lowering		initial
(4) Crown Saver Checked		initial
(5) Motor Kills checked		initial

YEAR	MONTH

RIG NO.

FUEL

RIG 1.03

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 19[illegible]	WELL NAME AND NO.: [illegible] 31A
OPERATOR: [illegible]	CONTRACTOR: [illegible]
SURFACE LOCATION: [illegible]	UNIQUE ID: [illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	[illegible]	Milling
MORN.					1/2	1														2		5 1/4	1/4
DAY																							8
EVE.					2 1/2	1 1/2																	4
TOTAL					3	1 1/2														2		4 1/4	12 1/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		METRES
		5.52 m
	mill	1.98 m
	x/o	.41 m
	[illegible]	.56 m
	[illegible]	.36 m
	[illegible]	9.71 m
30	HWDP	[illegible] m
		[illegible] m
70	D.P. STANDS	2007.[illegible] m
1	D.P. SINGLES	7.57 m
	KELLY DOWN	7.06 m
	TOTAL	2304 m
	WT. OF DC	18000 daN
	WT. OF STRING	87000 daN

BIT RECORD

BIT NO.	Mill 1
SIZE (mm)	215.9
IADC CODE	
MFG.	Smith
TYPE	[illegible]
SERIAL NO.	TM9506
JETS (mm)	Open
DEPTH OUT (m)	
DEPTH IN (m)	2304
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T_i / T_o / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME			
DENSITY kg/m³			
FUNNEL VIS. - (S/L)			
W.L. (cm³)			
pH			

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2304			60
2298			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
2900	152		152

DEPTH (m)	DEVIATION (°)	DIR.

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		METRES
	[illegible]	m
1	mill	1.98 m
1	x/o	.41 m
1	UBHO	.56 m
1	x/o	.36 m
1	[illegible]	9.71 m
30	HwDP	276.0[illegible] m
	3[illegible]	289.03 m
70	D.P. STANDS	m
x	D.P. SINGLES	2016.4 m
	KELLY DOWN	m
	TOTAL	m
	WT. OF DC	16000 daN
	WT. OF STRING	82000 daN

BIT RECORD

BIT NO.	Mill 1
SIZE (mm)	215.9
IADC CODE	
MFG.	Smith
TYPE	Tru Mastr
SERIAL NO.	TM9506
JETS (mm)	Open
DEPTH OUT (m)	
DEPTH IN (m)	2297.50
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T_i / T_o / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	
HOLE DRAG	2-5000 DaN
TORQUE AT BOTTOM	12-16000 ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	10:00	12:30	16:00
DENSITY kg/m³	1150	1140	1130
FUNNEL VIS. - (S/L)	54	64	62
W.L. (cm³)	7.5	7.5	7.5
pH	10.5	10.5	10.5
P.V.T. m³	61.7	60.3	61.4

PRODUCT	AMOUNT X UNIT
Potassium	48 sx
Soda ash	3 sx
[illegible]	3 sx
T-352	1 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
	1150	1010	1770
8	1150	1060	1650
8			

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2297.50	2299.20	1.70	90 / 115
milling			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
3100	152		152

DEPTH (m)	DEVIATION (°)	DIR.

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

			METRES
1	mill		1.98 m
1	x/o		.41 m
1	UBHO		.56 m
1	x/o		.36 m
1	[illegible]	177	9.71 m
30	HWDP	127	276.01 m
	3-1-		289.03 m
70	D.P. STANDS		m
X	D.P. SINGLES		3016.40 m
	KELLY DOWN		3.17 m
	TOTAL		2302.26 m
	WT. OF DC		18000 daN
	WT. OF STRING		82000 daN

BIT RECORD

BIT NO.	mill #1
SIZE (mm)	215.9
IADC CODE	
MFG.	Smith
TYPE	Tru Mastr
SERIAL NO.	TM9506
JETS (mm)	open
DEPTH OUT (m)	2302.26
DEPTH IN (m)	2297.50
TOTAL METRES DRILLED (m) milled	4.76
TOTAL HOURS RUN	12
CUTTING STRUCTURE: T_i / T_o / MDC / LOC / B / Gage / ODC / Reason Pulled / Total Run m/hr.	.40
HOLE DRAG	5000 ↑ 11000 ↓ DaN
TORQUE AT BOTTOM	13-20000 ft/lbs
FILL ON BOTTOM (m)	—

MUD RECORD

TIME	18:30	21:00
DENSITY kg/m³	1125	1125
FUNNEL VIS. - (S/L)	60	57
W.L. (cm³)	7.0	7.6
pH	10.5	10.5
PVT m³	61.8	62.8

PRODUCT	AMOUNT X UNIT
Kelzan	2 sx
Barite	42 sx

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
6	1135	1000	1890
6	1125	1000	1850

Centrifuge

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2299.20	2302.26	3.06	60 / 110

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
3050	152		152

DEPTH (m)	DEVIATION (°)	DIR.

Gary Patrick

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (once/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (once/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY

RIG NO.

FUEL @ 8:00

RIG 1,073 | BOILER

WEATHER: TEMPERATURE °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING TUBING OR LINER	O D (mm)	MIN I D (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL(m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O D (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SAFETY MTG.			
	[illegible]	Milling	
	9½	¼	
		8	
		4	
	4½	12½	

TOTALS

SHALE SHAKER(S)

NO. TYPE

SCREENS CHANGED YES Y NO

TOP | TOP

MIDDLE | MIDDLE

BOTTOM | BOTTOM

RENTALS SERVICES

[illegible]

4/51

36

RECORD

	METRES DRILLED				
	FROM	TO	DRLD REAM CORE.C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
MORNING TOUR	2301			10	½
	2296				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
2400	152		152	60

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
[illegible]	[illegible]	1	6	Kill Mellon - 22[illegible]
0100	0130	½	5	Circ Pill Displace [illegible]
0130	0245	1¼	22	Rig up Schlum[illegible]
0245	0330	¾	22	[illegible]
0330	0530	2	20	[illegible] Tool - Set Slips To [illegible]
[illegible]	[illegible]	[illegible]	22	Gyro [illegible] @ 2303 m
[illegible]	0715	[illegible]	22	[illegible]
0715	0745	½	22	Rig out wireline
0745	0800	¼	23	Start milling 2298.5 m

NOTES [illegible]
Boiler Blow down 3x

Les [illegible] | 8 | 1103 | 350 | 100 000 | DR.066 PLUGS | 1624 KPA

RECORD

12:30	16:00
1140	1130
64	62
7.5	7.5
10.5	10.5
60.3	61.4

	METRES DRILLED				
	FROM	TO	DRLD REAM CORE.C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
DAY TOUR	2297.5	2299.20	1.70	95/115	15
	milling				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
3100	152		152	60

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
	1150	1010	1720
8	1150	1060	1650
8			

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
0800	1600	8	23	Start milling window 2297.5m - 2299.20

NOTES ✓ Crown Saver Fastline Clamp Deadline Anchor
Boilers Blown down

[illegible] | 8 | 1103 | 350 | 62 000 daN | | 1656 kPa

D RECORD

21:00
1125
57
7.6
10.5
62.9

	METRES DRILLED				
	FROM	TO	DRLD REAM CORE.C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
EVENING TOUR	2299.20	2302.26	3.06	60/70	1/7

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
3050	152	-	152	60

DEPTH (m) | DEVIATION (°) | DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
6	1125	1000	1840
	Centrifuge		
6	1125	1000	1820

TIME LOG				DETAILS OF OPERATION IN SEQUENCE AND REMARKS
1600	2000	4	23	Mill Casing Window F/2299.20m - 2302.26m
2000	2200	2	5	Pump 3m³ Hi Vis Pill Circulate & Clean hole.
				Pumped Total 9m³ Hi-Vis Pills Today.
2200	2230	½	5	Flow, Pump Pill Blow out Kelly.
2230	2400	1½	6	P.O.O.H. Flow [illegible]

NOTES ✓ Crown Saver Fastline Clamp Deadline [illegible] Stairs & Handrails
Boiler Blown down 3x, Tested Flare Igniter

[illegible] | 8 | 1103 | 350 | 100000 daN | Icy Work Condition

159221

LICENCE NO.: 1900[illegible]	WELL NAME AND NO.: [illegible]		
OPERATOR: [illegible]	CONTRACTOR: [illegible]		
SURFACE LOCATION: [illegible]	UNIQUE ID: [illegible]		
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [illegible]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [illegible]		

DAILY CHECKS — OPR. / R.M.

(1) Daily Walk Around Inspection — Initial [illegible] — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial — Initial
(3) H2S Signs Posted (if required) — Initial — Initial
(4) Well License & Stack Diagram Posted — Initial [illegible] — Initial
(5) Flare Lines Staked — Initial [illegible] — Initial
(6) BOP Drills Performed — Initial [illegible] — Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines — Initial [illegible] — Initial

(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR [illegible] MONTH [illegible]
RIG NO. [illegible]
FUEL @ 8:0[0]
RIG 12[illegible] BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME - HRS

OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	Handle tools
MORN					[illegible]	4																
DAY					1/4	1/2	1/4				6				1/4							1/4
EVE						11 1/2																3 1/2
TOTAL					1/4	[illegible]	1/4				6				1/4							3 3/4

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

			25 m
	[illegible]		1.11 m
	[illegible]		1.07 m
	[illegible]		[illegible] m
	[illegible]		[illegible] m
	DC		99.45 m
	[illegible]		1.51 m
			m
		BHA	[illegible] m
72	D.P.	STANDS	[illegible] m
	D.P.	SINGLES	m
	KELLYDOWN		21.79 m
	TOTAL		[illegible]350 m
WT. OF DC		21080	1000 daN
WT. OF STRING		[illegible]180	1000 daN

BIT RECORD

BIT NO.	[illegible]
SIZE (mm)	[illegible]9
IADC CODE	
MFG.	[illegible]
TYPE	[illegible]
SERIAL NO.	[illegible]
JETS (mm)	[illegible]
DEPTH OUT (m)	
DEPTH IN (m)	[illegible]
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T, To, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	[illegible]
DENSITY kg/m³	1110
FUNNEL VIS. - (S/L)	55
W.L. (cm³)	7.0
pH	10.5
[illegible]	66.0

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2450			

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) [illegible]

DEPTH (m) | DEVIATION (°) | DIR.

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour) — D.P. STANDS; D.P. SINGLES; KELLYDOWN; TOTAL; WT. OF DC; WT. OF STRING

BIT RECORD — BIT NO.; SIZE (mm); IADC CODE; MFG.; TYPE; SERIAL NO.; JETS (mm); DEPTH OUT (m); DEPTH IN (m); TOTAL METRES DRILLED (m); TOTAL HOURS RUN; CUTTING STRUCTURE; HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (m)

MUD RECORD — TIME; DENSITY kg/m³; FUNNEL VIS. - (S/L); W.L. (cm³); pH

PRODUCT | AMOUNT X UNIT

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
2304			

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 15[illegible]

DEPTH (m) | DEVIATION (°) | DIR.

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	WHIP		5.52 m
1	MILL		1.92 m
1	X/O		[illegible] m
1	URHO		.56 m
1	X/O		.36 m
1	5595	DP	9.71 m
		BHA	18.54 m
30	HWDP		2[illegible] m
			m
			m
58	D.P.	STANDS	1562.65 m
1	D.P.	SINGLES	45[illegible] m
	KELLYDOWN		[illegible] m
	TOTAL		[illegible] m
WT. OF DC		18000	1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	Mill 1
SIZE (mm)	215.9
IADC CODE	
MFG.	Smith
TYPE	~~FM4506~~ [illegible]
SERIAL NO.	FM4506
JETS (mm)	Open
DEPTH OUT (m)	
DEPTH IN (m)	2304
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE: T, To, MDC, LOC, B, Gage, ODC, Reason Pulled, Total Run m/hr.	
HOLE DRAG	8000↑ 8000↓
TORQUE AT BOTTOM	—
FILL ON BOTTOM (m)	—

MUD RECORD — TIME; DENSITY kg/m³; FUNNEL VIS. - (S/L); W.L. (cm³); pH

PRODUCT | AMOUNT X UNIT

METRES DRILLED

FROM	TO	DR-D RM-R CORE-C	ROTARY R.P.M.
230[illegible]			

LINER SIZE (mm) 152 | S.P.M. | LINER SIZE (mm) 15[illegible]

DEPTH (m) | DEVIATION (°) | DIR.

[illegible signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Slice Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH | DAY

RIG NO

FUEL @ 8:00

RIG | BOILER

WEATHER: TEMPERATURE °C | CURRENT CONDITIONS | WIND DIRECTION | ROAD

LAST CASING TUBING OR LINER	O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB TO CSG HEAD (m)	SET AT (m)
		[illegible]		[illegible]		[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DR. WORK	SAFETY MTG.	
	Hawk Eye [illegible]	
	1/4	
	3 1/2	
	3 3/4	

SHALE SHAKER(S)

NO. | TYPE

SCREENS CHANGED YES NO

TOP | TOP

MIDDLE | MIDDLE 175

BOTTOM | BOTTOM 175

RENTALS SERVICES

TMJ 303102.

A[illegible] 3731

[illegible] 76

MORNING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2450				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
[illegible]	0330	3 1/2	5	Circ [illegible] (6) 2350m + 000
[illegible]	0500	1/2	5	Remf [illegible] 9 [illegible] TOP DRIVE
0500	800	3	5	[illegible] 2282m - 15[illegible]

[illegible] = [illegible] [illegible]

NOTES: [illegible] - [illegible] [illegible] Break Linkage

[illegible] blow down 3x

[illegible] | 100000 | [illegible] | 7624

DAY TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2304				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	0830	1/2	6	POOH [illegible] OUT OF HOLE
0830			11	Rig up Schlumberger
	1100	2 1/2		Run in with [illegible] wire line
1100	1300	2	11	Run in hole Bridge Plug set @ 2304m
1300	1430	1 1/2	11	POOH + Rig out wire line
1430	1445	1/4	1	RTA [illegible]
1445	1500	1/4	5	Brk [illegible] circulate air cut
1500	1515	1/4	K	Pressure test bridge plug 7000 kPa 15 min
1515	1530	1/4	L	POOH [illegible] Kelly hose [illegible]
1530	1545	1/4	7	[illegible]
1545	1600	1/4	22	[illegible] whip [illegible] make up assembly

NOTES: ✓ Crown saver, fastline clamp, deadline anchor

[illegible] blow down 3x

[illegible] | [illegible] 350

EVENING TOUR

RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT ON BIT (1000 daN)
2304				

LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
152		152	

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	1730	1 1/2	22	Make up whip & mill assembly
1730	2400	6 1/2	6	Run whip - double stand
				1764m

NOTES: [illegible]

[illegible] | 100000 | Wireline | 7624

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159220

LICENCE NO.: 1902	WELL NAME AND NO.: [illegible] North Liard C-31A
OPERATOR: [illegible]	CONTRACTOR: [illegible]
SURFACE LOCATION: [illegible]	UNIQUE ID.: [illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE: [illegible]	SIGNATURE OF CONTRACTOR'S RIG MANAGER: [illegible]

DAILY CHECKS (OPR. / R.M.)

(1) Daily Walk Around Inspection — Initial
(2) Detailed Inspection-Weekly (using checklist) — Initial
(3) H²S Signs Posted (if required) — Initial
(4) Well License & Stick Diagram Posted — Initial
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(1) Rig Site Health and Safety Meeting (one/crew/month) — Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month) — Initial
(3) Mast Inspection Before Raising or Lowering — Initial
(4) Crown Saver Checked — Initial
(5) Motor Kills checked — Initial

YEAR	MONTH

RIG NO. 58

FUEL @ 8

RIG 134

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.	
MORN.					1/2	7 1/2																
DAY					8																	
EVE.					8																	
TOTAL					16 1/2	7 1/2																

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

			LENGTH
			.25 m
	[illegible]		1.07 m
	[illegible]		1.10 m
3[illegible]	[illegible]		275.87 m
	[illegible]		.29 m
3	DC	178	27.43 m
	[illegible]		1.31 m
		BHA	307.32 m
	D.P.	STANDS	m
	D.P.	SINGLES	m
	KELLYDOWN		m
	TOTAL		m
WT. OF DC	21000		1000 daN
WT. OF STRING			1000 daN

BIT RECORD

BIT NO.	3 [illegible]
SIZE (mm)	[illegible]
IADC CODE	
MFG.	[illegible]
TYPE	[illegible]
SERIAL NO.	[illegible]
JETS (mm)	[illegible]
DEPTH OUT (m)	
DEPTH IN (m)	2450
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T₁ | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME / DENSITY kg/m³ / FUNNEL VIS. - (S/L) / W.L. (cm³) / pH

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2450			

LINER SIZE (mm) | S.P.M. | LINER SIZE: 152 | | 15[illegible]

DEPTH (m) | DEVIATION (°)

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

			LENGTH
1			.25 m
1	SCRAPPER		1.10 m
1	BIT SUB		1.07 m
30	HWDP	127	275.87 m
1	X/O		.29 m
3	DC	178	27.43 m
1	X/O		1.31 m
		BHA	307.32 m
			m
			m
			m
72	D.P.	STANDS	2064.47 m
	D.P.	SINGLES	m
Stick	KELLYDOWN		22.79 m
	TOTAL		2350 m
WT. OF DC	21000		1000 daN
WT. OF STRING	90000		1000 daN

BIT RECORD

BIT NO.	3 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	JD8
SERIAL NO.	F11226
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2450
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T₁ | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: ↑-180000 ↓ 5-100000↑

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☒ WATER BASED ☐ OIL BASED

TIME	09:00	11:00	15:00
DENSITY kg/m³	1140	1140	1140
FUNNEL VIS. - (S/L)	65	61	57
W.L. (cm³)	7.0	7.0	7.0
pH	10.5	10.5	10.5
V.I.T.	63.6	64.3	64.8

MUD MATERIALS ADDED

PRODUCT	AMOUNT X UNIT
Barite	42 sx
Lignite	1 sx

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

HOURS RUN: 0

CENTRIFUGE — HOURS RUN: 0

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2450			

LINER SIZE (mm) | S.P.M. | LINER SIZE: 6000 | 152 | 152

3150 | 350

DEPTH (m) | DEVIATION (°) | DIR

[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

			LENGTH
			.25 m
	SCRAPPER		1.10 m
	BIT SUB		1.07 m
30	HWDP		275.87 m
	X/O		.29 m
3	DC		27.43 m
	X/O		1.31 m
			m
		BHA	307.32 m
			m
			m
72	D.P.	STANDS	2064.47 m
	D.P.	SINGLES	m
	KELLYDOWN		22.79 m
	TOTAL		2350 m
WT. OF DC	21000		1000 daN
WT. OF STRING	90000		1000 daN

BIT RECORD

BIT NO.	3 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	HUGHES
TYPE	JD8
SERIAL NO.	F11226
JETS (mm)	3x11.1
DEPTH OUT (m)	
DEPTH IN (m)	2450
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	

CUTTING STRUCTURE: T₁ | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (m)

MUD RECORD — MUD TYPE: ☐ WATER BASED ☐ OIL BASED

TIME	17:00	20:30	22:30
DENSITY kg/m³	1135	1140	1140
FUNNEL VIS. - (S/L)	57	57	58
W.L. (cm³)	7.5	7.5	7.2
pH	10.5	10.5	10.5
V.I.T.	66.0	65.6	65.[illegible]

MUD MATERIALS ADDED — PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL — HOURS RUN | INTAKE DENSITY (kg/m³) | OVERFLOW DENSITY (kg/m³) | UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.
2450			

LINER SIZE (mm) | S.P.M. | LINER SIZE: 6000 | 152 | 152

3150 | 350

DEPTH (m) | DEVIATION (°) | DIRE

[illegible]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY

RIG NO 58

FUEL @ 8:00

RIG 134 BOILER

WEATHER

TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	OD (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG. HEAD (m)	SET AT (m)
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
[illegible]	[illegible]						[illegible]	[illegible]	[illegible]
[illegible]	[illegible]						[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

DIR. WORK	SAFETY MTG.	20	21	22	23	24	25	26	TOTALS

SHALE SHAKER(S)

NO.	TYPE
SCREENS CHANGED	☐ YES ☐ NO
TOP	TOP [illegible]
MIDDLE	MIDDLE [illegible]
BOTTOM	BOTTOM [illegible]

RENTALS SERVICES

[illegible]	500939
[illegible]	1564
[illegible]	36

MORNING TOUR

MUD RECORD

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2450				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
	152		152	

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0000	0230	2½	6	POOH [illegible] 5 STDS [illegible] BHC
0230	0330	1	6	Lay down [illegible]
[illegible]	[illegible]	1½	6	[illegible]
[illegible]	[illegible]	3½	6	[illegible]
0730	0800	½	5	[illegible]

[illegible] 15.15 m3 - [illegible] 1141 - [illegible]

NOTES: [illegible] Deadline Anchor Brakes Linkage

Boiler Blowdown 3x

8	105	350	TRIPPING	1140

DAY TOUR

MUD RECORD

11:00	15:00
1140	1140
61	57
7.0	7.0
10.5	10.5
64.3	64.8

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2450				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6000	152		152	85

3150	350		50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
0800	1600	8	5	CIRCULATE IN CASING @ 2350 m
				1100

NOTES ✓ CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR

BOILERS BLOWN DOWN

[illegible]	8	105	350°	100 000 daN	1624 kPa

EVENING TOUR

MUD RECORD

20:30	22:30
1140	1140
57	58
7.5	7.2
10.5	10.5
65.6	65.8

METRES DRILLED

FROM	TO	DRD RMR CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2450				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6000	152		152	85

3150	235		50

DEVIATION SURVEY

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO	HRS	CODE	DETAILS
1600	2400	8	5	CIRCULATE IN CASING @ 2350 m

NOTES: [illegible] Fastline Clamp - Deadline Anchor - Brakes Linkage

Boiler Blow down 3x

[illegible]	8	105	350	100,000	1624 KPA

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159219

LICENCE NO.	WELL NAME AND NO.
1900	Canadian Forest ETAL North Liard O-31A

OPERATOR	CONTRACTOR
Canadian Forest [illegible]	[illegible]

SURFACE LOCATION	UNIQUE ID
[illegible]	[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [illegible signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [illegible signature]

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	[illegible]	
(2) Detailed Inspection Weekly (using check list)	[illegible]	
(3) H2S Signs Posted (if required)	[illegible]	
(4) Well License & Stick Diagram Posted	[illegible]	
(5) Flare Lines Staked	[illegible]	
(6) BOP Drills Performed	[illegible]	
(7) Visually Inspect BOP's - Flowlines & Degasser Lines	[illegible]	
(1) Rig Site Health and Safety Meeting (one per crew)		
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills checked		

YEAR	MONTH	DAY
[illegible]	[illegible]	[illegible]

RIG NO. 58

FUEL: 158

TEMPERATURE

CURRENT CONDITIONS

WIND DIRECTION

ROAD

TIME HRS

	OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG.		Handle Tools [illegible] Drill	GYRO
MORN.			3 1/2			3/4					1 1/4												3/4		1 3/4
DAY			1/2			2 1/4	2				1/4												3/4		3 1/4
EVE						[illegible]	5 1/4	[illegible]		3/4														1/4	
TOTAL			[illegible]			[illegible]	[illegible]	[illegible]			[illegible]												1	1/4	[illegible]

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
	MTR	[illegible] m
	[illegible]	.75 m
	[illegible]	[illegible] m
	[illegible]	[illegible] m
	[illegible]	[illegible] m
	[illegible]	[illegible] m
74	D.P. STANDS	
x	D.P. SINGLES	2131.19 m
	Stick up / KELLYDOWN	6.84 m
	TOTAL	2447 m
	WT. OF DC	20000 daN
	WT. OF STRING	49000 daN

BIT RECORD

BIT NO.	[illegible]
SIZE (mm)	[illegible]
IADC CODE	
MFG.	
TYPE	[illegible]
SERIAL NO.	
JETS (mm)	[illegible]
DEPTH OUT (m)	
DEPTH IN (m)	[illegible]
TOTAL METRES DRILLED (m)	77
TOTAL HOURS RUN	11 1/4
CUTTING STRUCTURE	
HOLE DRAG	[illegible]
TORQUE AT BOTTOM	[illegible]
FILL ON BOTTOM (m)	

MUD RECORD

TIME	00:00	04:00	06:30
DENSITY kg/m³	1125	1125	1130
FUNNEL VIS. - (S/L)	57	63	61
W.L. (cm³)	7.5	7.3	8.0
pH	10.5	10.5	10.5
T.V.T. m³	65.0	65.7	66.2

PRODUCT	AMOUNT X UNIT
Sharpak	1 sx
Drispak	1 sx
Lignite	1 sx
[illegible]	12 sxs
[illegible]	1 PL
Biocide	1 PL
Antifoam	4 PLs

METRES DRILLED

FROM	TO	DRG RATE	ROTARY R.P.M.
2407	2447	40	14

6500	152	152

DEPTH (m)	DEVIATION (°)	
2400	3.0	[illegible]
2410	3.1	
2424	3.7	[illegible]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

1	Bit	.25 m
1	MTR	6.75 m
1	FLT Sub	.75 m
1	Rec Sub	.75 m
3	Nmdc	27.63 m
1	X/O	.44 m
1	Crew Sub	.56 m
1	X/O	.36 m
7	Hwdp	58.26 m
1	Jar	5.36 m
22	Hwdp	210.25 m
	BHA	315.03 m
74	D.P. STANDS	
xx	D.P. SINGLES	2140.51 m
	Stick up / KELLYDOWN	6.84 m
	TOTAL	2450 m
	WT. OF DC	20000 daN
	WT. OF STRING	89000 daN

BIT RECORD

BIT NO.	2 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Reed
TYPE	EHP51A
SERIAL NO.	TC1057
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2370
TOTAL METRES DRILLED (m)	80
TOTAL HOURS RUN	11 3/4
CUTTING STRUCTURE	
HOLE DRAG	10-15000 [illegible] 13000 [illegible]
TORQUE AT BOTTOM	4-11000 Ft/lbs
FILL ON BOTTOM (m)	

MUD RECORD

TIME	08:00	10:00
DENSITY kg/m³	1135	1135
FUNNEL VIS. - (S/L)	65	63
W.L. (cm³)	7.5	7.5
pH	10.5	10.5
T.V.T. m³	66.6	65.9

PRODUCT	AMOUNT X UNIT

HOURS RUN: C

CENTRIFUGE — HOURS RUN: C

METRES DRILLED

FROM	TO	DRG RATE	ROTARY R.P.M.
2447	2450	3	14 / 85

6900	152	152

3550

DEPTH (m)	DEVIATION (°)	DIR.
2436.0	4.8	[illegible]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

	Bit	.25 m
	MTR	6.73 m
	FLT Sub	.75 m
	[illegible]	[illegible] m
	X/O	.44 m
	[illegible]	[illegible] m
	[illegible]	[illegible] m
	BHA	310.03 m
77	D.P. STANDS	2035.66 m
1	D.P. SINGLES	9.66 m
	KELLYDOWN	~~[illegible]~~
	TOTAL	2361 m
	WT. OF DC	[illegible] daN
	WT. OF STRING	[illegible] daN

BIT RECORD

BIT NO.	2 RR
SIZE (mm)	215.9
IADC CODE	
MFG.	Reed
TYPE	EHP51A
SERIAL NO.	TC1057
JETS (mm)	3 x 11.1
DEPTH OUT (m)	
DEPTH IN (m)	2370
TOTAL METRES DRILLED (m)	
TOTAL HOURS RUN	
CUTTING STRUCTURE	
HOLE DRAG	[illegible]
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD

TIME	
DENSITY kg/m³	
FUNNEL VIS. - (S/L)	
W.L. (cm³)	
pH	

PRODUCT	AMOUNT X UNIT
Barite	46 sxs
Lignite	1 sx

METRES DRILLED

FROM	TO	DRG RATE	ROTARY R.P.M.
2450			

	152	152

DEPTH (m)	DEVIATION (°)	DIR.

[illegible signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (using checklist)		
(3) H2S Signs Posted (if required)		
(4) Well License & Sr ox Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Daily Performed		
(7) Visually inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting		
(2) C.A.O.D.C. Rig Safety Inspection Checklist		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor-Kills checked		

YEAR	MONTH	DAY	RIG NO	RIG	BOILER
			57	151	

FUEL @ 8:00

WEATHER	
TEMPERATURE °C	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5								2395

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BRASCO	254
121	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	BRASCO	[illegible]

SAFETY MTG. — Mantle Fill Pit & Drill

SHALE SHAKER(S) — SCREENS CHANGED YES NO — TOP / MIDDLE / BOTTOM

RENTALS SERVICES — 650 — [illegible] OIL 36

MORNING TOUR

RECORD: 04:00 06:30 / 1125 1130 / 63 61 / 8.3 8.0 / 10.5 10.5 / 65.7 66.2

METRES DRILLED FROM	TO	RMR CORE-C	ROTARY R.P.M.	WT. ON BIT
2407	2447	40	14	

	LINER SIZE	S.P.M.	LINER SIZE	S.P.M.
6500	152		152	95

DEPTH (m)	DEVIATION (°)	DIRECTION
[illegible]	3.0	[illegible]
2416	3.1	[illegible]
2424	3.7	48.7

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
[illegible]	0045	3/4	5	CIRC.
0045	0230	1 3/4	25	Rough GYRO
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	0430	[illegible]	[illegible]	Drill 2407m - 2420m
[illegible]	[illegible]	[illegible]	[illegible]	SURVEY
[illegible]	0530	[illegible]	[illegible]	Drill 2420m - 2430m
[illegible]	[illegible]	[illegible]	10	SURVEY
[illegible]	[illegible]	[illegible]	[illegible]	DRILL 2430m - 2439m
[illegible]	0715	1/4	[illegible]	SURVEY
0715	[illegible]	[illegible]	[illegible]	DRILL 2439m - 2447m

NOTES: [illegible] BRAKES LINKAGE
Boiler Blow down 3x

8 | 185 | 350° | K.Gunn [illegible] 7395 KPA

DAY TOUR

RECORD: 10:00 / 1135 / 63 / 7.5 / 10.5 / 65.8

METRES DRILLED FROM	TO	RMR CORE-C	ROTARY R.P.M.	WT. ON BIT
2447	2450	3	14 / 85	4/5

	LINER SIZE	S.P.M.	LINER SIZE	S.P.M.
6900	152		152	90

4550 | | 60

DEPTH (m)	DEVIATION (°)	DIRECTION
2436.0	4.6	321.6

0 / 0

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
[illegible]	0830	1/2	5	CIRC. WORK PIPE TO CLEAN HOLE
0830	0900	1/2	2	DRILL 2447m - 2450m
0900	0945	3/4	5	CIRC. [illegible] TO CLEAN UP HOLE
0945	1000	1/4	10	SURVEY @ 2436m
1000	1045	3/4	22	HOOK UP KELLY HOSE TO CIRC. HEAD
1045	1145	1	5	CIRC THROUGH CIRCULATING HEAD
1145	1300	1 1/4	25	RIG UP GYRO & R.I.H. SURVEY w/ GYRO
1300	1400	1	25	POOH GYRO TOOL & RIG OUT
1400	1600	2	6	PULL UP INTO CASING 2450m - 2361m
				Layed down 7 singles
				PULLED OF WITHOUT PUMPING
				20 - 15000 [illegible]

NOTES: ✓ CROWN SAVER FASTLINE CLAMP DEADLINE ANCHOR
BOILERS BLOW DOWN 3X

8 | 10.5 | 350° | 155 000 daN | | 9137 kpa

EVENING TOUR

METRES DRILLED FROM	TO	RMR CORE-C	ROTARY R.P.M.	WT. ON BIT
2450				

	LINER SIZE	S.P.M.	LINER SIZE	S.P.M.
	152		152	

DEPTH (m)	DEVIATION (°)	DIRECTION

DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600				RIG OUT CIRCULATING HEAD
	1700	1	23	CHANGE BAILES & ELEVATORS PUT KELLY HOSE ON
1700	1715	1/4	7	K/S FUNCTION ANNULAR 19 sec.
1715	1730	1/4	24	HELD BOP DRILL WELL SECURE IN 90 SEC.
1730				WAIT IN CASING @ WINDOW TO CHECK
	2015	3 3/4	6	HOLE CONDITIONS WHEN RUNNING BACK IN
2015	2130	3/4	9	SLIP & CUT 20m
2130	2200	1/2	5	MIX PILL
2200	2400	2	6	[illegible] 20 [illegible] 40 [illegible]

NOTES: ✓ CROWN SAVER FASTLINE CLAMP DEADLINE ANCHOR BRAKES & LINKAGE

DRILLER SIGNATURE: [illegible] | 105 000 | CLEAN RIG | 9137 KPA

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159218

DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOPs - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR | MONTH

RIG NO. 58

FUEL @ 8

RIG 1.85 | BOILER

WEATHER: TEMPERATURE / CURRENT CONDITIONS / WIND DIRECTION / ROAD

LICENCE NO.: 1900

WELL NAME AND NO.: CANADIAN FOREST ETAL NORTH LIARD C-31A

OPERATOR: CANADIAN FOREST OIL

CONTRACTOR: [illegible]

SURFACE LOCATION: [illegible] 31A [illegible] 123[illegible]

UNIQUE ID.: [illegible] 31A [illegible] 123[illegible]

SIGNATURE OF OPERATOR'S REPRESENTATIVE: [signature]

SIGNATURE OF CONTRACTOR'S RIG MANAGER: [signature]

TIME HRS

CODE NO.	OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	[illegible]		
	MORN.		3			2	½																½		5 RO
	DAY		3¾								¼														2
	EVE.		3				¼																		3
	TOTAL		7¾			2	¾				¼												¾		7¾

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
	Bit	.25 m
	[illegible]	.63 m
2	[illegible]	.75 m
	[illegible]	.28 m
3	[illegible]	[illegible] m
23	[illegible]	[illegible] m
	BHA	315.[illegible] m
72 D.P.	STANDS	2[illegible]15 m
1 D.P.	SINGLES	4.67 m
	KELLYDOWN P	2.85 m
	TOTAL	2389 m
WT. OF DC		[illegible]
WT. OF STRING		[illegible]

BIT RECORD

BIT NO	[illegible]
SIZE (mm)	215.9
IADC CODE	
MFG.	REED
TYPE	EHP51A
SERIAL NO.	[illegible]
JETS (mm)	3×11.1
DEPTH OUT (m)	
DEPTH IN (m)	2370
TOTAL METRES DRILLED (m)	19
TOTAL HOURS RUN	3

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 19 000 ↑ [illegible]

TORQUE AT BOTTOM: [illegible]

FILL ON BOTTOM (m): ---

MUD RECORD

MUD TYPE: WATER BASED / OIL BASED

TIME	03:30	06:00
DENSITY kg/m³	1120	1120
FUNNEL VIS. - (S/L)	70	60
W.L. (cm³)	8.5	8.0
pH	10.5	10.5
P.V.T. m³	70.4	64.7

MUD MATERIALS ADDED: PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

METRES DRILLED

FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.
2370	2389	19	[illegible]

	LINER SIZE (mm)	S.P.M.	LINER SIZE
7500	152	-	15[illegible]

5200 | 23[illegible]

DEPTH (m) | DEVIATION (°)

[signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	[illegible]	.25 m
1	FLT SUB	.63 m
1	RES SUB	.75 m
3	NMDC	27.13 m
1	X/O	.44 m
1	[illegible]	.56 m
1	X/O	.36 m
7	HWDP	72.46 m
1	JAR	[illegible] m
23	HWDP	210.74 m
	BHA	318.2[illegible] m
72 D.P.	STANDS	
XX D.P.	SINGLES	2082.86
	~~KELLYDOWN~~ STICK-UP	6.91 m
	TOTAL	2394 m
WT. OF DC		20000
WT. OF STRING		87000

BIT RECORD

BIT NO.	2m RR
SIZE (mm)	215.9
IADC CODE	
MFG.	REED
TYPE	EHP51A
SERIAL NO.	TC 1057
JETS (mm)	3×11.1
DEPTH OUT (m)	
DEPTH IN (m)	2370
TOTAL METRES DRILLED (m)	24
TOTAL HOURS RUN	4¾

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 13000↓ 15000↑

TORQUE AT BOTTOM: SLIDING

FILL ON BOTTOM (m):

MUD RECORD

MUD TYPE: ☒ WATER BASED / OIL BASED

TIME	09:00	14:00	16:00
DENSITY kg/m³	1125	1125	1125
FUNNEL VIS. - (S/L)	60	59	59
W.L. (cm³)	9.5	9.5	8.5
pH	10.5	10.5	10.5
P.V.T.	67.7	65.4	65.9

PRODUCT	AMOUNT X UNIT
[illegible]	2 L
[illegible]	1 sx
[illegible]	1 sx
[illegible]	1 sx
[illegible]	2 sx

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY (kg/m) | OVERFLOW DENSITY (kg/m) | UNDERFLOW DENSITY (kg/m)

CENTRIFUGE: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.
2389	2394	5	60

	LINER SIZE (mm)	S.P.M.	LINER SIZE
7100	152		15[illegible]

4300 | 391

DEPTH (m) | DEVIATION (°)

[signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
	Bit	.25 m
	Flt Sub	.63 m
	Res Sub	.75 m
3	NMDC	27.13 m
	XO [illegible]	[illegible] m
7	HWDP	72.[illegible] m
23	JAR HWDP	[illegible] m
	BHA	318.2[illegible] m
73 D.P.	STANDS	2083.66 m
D.P.	SINGLES	m
	KELLYDOWN P	4.67 m
	TOTAL	2407 m
WT. OF DC		20000
WT. OF STRING		87000

BIT RECORD

BIT NO.	2m RR
SIZE (mm)	215.9
IADC CODE	
MFG.	REED
TYPE	EHP51A
SERIAL NO.	TC1057
JETS (mm)	3×11.1
DEPTH OUT (m)	
DEPTH IN (m)	2370
TOTAL METRES DRILLED (m)	37
TOTAL HOURS RUN	7¾

CUTTING STRUCTURE: T | T₂ | MDC | LOC | B | Gage | ODC | Reason Pulled | Total Run m/hr.

HOLE DRAG: 13000↓ 15000↑

TORQUE AT BOTTOM: SLIDING

FILL ON BOTTOM (m):

MUD RECORD

TIME	18:00	21:00
DENSITY kg/m³	1125	1125
FUNNEL VIS. - (S/L)	59	58
W.L. (cm³)	8.5	8.5
pH	10.5	10.5
P.V.T.	66.3	66.3

PRODUCT | AMOUNT X UNIT

SOLIDS CONTROL: HOURS RUN | INTAKE DENSITY | OVERFLOW DENSITY | UNDERFLOW DENSITY

METRES DRILLED

FROM	TO	DRD. RM-R CORE-C	ROTARY R.P.M.
2394	2407	13	[illegible]

	LINER SIZE (mm)	S.P.M.	LINER SIZE
6900	152		15[illegible]

11500 | 340

DEPTH (m) | DEVIATION (°)

[signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial [illegible]	Initial [illegible]
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H2S Signs Posted (if required)	Initial [illegible]	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial [illegible]	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial [illegible]
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY
[illegible]	[illegible]	

RIG NO. 58

FUEL @ 8:00

RIG 1.85 BOILER

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL (m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	244.5	220.7	[illegible]	STC	[illegible]	59	2632	3.70	2295

W E A T H E R	°C
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN. ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH. (mm)
127	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	33	[illegible]	EMSCO	254
127	[illegible]	[illegible]	[illegible]	154	[illegible]	38	[illegible]	EMSCO	254
127	[illegible]	[illegible]	[illegible]	156	[illegible]	174	[illegible]	EMSCO	228.6

WR. ORK	SAFETY MTG.					TOTALS
		[illegible]		2 20		
		7/21		2		7
				3		8
				3 3/4		9
		3/4		[illegible]		24

SHALE SHAKER(S)		
NO. TYPE [illegible]		
SCREENS CHANGED	YES	NO
TOP [illegible]	TOP 175	
MIDDLE [illegible]	MIDDLE 175	
BOTTOM [illegible]	BOTTOM 175	

RENTALS SERVICES

[illegible] 498605

[illegible] 6255

[illegible] 36

MORNING TOUR

RECORD

06:00
1120
60
8.0
10.5
64.7

METRES DRILLED FROM	TO	DRLG. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2370	2389	19	[illegible]	13

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
7500	152		152	35

5200 @ 39[illegible] 65

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0000	0130	1 1/2	25	POOH Gyro Tool.
[illegible]	0200	1/2	25	Rig out Gyro
0200	0245	3/4	22	[illegible] hose to top drive
[illegible]	0300	[illegible]	[illegible]	Pick up singles [illegible]
[illegible]	0500	2	2	[illegible] from 2370m - 2389m
0500	0600	1	5	Circ Sample
0600	0800	2	5	Circ

NOTES [illegible] brake [illegible] linkage

Boiler blow down 3x

[illegible signature] | 8 | 105 | 350 | 102 000 | [illegible] | 4345 KPA

DAY TOUR

RECORD

14:00	16:00
1125	1125
59	59
9.5	8.5
10.5	16.5
65.4	65.9

METRES DRILLED FROM	TO	DRLG. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2389	2394	5	[illegible]	[illegible]

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
7100	152		152	70

4300 | 391 @ | 60

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800				Lay down 2 singles & rig up circ head
	11:00	3	25	& Rig up Gyro & RIH w Gyro
1100				Attempt to steer away from casing
	13:45	2 3/4	2	FROM 2389m - 2394m SLIDE
1345	1600	2 1/4	10	Accum. SURVEYS WITH GYRO

NOTES ✓ CROWN SAVER, FASTLINE CLAMP, DEADLINE ANCHOR

BOILERS Blown Down 3X

[illegible signature] | 8 | 10.9 | 350 | 110 000 kN | | 7575 kPa

EVENING TOUR

RECORD

21:00
1125
58
8.5
16.5
66.5

METRES DRILLED FROM	TO	DRLG. RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2394	2407	13	MTR	1-2

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
6900	152		152	95

4300 @ 340 60

HOURS RUN	INTAKE DENSITY (kg/m)	OVERFLOW DENSITY (kg/m)	UNDERFLOW DENSITY (kg/m)

DEPTH (m)	DEVIATION (°)	DIRECTION

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	1645	3/4	2	SLIDE DRILL 2394m - 2397m
1645	1700	1/4	35	MOVE WIRELINE IN DERRICK FOR GYRO
1700	1830	1 1/2	2	SLIDE DRILL 2397m - 2401m
1830	2015	1 3/4	25	POOH. GYRO TOOL - MAKE CONNECTION
				R.F Gyro Tool
2015	2030	1/4	2	Drill 2401m - 2402m
2030	2215	1 3/4	25	DO CHECK SURVEY GYRO
2215	2245	1/2	2	DRILL 2402m - 2407m
2215	2245	1	21	[illegible] Safety
2245	2400	1/4	5	CIRC

NOTES CROWN SAVER [illegible] CLAMP - DEADLINE ANCHOR - BRAKES LINKAGE

Boiler blow down 3x

[illegible signature] | 8 | 105 | 350 | 110 000 | GYRO CONNECTION | 7575 KPA

159217

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LICENCE NO.:	WELL NAME AND NO.:
1900	[illegible]
OPERATOR:	CONTRACTOR:
[illegible] OIL	[illegible]
SURFACE LOCATION:	UNIQUE ID.:
[illegible]	[illegible]
SIGNATURE OF OPERATOR'S REPRESENTATIVE:	SIGNATURE OF CONTRACTOR'S RIG MANAGER:
[illegible]	[illegible]

DAILY CHECKS

	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH
RIG NO.	

FUEL @ 8

RIG	1.03

WEATHER	
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

TIME HRS

CODE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19			20			
OPER.	RIG UP & TEAR DOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRE LINE LOGS	RUN CASE & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MTG	[illegible]	[illegible]	LEAK OFF TEST	GYRO
MORN.		1/2	2 1/2		3/4	4 3/4																			
DAY					1 1/4	5	1/4															1 1/4	1/4	3	2
EVE.					1															1					
TOTAL		1/2	2 1/2		3	9 3/4	1/4													1		1 1/4	1/4	3	3

MORNING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
		1.77 m
	5.95	9.7 m
	HWDP	9.73 m
	[illegible]	2.7 m
	HWDP	50.35 m
		m
	[illegible]	[illegible] m
		m
		m
		m
73	D.P. STANDS	2,23 [illegible] m
	D.P. SINGLES	m
	KELLYDOWN	16.80 m
	TOTAL	[illegible] m
	WT. OF DC	[illegible] 1000 daN
	WT. OF STRING	[illegible] 1000 daN

BIT RECORD

BIT NO.	[illegible]	
SIZE (mm)	[illegible]	
IADC CODE		
MFG.	[illegible]	
TYPE	[illegible]	
SERIAL NO.	[illegible]	
JETS (mm)		
DEPTH OUT (m)		
DEPTH IN (m)		
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	[illegible]
TORQUE AT BOTTOM	[illegible]
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	01:30	03:00
DENSITY kg/m³	1125	1125
FUNNEL VIS. - (S/L)	64	58
W.L. (cm³)		
pH	11.0	11.0
P.V.T. m³	72.1	70.6

PRODUCT	AMOUNT X UNIT
Biocide	1 PL
Sod Sulfite	2 sxs
BARITE	30 sxs
Lignite	2 sxs

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
	1125	1100	1980
	1125	1100	1890

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.
2361.68	2366.75	2	120

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
3640	152		152

DEPTH (m)	DEVIATION (°)	D

[illegible signature]

DAY TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
1	BIT	.25 m
1	[illegible] Sub	6.13 m
1	[illegible] Sub	.75 m
3	NMDC	27.63 m
1	X/O	.44 m
1	[illegible] Sub	.54 m
1	X/O	.36 m
7	HWDP	72.40 m
1	JAR	5.36 m
23	HWDP	216.75 m
	BHA	330.63 m
71	D.P. STANDS	m
XX	D.P. SINGLES	[illegible] m
	KELLYDOWN	m
	TOTAL	2370 m
	WT. OF DC	20000 1000 daN
	WT. OF STRING	40000 1000 daN

BIT RECORD

BIT NO.	2 RR	
SIZE (mm)	215.9	
IADC CODE		
MFG.	REED	
TYPE	EHP51A	
SERIAL NO.	TC1057	
JETS (mm)	3 X 11.1	
DEPTH OUT (m)		
DEPTH IN (m)	2370	
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	15000 ↑↓
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME	14:00	16:00
DENSITY kg/m³	1130	1125
FUNNEL VIS. - (S/L)	57	57
W.L. (cm³)	5.3	5.3
pH	10.8	10.8
P.V.T.	72.8	69.9

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.
2370			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
5700	152		152

DEPTH (m)	DEVIATION (°)	DIR

[illegible signature]

EVENING TOUR

DRILLING ASSEMBLY (At End of Tour)

		LENGTH
	BIT	.25 m
	[illegible] Sub	6.13 m
	[illegible] Sub	.75 m
	NMDC	27.63 m
	[illegible]	[illegible] m
	HWDP	72.40 m
	JAR	5.36 m
23	HWDP	216.75 m
	BHA	330.63 m
72	D.P. STANDS	2031.33 m
RUP	D.P. SINGLES	3.64 m
	KELLYDOWN	7.00 m
	TOTAL	2370 m
	WT. OF DC	[illegible] 1000 daN
	WT. OF STRING	[illegible] 1000 daN

BIT RECORD

BIT NO.	2 RR	
SIZE (mm)	215.9	
IADC CODE		
MFG.	REED	
TYPE	EHP51A	
SERIAL NO.	TC1057	
JETS (mm)	3 X 11.1	
DEPTH OUT (m)		
DEPTH IN (m)	2370	
TOTAL METRES DRILLED (m)		
TOTAL HOURS RUN		

CUTTING STRUCTURE T	T_o	MDC	LOC	B	Gage	ODC	Reason Pulled	Total Run m/hr.

HOLE DRAG	12000 ↑↓
TORQUE AT BOTTOM	
FILL ON BOTTOM (m)	

MUD RECORD — MUD TYPE: WATER BASED / OIL BASED

TIME		
DENSITY kg/m³		
FUNNEL VIS. - (S/L)		
W.L. (cm³)		
pH		

PRODUCT	AMOUNT X UNIT

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

METRES DRILLED

FROM	TO	DRD. RMR. CORE-C	ROTARY R.P.M.
2370			

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)
5800	152		152

DEPTH (m)	DEVIATION (°)	DIRE

[illegible signature]

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DAILY CHECKS	OPR.	R.M.
(1) Daily Walk Around Inspection	Initial	Initial
(2) Detailed Inspection-Weekly (using checklist)	Initial	Initial
(3) H²S Signs Posted (if required)	Initial	Initial
(4) Well License & Stick Diagram Posted	Initial	Initial
(5) Flare Lines Staked	Initial	Initial
(6) BOP Drills Performed	Initial	Initial
(7) Visually inspect BOP's - Flarelines & Degasser Lines	Initial	Initial
(1) Rig Site Health and Safety Meeting (one/crew/month)		Initial
(2) C.A.O.D.C. Rig Safety Inspection Checklist (one/rig/month)		Initial
(3) Mast Inspection Before Raising or Lowering		Initial
(4) Crown Saver Checked		Initial
(5) Motor Kills checked		Initial

YEAR	MONTH	DAY

RIG NO.

FUEL @ 8:00

RIG 1.03 BOILER

WEATHER	°C
TEMPERATURE	
CURRENT CONDITIONS	
WIND DIRECTION	
ROAD	

LAST CASING TUBING OR LINER	O.D. (mm)	MIN. I.D. (mm)	kg/m	MAKE	GRADE	NO. OF JOINTS	TOTAL(m) LENGTH	KB. TO CSG HEAD (m)	SET AT (m)
	[illegible]					34	[illegible]		[illegible]

DC/DP SIZE (mm)	LINEAR MASS (kg/m)	GRADE	MIN ID (mm)	TOOL JT O.D. (mm)	TYPE THREAD	NO. OF JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LTH (mm)
127	74.33								
127	[illegible]								
127	[illegible]								

SAFETY MTG.						TOTALS
HANDLE TOOLS WORK LOG / LEAK OFF TEST GYRO						
	1¼	½				
			3	3		8
	1¼	½	3	3		14

SHALE SHAKER(S)		RENTALS SERVICES
NO. TYPE		[illegible]
SCREENS CHANGED ☐ YES ☐ NO		5120
TOP	TOP	36
MIDDLE	MIDDLE	
BOTTOM	BOTTOM	

MORNING TOUR

RECORD

03:00
1125
58
11.0
70.6

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2366	2366.75	2	130	1-2

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
3640	152		152	80

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
	1125	1100	1830
	1125	1100	1890

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
[illegible]	0030	½		DRILL 2366 - 2369.75
0030	0300	[illegible]	2	[illegible] REAM [illegible] SURVEY [illegible]
0300	0345	¾	5	CIRC.
0345	0800	4¼	6	[illegible]

[illegible]

NOTES [illegible]

Boiler Blow down 3X

[signature]

8	145	520	1299m		LOOK WORK	7575 KM

DAY TOUR

RECORD

16:00
1125
57
5.3
10.8
69.9

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2371				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5700	152		152	80

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)
0			
CENTRIFUGE			
0			

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
0800	0815	¼	7	R/S FUNCTION BLIND RAMS & SAFETY [illegible]
0815	0930	1¼	22	[illegible] MOTOR, [illegible]
0930	1015	¾	6	RIH TO 345m [illegible]
1015	1130	1¼	5	FILL PIPE & TEST MUD [illegible]
1130	1445	3¼	6	RIH 345m - 2354m
1445	1500	¼	23	WORK PIPE INTO WINDOW
1500	1545	¾	5	[illegible] CIRC & WASH 2367.5m - 2371m
1545	1600	¼	5	[illegible] & CIRC. BTMS UP

NOTES [illegible] SAVER [illegible] DEADLINE ANCHOR

BOILERS BLOWN DOWN 3X

[signature]

F	16.3	350	105 000		7575 KM

EVENING TOUR

MUD RECORD

METRES DRILLED

FROM	TO	DRD RM-R CORE-C	ROTARY R.P.M.	WT. ON BIT (1000 daN)
2370				

	LINER SIZE (mm)	S.P.M.	LINER SIZE (mm)	S.P.M.
5800	152		152	80

DEPTH (m)	DEVIATION (°)	DIRECTION

HOURS RUN	INTAKE DENSITY (kg/m³)	OVERFLOW DENSITY (kg/m³)	UNDERFLOW DENSITY (kg/m³)

TIME LOG — DETAILS OF OPERATION IN SEQUENCE AND REMARKS

FROM	TO			
1600	1630	½	5	CIRC. BTMS UP
1630	1900	2½	24	LEAK OFF TEST w/[illegible] PRESSURE TESTING
1900	1930	½	24	RIG OUT PRESSURE TEST
1930	2015	¾	25	RIG UP GYRO PACKOFF HEAD
2015	2045	½	5	CIRC TO CHECK WELL PRIOR GYRO RIH
2045	2300	2¼	25	RIH GYRO TOOL
2300	2400	1	20	ORIENTATE TOOL

NOTES [illegible]

[illegible]

[signature]

		105 000	BLIND RIG UP	7575 KM