

**AUTHORITY TO
DRILL A WELL**



Office national
de l'énergie

Exploratory ☒
Development ☐

Delineation ☐
Service ☐

APPROVAL TO DRILL A WELL

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

Well Name: AEC (West) Renaissance Carcajou O-47
Operator: AEC OIL & GAS
Contractor: Akita Drilling Ltd.
Drilling Rig or Unit: Rig #14
Location-Unit: O Section: 47
Coordinates: Lat.: 65 36' 47".81216 Long.: 128 38' 11".52572
Area: Carcajou (Ft. Good Hope/ Norman Wells)
Elevation-KB/RT: 61.24m (est.) (ASL)
Approx. Spud Date: March 4, 2000
Anticipated Total Depth: 775m
Drilling Program No.:
Interest Identifier:
Estimated Well Cost: \$ 920,000
Grid Area: 65 40', 128 30'
Field / Pool: Exploratory
GL / Seafloor: 57.24m
Est. Days on Location: 10
Target Horizons: Kee Scarp

EVALUATION PROGRAM

Ten-metre sample intervals
Five-metre sample intervals Base of Surface casing to TD; 2 sets of 7 ml vials
Canned sample intervals None
Conventional cores at Possible Core in the Kee Scarp
Logs and Tests DLTE/MSFL/LDTD/CNTH/SGTL/BHC/GR; 580m to TD, 1-DST in the Kee Scarp

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m KB)	Cementing Program
244.5	53.57	J-55	125m	Arctic Set
177.8	34.2	J-55	470m	RFC + add.
114.3	14.14	J-55	775m	RFC + add.

B.O.P. Equipment: 9" 3000psi Shaffer Annular Preventer, 9" 3000psi Shaffer LWS Ram Blind Preventer, Spool,
9" 3000psi Shaffer LWS Pipe Ram Preventer, Spool,

Other Information:

Signed:

Responsible Officer

Title: Senior Vice President
South West Business Unit

Name: Ken Woldum

Company: AEC Oil & Gas

Date: 2000/01/07

Phone: (403) 213-2629

APPROVAL

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

Date:

Feb 11/2000

Signed:

Chief Conservation Officer

File: 9211-A061-2-4

WID: 1891

UWI: 3000476540128300

WELL
TERMINATION
RECORD (with
attachment)



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: AEC (West) Renaissance Carcajou O-47 Area: Carcajou (Ft. Good Hope)
Grid Area: 65 40', 128 30' Field / Pool: Exploratory
Interest Identifier: Final Coordinates: Lat: 65 36' 47" 81216" Long: 128° 38' 11" 52574
Drilling Unit: Rig #14 Elevations-KB/RT: 61.24m (ASL) GL/Seafloor: 57.24m
Spud Date: February 26/00 R.R.: March 25/00 Total Depth: 760m

O.D. (mm)	Weight (kg/m)	Grade	Depth Set (m KB)	Cement (m³)
406.4			20	2.5
244.5	53.57	J-55	134	8
177.8	34.2	J-55	487	10
114.3	14.1	J-55	748	11

PLUGGING PROGRAM

Approval of the following program was obtained by (person) Stephen J. Holyoake
from (person) Andy Graw of the National Energy Board
by means of a written request on March 30, 2000.

Type of Plug	Interval (m KB)	Felt	Cement (m³)
Single	10m - 0m	Not required	.2

Lost Circulation/Overpressure Zones:

Equipment left on Seafloor (Describe):

Provision for Re-entry (Describe and attach sketch):

Cores: Type: Intervals:

Other Downhole Completion/Suspension Equipment:

CERTIFICATION

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

Signed: *Stephen J. Holyoake* Title: Operations Engineer

Name: Stephen J. Holyoake Date: July 27, 2000

Company: AEC West

Well Status

Suspended ☐

Completed ☐

Abandoned ☒

Acknowledged by:

J. Mark
Chief Conservation Officer

Date:

File: 9211-A61-2-4

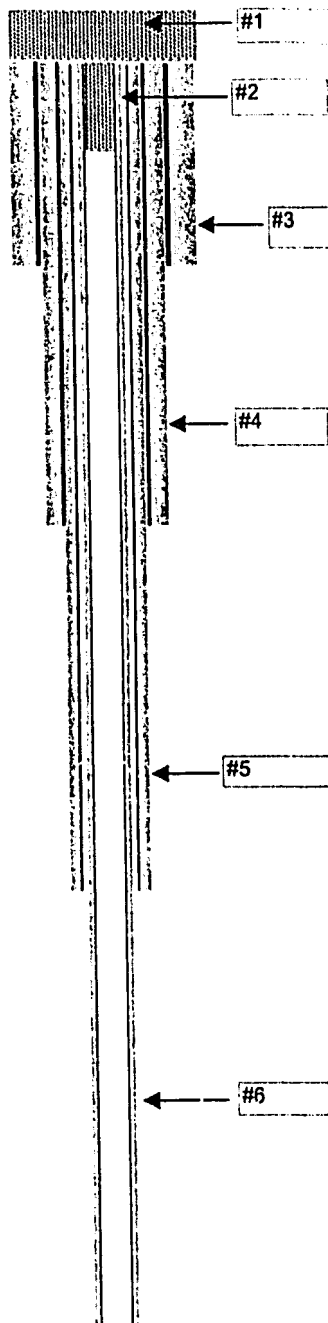
UWI: 3000476540128300

WID: 1891

Canada
444 Seventh Avenue SW
Calgary, Alberta T2P 0X8

444 Septième Avenue S.-O.

Telephone/Téléphone : (403) 292-4800
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01/07/99
NE Energy/NEE/NEP

[illegible]

**FINAL
WELL
REPORT**

N.E.B. COPY

FINAL WELL REPORT

AEC OIL & GAS

AEC (WEST) Renaissance Carcajou O-47

Grid #.65 40', 128 30'

DATE: 04/07/00

COMPANY REPRESENTATIVE: Stephen Holyoake

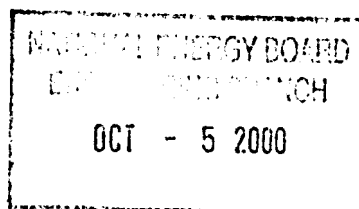


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Appendices may be used to give details on the subjects below, if not given elsewhere in the report.

- 1.Stratigraphic column.
- 2.Geological Prognosis.
- 3.Synthetic Seismograms
- 4.Well Licence
- 5.Directiona! Survey
- 6.Summary of Drilling Costs.

A. INTRODUCTION

AEC Oil & Gas Company Ltd. drilled a 760 metre exploratory well spudded on March 23/00 and finishing on March 24/00 to evaluate oil potential in the Kee Scarp formation at a depth of 469mKB.

The drilling contractor was Akita Drilling based out of Nisku, Alberta. The drilling rig used was a land rig rated for 1600 m. The rig had a 32 m³ mud system and was equipped with two boilers.

The well was drilled on Exploration License No 1891 in which AEC West has a 100 % working interest.

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

Latitude:	65 36' 47".81216
Longitude:	128 38' 11.52572"

The surface hole rig was moved onto the location Feb 26/00 and the well spudded on Feb 26/00 at 06:00 hours to air drill the 406.5 mm conductor barrel to a depth of 30 m. The conductor pipe was cemented with good mud returns throughout. The diverter was nipped up and we ran in with 311mm bit to drill the surface hole.

The conductor shoe was then drilled out and the 311 mm surface hole was drilled ahead to 130 m.

The 2445 mm X 53.57 kg/m X J-55 LT&C casing was run with no problems and cemented with 7.5 tonnes of Arctic set Cement + 12 % BWOW + 0.2% D-46 + 0.8 % D-13 + 0.5% D-65. There was good mud returns reported throughout the cement job with .3 m³ cement returns. The plug was bumped with 3,500 kPa and the pressure held. The plug was down at 21:23 hours on Feb 29/00. The surface casing was set at 130 m. The surface hole rig was then released and moved to the D-07 location.

Once the Akita rig arrived the BOP's were installed and pressure tested. The annular preventor was pressure tested to 1,400 kPa low and 7,000 kPa high. The pipe rams, kelly cock, stabbing valve and downhole BOP valve were tested to 1,400 kPa low and 7,000 kPa high. The accumulator precharge bottles were checked and the accumulator function tested prior to drilling out.

The float collar and shoe were drilled out on March 20/00. A formation leak off test was done and the gradient was taken to 18.3 kPa/m without breaking down the formation. The 222 mm intermediate hole was drilled ahead to 463 m.

The BOP's were installed and pressure tested. The annular preventor was pressure tested to 1,400 kPa low and 10,000 kPa high. The pipe rams, kelly cock, stabbing valve and downhole BOP valve were tested to 1,400 kPa low and 10,000 kPa high. The accumulator precharge bottles were checked and the accumulator function tested prior to drilling out. The float collar and shoe were drilled out on March 21/00. The 156mm hole was drilled to a depth of 760m in the Hare Indian Formation.

After total depth had been reached the open hole was logged by Schlumberger. Log run # 1 was a DLL/MSFL/LDT/CNL/DAC/GR from total depth to the surface casing. Log run # 2 was a BHCS/GR/DAC from total depth to surface casing.

After the logs were evaluated it was decided to case the well and wait on the evaluation of the Carcajou O-~~74~~⁴⁷ well. The rig was then rigged out and released at 13:00 hours on March 25, 2000. After the evaluation of the O-~~74~~⁴⁷ well it was decided to abandon the well.

Casing was cut off 1m below surface with a 10m cement plug inside the innermost casing string, a steel plate was welded over both conductor and surface casing. A surface marker was installed and site cleaned up.

B. GENERAL DATA

1. Well Name: AEC (West) Renaissance Carcajou O-47

Authority to Drill a Well No: 1891

Exploration Agreement Number: 9211-A61-2-4

Location Unit: O

Section: 47

Grid Area: 65 40', 128 30'

Classification: Exploratory

2. Well Location: Carcajou (FT. Good Hope/Norman Wells)

Coordinates: Latitude: 65 36' 47".81216
Longitude: 128 38' 11.52572"

3. Unique Well Identifier: 300O476540128300

4. Operator: AEC Oil and Gas

5. Contractor: Akita Drilling Ltd.

6. Drilling Unit: Rig # 14
Land Rig

7. Position Keeping: Not Applicable, Land Rig

8. Support Craft (Helicopter): Helicopter/Plane

9. Drilling Unit Performance: Good

10. Difficulties and Delays:

11.Total Well Cost:\$746,912.00 (See attachment #6)

12.Horizontal Deviated Wells Require Bottom Hole Co-ordinates:

Latitude: NA

Longitude: NA

C. SUMMARY OF DRILLING OPERATIONS

1.Elevations:

Ground: 57.24(m above sea level)

KB: 61.24 (m above sea level)

KB To Casing Flange: 4m (KB to CF)

2.Total Depth:

FTD: 760mKB

TVD: 760mKB

3.Date and Hour Spudded: 02/26/00 @ 06:00

4.Date Drilling Completed: 03/24/00 @ 9:30

5.Date of Rig Release: 03/25/00 @ 13:00

6.Well status:Dry and Abandoned

7.Hole Sizes and Depths:

Conductor Hole: 406.4 mm to 30.5 mKB

Surface Hole: 311 mm to 130 mKB

Intermediate Hole:222 mm to 463 mKB

Main Hole: 156mm to 760 mKB

8.Casing and Cementing Record:

Conductor Hole:

Casing Size:406.4 mm

Casing Weight: 81.1 kg/m

Casing Grade:

Casing Make:

Number of Joints: 3.8

Thread:Welded

Depth Set: 30.5 m (KB)

Cut Height:At Surface KB

Cut off Depth:After abandonment 1m below ground level

Date Set:February 27, 2000

Cement Volume: 2 Tonne

Cement Type:Arctic Set Cement

Additives: 12% D-44

0.5% D-65

0.8% D-13

0.2% D-46

Surface Hole:

Casing Size:244.5 mm

Casing Weight: 53.57 kg/m

Casing Grade:J-55

Casing Make:Ipsco

Number of Joints: 10

Thread: ST&C

Depth Set: 126.8 m (KB)

Cut Height:At Surface (KB)

Date Set:Feb 29, 2000

Cement Volume: 7.5 Tonnes

Float Shoe Depth: 126.4m ✓

Float Collar Depth: 118.05 m

Cut Off Depth: 1m below ground level, after abandonment

Cement Type:Arctic Set Cement

Additives: 12% D-44

0.5% D-65

0.8% D-13

0.2% D-46

Cement Top:Surface (mKB)

Casing Bowl Size: 279 mm X 244.5 mm X 21 mpa

Casing Bowl Make:Cameron

Intermediate Hole:

Casing Size:177.8 mm

Casing Weight: 34.2 kg/m

Casing Grade:J-55

Casing Make:Ipsco

Number of Joints: 36

Thread: ST&C

Depth Set: 463 m (KB)

Cut Height:At Surface (KB)

Date Set:March 21, 2000

Cement Volume: 10.9 Tonnes

Float Shoe Depth: 462.7 m ✓

Float Collar Depth: 450.34 m

Cut Off Depth: 1m below ground level, after abandonment

Cement Type:Arctic Set Cement

Additives: 12% D-44

0.5% D-65

0.8% D-13

0.2% D-46

Cement Top:Surface (mKB)

Casing Bowl Size: 279 mm X 177.8 mm X 21 mpa

Casing Bowl Make:Cameron

Main Hole:

Casing Size:114.3 mm

Casing Weight: 14.14 kg/m

Casing Grade:J-55

Casing Make:Ipsco

Number of Joints: 63

Thread: ST&C

Depth Set: 760 m (KB)

Cut Height:At Surface (KB)

Date Set:March 25, 2000

Cement Volume: 12 Tonnes

Float Shoe Depth: 759.8 m

Float Collar Depth: 747.76 m

Cut Off Depth: 1m below ground level, after abandonment

Cement Type:Arctic Set Cement

Additives: 12% D-44

0.5% D-65

0.8% D-13

0.2% D-46

Cement Top:Surface (mKB)

Casing Bowl Size:

Casing Bowl Make:

9.Sidetracked Hole: Not Applicable**10.Drilling Fluid:**

Conductor Hole: Air

Surface Hole: Gel - Chemical

Properties:Viscosity: 65 sec/L

Weight: 1180 kg/m³

PH: 9.0

Intermediate: Water

Properties:Viscosity: 28 sec/L

Weight: 1000 kg/m³

PH: 11.0

Main: Gel - Chemical

Properties:Viscosity: 44 sec/L

Weight: 1060 kg/m³

PH: 10.5
 Water loss: 16.0 cc
 Filter Cake: 2

11. Fishing Operations: n/a

12. Well Kicks and Well Control Operations: n/a

13. Formation Leak Off Tests:

Depth: 128 m
 Fluid Density: 1000 kg/m³
 Applied Pressure: 3584 kPa
 Hydrostatic Press. 1256 kPa
 Mud Weight Equi. 2854 kg/m³
 Casing Setting Depth: 126 mKB

The leak-off test was taken to a gradient of 28 kPa /m without breaking down the formation.

14. Time Distribution: **Example of time distribution: Can be modified to suit well**
e.g., time increments can be longer to shorten table.

tour_start date	tour_event start_time	tour_event end_time	tour_event	tour_event duration	Remarks
2/25/00	00:00:00	11:00:00	Tear out rig.	11	Tear out rig on O-74
2/25/00	11:00:00	15:00:00	Rig Move	4	
2/25/00	15:00:00	18:00:00	Rig up	3	
2/25/00	18:00:00	18:30:00	Safety meeting	0.5	
2/25/00	18:30:00	23:59:00	Rig up	5.48	
2/26/00	00:00:00	01:30:00	Rig up	1.5	Rig up ODEX air drilling
2/26/00	01:30:00	06:00:00	Rig up	4.5	Rig up/ prepare casing
2/26/00	06:00:00	19:00:00	Drilling	13	
2/26/00	19:00:00	19:30:00	Safety meeting	0.5	
2/26/00	19:30:00	22:30:00	Drilling	3	
2/26/00	22:30:00	23:59:00	P.O.O.H	1.48	
2/27/00	00:00:00	01:30:00	Weld on Bowl	1.5	Weld on cement nipple
2/27/00	01:30:00	02:00:00	Safety meeting	0.5	
2/27/00	02:00:00	04:00:00	Cement casing	2	
2/27/00	04:00:00	06:00:00	Rig up	2	Rig up to drill with mud
2/27/00	06:00:00	07:30:00	Nipple up BOP's	1.5	Weld on diverter
2/27/00	07:30:00	09:00:00	Repair Rig	1.5	
2/27/00	09:00:00	10:00:00	RIH	1	
2/27/00	10:00:00	10:30:00	Safety meeting	0.5	
2/27/00	10:30:00	12:30:00	Drill out cement	2	
2/27/00	12:30:00	19:00:00	Drilling	6.5	
2/27/00	19:00:00	19:30:00	Safety meeting	0.5	
2/27/00	19:30:00	23:59:00	Drilling	4.48	

2/28/00	00:00:00	06:00:00	Drilling	6	
2/28/00	06:00:00	07:00:00	Cond mud	1	
2/28/00	07:00:00	09:00:00	Drilling	2	
2/28/00	09:00:00	12:00:00	Wiper trip	3	
2/28/00	12:00:00	13:30:00	Cond mud	1.5	
2/28/00	13:30:00	19:00:00	Wait on tools	5.5	Wait on power tongs
2/28/00	19:00:00	21:30:00	Wait on tools	2.5	Wait on power tongs
2/28/00	21:30:00	23:00:00	P.O.O.H	1.5	
2/28/00	23:00:00	23:59:00	Rig up	0.98	Rig up to run casing
2/29/00	00:00:00	06:00:00	Wait on tools	6	Wait on power tongs/loader 2/29/00
2/29/00	13:00:00	14:30:00	Circulate casing	1.5	
2/29/00	14:30:00	15:00:00	Safety meeting	0.5	
2/29/00	15:00:00	17:30:00	Cement casing	2.5	
2/29/00	17:30:00	23:59:00	Tear out rig.	6.48	Tear out rig and rig up
3/20/00	04:00:00	08:00:00	Drill rathole	4	
3/20/00	08:00:00	11:00:00	Pressure Test	3	
3/20/00	11:00:00	12:00:00	RIH	1	To 121m.
3/20/00	12:00:00	14:30:00	Pressure Test	2.5	
3/20/00	14:30:00	14:45:00	Rig Service	0.25	
3/20/00	14:45:00	15:00:00	B.O.P. drill	0.25	
3/20/00	15:00:00	16:30:00	Drill out cement	1.5	
3/20/00	16:30:00	16:45:00	Pressure Test	0.25	Form. integrity test.
3/20/00	16:45:00	17:00:00	B.O.P. drill	0.25	
3/20/00	17:00:00	23:30:00	Drilling	6.5	
3/20/00	23:30:00		Accumulated surveys	0.5	
3/20/00		04:00:00	Nipple up BOP's	4	
3/21/00	00:15:00	00:30:00	B.O.P. drill	0.25	
3/21/00	00:30:00	07:45:00	Drilling	7.25	
3/21/00	07:45:00	08:00:00	Accumulated surveys	0.25	
3/21/00	08:00:00	08:15:00	Rig Service	0.25	
3/21/00	08:15:00	11:30:00	Drilling	3.25	To 454m.
3/21/00	11:30:00	12:15:00	Circulate	0.75	
3/21/00	12:15:00	13:45:00	Wiper trip	1.5	To 126m.
3/21/00	13:45:00	14:30:00	Drilling	0.75	
3/21/00	14:30:00	14:45:00	Accumulated surveys	0.25	
3/21/00	14:45:00	15:15:00	Circulate	0.5	
3/21/00	15:15:00	16:30:00	P.O.O.H	1.25	Lay down 158mm d.c's.
3/21/00	16:30:00	17:30:00	Handle tools	1	Lay down dir tools.
3/21/00	17:30:00	19:45:00	Run casing	2.25	37 jts. 177.8mm.
3/21/00	19:45:00	20:30:00	Circulate casing	0.75	
3/21/00	20:30:00	21:30:00	Cement casing	1	
3/21/00	21:30:00		W.O.C.	2.5	
3/21/00		00:15:00	Rig Service	0.25	
3/22/00	03:30:00	05:45:00	RIH	2.25	W/ directional tools.
3/22/00	05:45:00	06:30:00	Pressure Test	0.75	Casing.
3/22/00	06:30:00	08:00:00	Drill out cement	1.5	
3/22/00	08:00:00	08:15:00	B.O.P. drill	0.25	
3/22/00	08:15:00	16:00:00	Drilling	7.75	
3/22/00	16:00:00	16:15:00	Rig Service	0.25	
3/22/00	16:15:00	20:00:00	Drilling	3.75	

3/22/00	20:00:00	20:15:00	B.O.P. drill	0.25	
3/22/00	20:15:00	23:30:00	Drilling	3.25	
3/22/00	23:30:00		Accumulated surveys	0.5	
3/22/00		03:30:00	W.O.C.	3.5	
3/23/00	01:00:00	01:15:00	Rig Service	0.25	
3/23/00	01:15:00	08:00:00	Drilling	6.75	
3/23/00	08:00:00	08:15:00	Rig Service	0.25	
3/23/00	08:15:00	16:00:00	Drilling	7.75	
3/23/00	16:00:00	16:15:00	Rig Service	0.25	
3/23/00	16:15:00	23:15:00	Drilling	7	
3/23/00	23:15:00		Accumulated surveys	0.75	
3/23/00		01:00:00	Drilling	1	
3/24/00	02:00:00	02:15:00	Rig Service	0.25	
3/24/00	02:15:00	09:00:00	Drilling	6.75	
3/24/00	09:00:00	09:15:00	Rig Service	0.25	
3/24/00	09:15:00	09:30:00	Accumulated surveys	0.25	
3/24/00	09:30:00	11:00:00	Circulate	1.5	
3/24/00	11:00:00	13:15:00	Wiper trip	2.25	To shoe.
3/24/00	13:15:00	13:45:00	Circulate	0.5	
3/24/00	13:45:00	15:45:00	Holst to log	2	
3/24/00	15:45:00	16:30:00	Handle tools	0.75	Lay down dir. tools.
3/24/00	16:30:00		Logging	7.5	
3/24/00		02:00:00	Drilling	2	

Time Break Down

<u>Activity</u>	<u>Hours</u>	
Drilling:	78	
Surveying:	2	
Circulating:	22	
Cementing:	7	
WOC:		15.25
Rig Service:	1	
Rig Repair:	51	
Tripping, Reaming:	49.75	
Running casing:	15.25	

15.DEVIATION SURVEY

Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)	Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)
1	140	2.800		30	421	1.900	10
2	150	2.800	10	31	430	2.100	9
3	159	1.900	9	32	440	2.400	10
4	169	1.200	10	33	450	2.600	10
5	179	1.200	10	34	476	3.200	26
6	188	1.200	9	35	486	3.300	10
7	198	1.400	10	36	496	2.500	10
8	208	1.500	10	37	505	1.500	9
9	217	1.400	9	38	515	0.900	10
10	227	1.600	10	39	535	0.600	20
11	237	1.800	10	40	544	0.800	9
12	247	1.700	10	41	554	0.900	10
13	256	1.300	9	42	564	1.000	10
14	266	0.600	10	43	573	1.200	9
15	276	0.700	10	44	583	1.500	10
16	285	1.000	9	45	593	1.700	10
17	295	1.300	10	46	602	1.000	9
18	305	1.500	10	47	612	0.800	10
19	314	1.700	9	48	631	0.800	19
20	324	1.700	10	49	641	0.400	10
21	334	1.800	10	50	651	0.800	10
22	344	1.100	10	51	661	0.900	10
23	353	1.500	9	52	670	0.900	9
24	363	1.500	10	53	690	1.100	20
25	372	1.400	9	54	699	1.100	9
26	382	1.800	10	55	728	1.700	29
27	392	2.000	10	56	738	1.600	10
28	401	2.100	9	57	747	1.600	9
29	411	2.000	10	58	760	1.600	13

16.Abandonment Plugs:

Plug 1
 Date 00-03-25
 Interval 0m - 10m
 Formation Name
 Formation Depth (KB)
 Tonnes of Cement .2
 Additives 0.2% D46, 0.4% D13, 0.5% D65
 Volume of H₂O Ahead 0m³
 Displacement .2m³
 Slurry Density 1900kg/m³

Calculated Plug Depth -1.5m GL
 Felt Plug Depth (KB) Not felt
 Fluid Between Plugs Gel-Chem mud

17. Composite Well Record: See attached Well Logs and give an explanation.

18. Completion Record: No Completion, Well abandoned

Start Date:NA

Finish Date:NA

Contractor:NA

Completion Summary: No Completion, Well abandoned

Date:

Perf / OH Interval:

Swab / Flow Results:

Stimulation / Comments:

Final Well Configuration: Attach Stick Diagram. (See Attachment 1B)

D: GEOLOGY

Geological Summary

TOPS:

K.B. 61.5 meters

Formation	Prognosis Depth (m)	Subsea (m)	Samples MD (m)	Logs Subsea (m)	MD (m)	Subsea (m)
Cretaceous	23.5	38.0	np	np	np	np
Devonian						
Imperial	242.5	-181.0	331.0	-269.5	331.0	-269.5
Canol	469.5	-408.0	467.0	-405.5	absent	absent
Kee Scarp	470.5	-409.0	469.0	-407.5	470.0	-408.5
Hare Indian	711.5	-650.0	730.0	-668.5	729.0	-667.5
Total Depth	774.5	-713.0	760.0	-698.5	759.6	-698.1

SAMPLE DESCRIPTIONS:

135 - 159 m Interbedded Siltstone & Shale.

SILTSTONE - medium to dark grey to grey brown, blocky, very slightly calcareous, sandy, argillaceous to highly argillaceous, glauconite, trace carbonaceous flakes, micromicaceous.

SHALE - dark grey to black, subfissile to subblocky, silty to sandy, micromicaceous.
Minor Siderite.

- 159 - 180 m Shale with Siltstone stringers.
SHALE - dark grey to black, subfissile to fissile, silty to highly silty grading to Siltstone, trace pyrite, micromicaceous.
SILTSTONE - dark grey to grey brown, well cemented, argillaceous to highly argillaceous.
- 180 - 195 m Shale with Siltstone stringers.
SHALE - dark grey to black, subfissile to fissile, silty to highly silty grading to Siltstone, trace pyrite, micromicaceous.
- 195 - 209 m Shale with Siltstone stringers.
SHALE - dark grey to black, fissile to subfissile, silty to sandy grading to argillaceous Siltstone, micromicaceous.
- 209 - 225 m Interbedded Siltstone & Shale.
SILTSTONE - medium to dark grey, silt to very fine Sandstone, well cemented, calcareous to dolomitic cement, argillaceous, tight.
SHALE - dark grey to black, fissile to subfissile, silty to sandy grading to argillaceous Siltstone, micromicaceous.
- 225 - 245 m SHALE - dark grey to black, fissile to subfissile, platy, silty, micromicaceous, slightly carbonaceous, trace pyrite.
Minor Siderite stringers.
- 245 - 265 m SHALE - dark grey to black, fissile to subfissile, platy, slightly silty in part, micromicaceous, minor pyrite, carbonaceous, firm.
Minor Siderite.
- 265 - 290 m SHALE - dark grey to black, fissile to subfissile, platy, slightly silty in part, micromicaceous, minor pyrite, carbonaceous, firm.
Minor Siderite.
- 290 - 310 m Interbedded Shale & Siltstone.
SHALE - dark grey, fissile to subfissile, blocky, silty, carbonaceous, micromicaceous, disseminated pyrite.
SILTSTONE - dark grey to grey brown, argillaceous, calcareous in part, sandy grading, rare glauconite, micromicaceous, pyritic.
- 310 - 326 m Shale with Siltstone interbeds.
SHALE - dark grey, fissile to subfissile, blocky, silty, carbonaceous, micromicaceous, disseminated pyrite.
SILTSTONE - dark brown to grey brown, well cemented, argillaceous, slightly calcareous, sandy in part, tight.
- 326 - 331 m SANDSTONE - off white to light tan, clear & frosted quartz, very fine to coarse, subangular to

subround, moderately sorted, poorly cemented to loose, clean, trace clay, trace glauconite, trace pyrobitumen, fair to good porosity (>10%), slow white streaming cut.

- 331 - 358 m
(*Imperial*) Siltstone with Shale interbeds & laminae.
SILTSTONE - grey to grey brown, siliceous, sandy grading to very fine Sandstone in part, argillaceous, slightly calcareous, carbonaceous flakes, ? to dead shows.
SHALE - dark grey, fissile, silty, micromicaceous, trace carbonaceous.
- 358 - 374 m Interbedded Siltstone & Shale.
SILTSTONE - grey to grey brown, siliceous, sandy grading to very fine Sandstone in part, argillaceous, slightly calcareous, carbonaceous flakes, ? to dead shows.
SHALE - dark grey, fissile, silty, micromicaceous, trace carbonaceous.
- 374 - 395 m Shale with Siltstone interbeds.
SHALE - dark grey, fissile, silty, micromicaceous, trace carbonaceous.
SILTSTONE - grey to grey brown, siliceous, sandy grading to very fine Sandstone in part, argillaceous, slightly calcareous, carbonaceous flakes, ? to dead shows.
- 395 - 415 m Sandstone grading to Siltstone.
SANDSTONE - medium brown grey, silt to very fine grained, subangular, well sorted, well cemented, silica cement, slightly dolomitic, argillaceous, carbonaceous flakes, tight, fast white cut.
SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut.
- 415 - 435 m Siltstone with Sandstone stringers & Shale laminae.
SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut.
- 435 - 457 m SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut.
Minor Shale laminae.
- 457 - 467 m Shale with Siltstone stringers.
SHALE - dark grey to black, fissile to subfissile, platy, silty, micromicaceous.
- 467 - 469 m
(*Canol*) SHALE - black, fissile, silty, micromicaceous, bituminous, trace pyrite.
- 469 - 496 m
(*Kee Scarp*) Limestone with Chert stringers.
LIMESTONE - light to medium brown, calcarenite to calcirudite, biomicrite, wackestone to rudstone, stromatoporoids, coral, fossil debris, argillaceous in part, siliceous altering to Chert in part, slightly dolomitic, minor bitumen residue, tight to trace poor (3%) chalky to intraskeletal porosity, bright white florescence, fast white cut, spotty shows.

- 496 - 510 m LIMESTONE - medium to dark brown, calcilutite to calcarenite, micrite to biomicrite, mudstone to wackestone, fossil debris, dense, argillaceous, residual bitumen, tight to trace fracture porosity, fast white streaming cut.
- 510 - 525 m LIMESTONE - medium to dark brown, calcilutite to calcirudite, micrite to biomicrite, mudstone to rudstone, stromatoporoids, fossil debris, dense, argillaceous, residual bitumen, tight to trace fracture porosity, dead to ? cut.
Minor Shale partings.
- 525 - 535 m LIMESTONE - light to medium brown, fine calcarenite to calcirudite, biomicrite, wackestone to rudstone, stromatoporoids, fossil debris, slightly argillaceous, residual bitumen, tight to trace fracture porosity, spotty florescence, slow weak cut.
- 535 - 562 m LIMESTONE - light brown grey (allochems) to dark brown (matrix), calcarenite to calcirudite, wackestone to rudstone, stromatoporoids, fossil debris, slightly argillaceous, residual bitumen, dolomitic in part, tight, no florescence, weak white cut, ? shows.
Minor Shale partings.
- 562 - 575 m LIMESTONE - light to medium brown, calcirudite, biomicrite, rudstone, stromatoporoids, fossil debris, slightly dolomitic, poor to fair (3-6%) chalky/intraskeletal porosity, bright even florescence, fast streaming white cut.
- 575 - 585 m LIMESTONE - light to medium brown, calcarenite to calcirudite, wackestone to rudstone, fossil debris, stromatoporoids, tight, weak white cut, ? shows.
- 585 - 600 m Limestone with minor Chert interbed.
LIMESTONE - light to medium brown, calcarenite to calcirudite, wackestone to rudstone, fossil debris, stromatoporoids, siliceous in part, tight, weak white cut, ? shows.
CHERT - dark brown to black, bedded, calcareous, hard, fractures?.
- 600 - 614 m LIMESTONE - light to medium brown, calcarenite to calcirudite, wackestone to rudstone, fossil debris, stromatoporoids, siliceous in part, tight, weak white cut, ? shows.
- 614 - 628 m LIMESTONE - medium grey brown to dark brown to black, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stromatoporoids, fossil debris, dense matrix, argillaceous to highly argillaceous in part, residual bitumen, tight, spotty to ? shows.
Trace Shale laminae.
- 628 - 640 m LIMESTONE - medium to dark grey brown, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stromatoporoids, fossil debris, dense matrix, slightly argillaceous in part, siliceous in part, minor residual bitumen, tight to trace chalky porosity (3%), minor fracture porosity, slow to fast streaming white cut.
Trace Chert stringers.
- 640 - 649 m LIMESTONE - light to medium brown to grey brown, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stromatoporoids, fossil debris, slightly argillaceous in part, minor residual bitumen, tight to trace chalky porosity (3%), minor fracture porosity, fast streaming

white cut.

Fracture filling calcite.

- 649 - 658 m LIMESTONE - medium to dark brown, calcilutite to calcarenite, micrite to biomicrite, mudstone to wackestone, fossil debris, argillaceous, siliceous, dense, fast streaming white cut.
- 658 - 675 m LIMESTONE - light to medium brown to grey brown, calcarenite to calcirudite, biopelmicrite, wackestone to rudstone, fossil debris, pellets, stromatoporoids, argillaceous in part, slightly dolomitic, minor bitumen residue, tight to trace poor (<3%) porosity, spotty to ? shows. Minor Shale laminae.
- 675 - 709 m LIMESTONE - light to medium brown (allochems) to dark brown (matrix), micrite to biomicrite, mudstone to rudstone, stromatoporoids, fossil debris, argillaceous to highly argillaceous in part, siliceous to Cherty in part, tight, trace poor chalky porosity, moderate to fast streaming white cut. Minor Chert stringers. Minor Shale laminae.
- 709 - 730 m Interbedded Limestone, Shale & Siltstone.
LIMESTONE - light brown grey to dark brown, calcilutite to calcarenite, micrite to biomicrite, mudstone to wackestone, fossil debris, argillaceous to highly argillaceous grading to Shale, silty grading to Siltstone in part, tight, slow to moderate white cut.
SHALE - dark grey to black, subfissile to blocky, highly calcareous, slightly silty, trace pyrite, slightly bituminous.
SILTSTONE - medium brown, well cemented, highly calcareous, slightly argillaceous.
- 730 - 760 m Interbedded Shale & Siltstone with Limestone stringers.
 (Hare Indian) SHALE - dark grey to black, subfissile to blocky, calcareous to highly calcareous, silty, micromicaceous, bituminous, trace disseminated pyrite, fast streaming white cut.
SILTSTONE - medium to dark grey brown, well cemented, calcareous to highly calcareous, grading to Limestone in part, minor pyrobitumen, slow to moderate streaming white cut.
LIMESTONE - light brown with black specks, calcilutite, micrite, mudstone, very silty, pyrobitumen.

Total Depth: Driller - 760.0 meters

Loggers - 759.6 meters

CORING RECORD:

No cores cut

GAS DETECTION REPORT

DEPTH m	ROP min/m	TG units	DEPTH m	ROP min/m	TG units	DEPTH m	ROP min/m	TG units
125.5			337.5	1.8	137	549.5	7.7	96
126.5			338.5	7	136	550.5	6.9	77
127.5			339.5	10.4	103	551.5	7.1	95
128.5			340.5	6.6	69	552.5	7.4	81
129.5			341.5	6.1	79	553.5	7.7	84
130.5			342.5	3.5	103	554.5	7.3	95
131.5			343.5	2.3	200	555.5	7.1	88
132.5			344.5	2.4	202	556.5	8.1	108
133.5			345.5	2.8	198	557.5	6.8	86
134.5	0.1		346.5	3	166	558.5	6.3	93
135.5	2	31	347.5	3.3	194	559.5	6.8	95
136.5	2	30	348.5	2.4	178	560.5	7	94
137.5	1.2	29	349.5	3.7	138	561.5	6.7	92
138.5	1.8	21	350.5	2.8	121	562.5	7	93
139.5	0.9	13	351.5	2.5	132	563.5	5.9	109
140.5	0.9	14	352.5	2.5	121	564.5	5.8	156
141.5	1.1	18	353.5	3.4	110	565.5	6.7	146
142.5	1.3	18	354.5	2.5	112	566.5	7.5	141
143.5	1.5	16	355.5	2.7	114	567.5	5.7	120
144.5	1.5	12	356.5	3.5	101	568.5	5.3	216
145.5	1	26	357.5	3.7	124	569.5	5.8	202
146.5	1.5	21	358.5	1.4	122	570.5	7.2	193
147.5	0.9	7	359.5	2.2	117	571.5	6.9	176
148.5	1	6	360.5	1.5	100	572.5	7.3	154
149.5	1.1	7	361.5	1.8	68	573.5	7.3	141
150.5	1	8	362.5	1.5	53	574.5	6.9	135
151.5	1.1	10	363.5	1.9	20	575.5	7.3	164
152.5	1.3	10	364.5	1.8	90	576.5	7.3	162
153.5	2.5	10	365.5	1.6	100	577.5	5.4	144
154.5	3.1	12	366.5	2.6	110	578.5	6.8	138
155.5	5.3	28	367.5	2.3	111	579.5	6.1	50
156.5	4	32	368.5	3	49	580.5	5.8	46
157.5	2.8	32	369.5	2.3	38	581.5	6.2	46
158.5	4.6	30	370.5	2.3	38	582.5	6.3	51
159.5	1.3	33	371.5	2.8	26	583.5	6.4	62
160.5	1.3	31	372.5	2.3	31	584.5	6.3	53
161.5	1.2	37	373.5	2.8	71	585.5	6.8	57
162.5	1.4	39	374.5	1.3	80	586.5	7.4	58
163.5	2.7	41	375.5	1.9	84	587.5	6.1	86
164.5	2.5	31	376.5	1.8	85	588.5	6.9	125
165.5	2.8	39	377.5	1.6	88	589.5	6.3	140

166.5	2.2	41	378.5	1.3	70	590.5	6.8	150
167.5	2.9	41	379.5	1.8	57	591.5	6.2	149
168.5	1.2	44	380.5	1.9	51	592.5	6.7	139
169.5	1.6	39	381.5	1.5	55	593.5	6.7	125
170.5	1.1	50	382.5	1.8	93	594.5	6.7	108
171.5	1.3	41	383.5	1.6	103	595.5	6.7	109
172.5	1.5	35	384.5	1.7	110	596.5	8.3	150
173.5	1.4	37	385.5	2	107	597.5	9.8	131
174.5	1.6	46	386.5	1.5	64	598.5	8	112
175.5	1.3	34	387.5	1.5	78	599.5	7.6	72
176.5	1.3	33	388.5	1.5	92	600.5	7.7	71
177.5	1.1	35	389.5	2.9	91	601.5	7.2	75
178.5	0.9	42	390.5	4.3	51	602.5	5.9	70
179.5	1	47	391.5	4.5	65	603.5	6.4	71
180.5	1.3	47	392.5	4.4	71	604.5	6.5	67
181.5	1.7	46	393.5	5	131	605.5	6.8	69
182.5	2.1	31	394.5	4.5	160	606.5	5.8	79
183.5	1.3	31	395.5	4.3	192	607.5	11.7	89
184.5	1.6	50	396.5	5.1	188	608.5	5	89
185.5	1.7	46	397.5	3.7	192	609.5	8.6	81
186.5	1.7	33	398.5	4.3	233	610.5	6	74
187.5	1.5	37	399.5	15	230	611.5	6.2	89
188.5	1.5	42	400.5	2.7	203	612.5	7	81
189.5	1.6	31	401.5	10.5	202	613.5	6.6	83
190.5	1.7	25	402.5	3	195	614.5	6.7	83
191.5	2.6	26	403.5	2.8	210	615.5	6.4	81
192.5	1.7	29	404.5	2.8	219	616.5	5.5	95
193.5	1.8	33	405.5	6.8	218	617.5	6.7	96
194.5	2.1	33	406.5	17	215	618.5	6.5	91
195.5	1.9	17	407.5	18	70	619.5	6.3	90
196.5	1.9	13	408.5	5.6	186	620.5	6.6	80
197.5	1.9	11	409.5	5.6	193	621.5	6.5	77
198.5	1.8	14	410.5	5.1	180	622.5	6.9	76
199.5	1.5	14	411.5	5.4	188	623.5	6.1	71
200.5	1.9	15	412.5	5.8	195	624.5	6.9	77
201.5	1.8	19	413.5	5.3	199	625.5	7.1	66
202.5	1.3	29	414.5	4.8	200	626.5	7.3	67
203.5	1.3	25	415.5	6.2	214	627.5	7.9	63
204.5	1	22	416.5	4.3	258	628.5	6.4	58
205.5	1.1	15	417.5	4.3	278	629.5	6.3	59
206.5	1.1	18	418.5	4.1	252	630.5	6.8	60
207.5	1	22	419.5	4.1	229	631.5	7	64
208.5	1	22	420.5	3.9	223	632.5	7.2	66
209.5	1.5	15	421.5	3.8	215	633.5	7.4	65
210.5	1.8	10	422.5	4	202	634.5	8.2	67
211.5	2.8	26	423.5	3.7	174	635.5	7.8	65

212.5	1.5	27	424.5	4.3	233	636.5	9.2	60
213.5	1.6	16	425.5	4.4	240	637.5	9.3	58
214.5	1.6	13	426.5	3.3	202	638.5	9.3	56
215.5	1.5	21	427.5	3.8	202	639.5	10.4	55
216.5	1.4	21	428.5	4.3	196	640.5	9.8	54
217.5	1.4	20	429.5	4.4	180	641.5	9.7	50
218.5	1.3	23	430.5	4.3	189	642.5	9.2	51
219.5	1.8	13	431.5	4.2	210	643.5	9.7	55
220.5	1.9	28	432.5	3.6	207	644.5	10.3	57
221.5	1.4	35	433.5	3.9	211	645.5	9.3	57
222.5	1.2	26	434.5	5.8	225	646.5	8.5	55
223.5	1.1	23	435.5	3.5	218	647.5	8.5	61
224.5	1	17	436.5	4	216	648.5	7.8	52
225.5	1.4	16	437.5	4.3	191	649.5	9.7	51
226.5	0.9	16	438.5	3.7	186	650.5	9.3	56
227.5	1.4	16	439.5	3.6	185	651.5	9.2	55
228.5	1.4	12	440.5	3.9	170	652.5	10.2	52
229.5	1.3	21	441.5	3.8	166	653.5	10.6	53
230.5	1.5	29	442.5	3.8	148	654.5	9.9	51
231.5	1.2	30	443.5	4.3	135	655.5	10.1	51
232.5	1.3	25	444.5	5.8	160	656.5	11.6	47
233.5	1.3	27	445.5	4.3	145	657.5	10.6	52
234.5	1.1	30	446.5	3.7	117	658.5	12	56
235.5	1.8	30	447.5	3.6	149	659.5	12.5	51
236.5	1.5	27	448.5	3.7	156	660.5	12	51
237.5	1.3	33	449.5	3.7	152	661.5	11.9	51
238.5	1.3	24	450.5	3.6	161	662.5	12.7	52
239.5	1.7	43	451.5	3.2	139	663.5	13.2	56
240.5	1.8	47	452.5	3.3	106	664.5	13.2	54
241.5	1.3	49	453.5	3.7	195	665.5	12.3	53
242.5	1.8	36	454.5	4.1	188	666.5	11.9	71
243.5	1.8	31	455.5	3.6	200	667.5	11.8	65
244.5	1.8	31	456.5	3	200	668.5	11.2	66
245.5	1.7	31	457.5	1.6	221	669.5	12.2	67
246.5	1.4	27	458.5	1.8	220	670.5	12.1	71
247.5	1.3	27	459.5	1.6	244	671.5	12.2	70
248.5	1.5	29	460.5	1.6	223	672.5	12.3	67
249.5	2	45	461.5	1.6	51	673.5	12.2	64
250.5	1.8	50	462.5	1.5	53	674.5	12.1	63
251.5	2.6	51	463.5	2.3	47	675.5	12.8	60
252.5	2.6	41	464.5	1.6	130	676.5	12.9	69
253.5	2	49	465.5	5	126	677.5	11.6	73
254.5	4.3	63	466.5	10.8	52	678.5	11.2	78
255.5	3.1	71	467.5	6.4	45	679.5	11.9	85
256.5	1.3	85	468.5	5.3	57	680.5	14	84
257.5	1.3	80	469.5	8.2	62	681.5	10.6	84

258.5	1.3	93	470.5	13	13	682.5	12.9	80
259.5	1.3	93	471.5	15	10	683.5	12.8	83
260.5	2.9	77	472.5	7.3	9	684.5	13.3	78
261.5	2.3	108	473.5	7.3	9	685.5	12.5	70
262.5	3.8	35	474.5	6.8	9	686.5	12.1	65
263.5	2.3	38	475.5	7	10	687.5	12.3	68
264.5	5.4	60	476.5	6.8	9	688.5	12.3	62
265.5	2.3	60	477.5	8.2	10	689.5	12.1	58
266.5	1.3	62	478.5	8.5	9	690.5	11.7	74
267.5	1	103	479.5	8.3	9	691.5	12.4	69
268.5	0.9	149	480.5	6.7	93	692.5	13	65
269.5	1.2	165	481.5	8	89	693.5	13.5	57
270.5	1.8	168	482.5	7.6	84	694.5	13.1	56
271.5	1.3	167	483.5	7.3	73	695.5	13.2	51
272.5	1.3	52	484.5	6.8	69	696.5	12.7	50
273.5	1.3	48	485.5	8.7	67	697.5	13.2	48
274.5	1.2	36	486.5	6.8	48	698.5	12.9	46
275.5	1.1	33	487.5	7.2	32	699.5	13.1	44
276.5	1	31	488.5	9.8	32	700.5	12.7	42
277.5	1.3	40	489.5	14.6	28	701.5	13.5	38
278.5	1.3	42	490.5	15.1	41	702.5	12.2	38
279.5	2	44	491.5	15.2	26	703.5	12.3	54
280.5	1.3	34	492.5	12.8	25	704.5	14.6	49
281.5	1.4	14	493.5	12.5	28	705.5	12.5	47
282.5	1.3	18	494.5	9.3	34	706.5	12.7	48
283.5	1.3	20	495.5	9.3	33	707.5	12.6	47
284.5	1	22	496.5	8.3	37	708.5	13.1	47
285.5	1	26	497.5	8.1	39	709.5	10.7	56
286.5	1.2	22	498.5	9	49	710.5	10.8	107
287.5	1.3	24	499.5	12.3	54	711.5	11.2	168
288.5	1.4	25	500.5	11.3	48	712.5	10.9	155
289.5	1.5	26	501.5	11.8	50	713.5	11.7	155
290.5	1.2	25	502.5	10.7	49	714.5	12.4	146
291.5	1.2	18	503.5	8.9	50	715.5	11.5	146
292.5	1.2	19	504.5	7.6	50	716.5	13.3	149
293.5	1.2	19	505.5	7.8	48	717.5	10.6	155
294.5	1	15	506.5	7.8	50	718.5	11.2	142
295.5	1.8	40	507.5	7.9	59	719.5	10.8	141
296.5	0.9	62	508.5	9.2	69	720.5	11.1	121
297.5	0.9	65	509.5	8.1	197	721.5	13.1	108
298.5	1.2	75	510.5	11.6	105	722.5	9.8	102
299.5	1.8	80	511.5	10.8	91	723.5	10.9	105
300.5	1.3	55	512.5	9.8	63	724.5	12	97
301.5	1.4	15	513.5	10.3	67	725.5	8.2	84
302.5	1.3	14	514.5	8.7	67	726.5	11.9	88
303.5	1.6	12	515.5	9.1	64	727.5	11.3	100

304.5	1.3	10	516.5	8.9	53	728.5	11.8	81
305.5	1.6	13	517.5	11	66	729.5	11.5	78
306.5	1.5	19	518.5	6.5	75	730.5	11.3	89
307.5	1.3	30	519.5	7.7	103	731.5	11.8	139
308.5	1.6	44	520.5	8.3	88	732.5	11	190
309.5	1.9	36	521.5	8.7	71	733.5	10.1	396
310.5	1.2	29	522.5	8.5	72	734.5	11.3	396
311.5	1.3	23	523.5	8.3	59	735.5	9	359
312.5	1	18	524.5	8.8	58	736.5	9.7	442
313.5	1.3	15	525.5	8.8	72	737.5	9.3	423
314.5	1.3	14	526.5	6.6	75	738.5	10	431
315.5	1.6	25	527.5	9.2	101	739.5	10.3	369
316.5	1.6	39	528.5	8.1	94	740.5	10.2	429
317.5	1.3	40	529.5	7.3	110	741.5	13.6	433
318.5	2	45	530.5	7.2	92	742.5	10.7	420
319.5	1.3	45	531.5	6.6	94	743.5	10.4	335
320.5	1.8	24	532.5	7.6	109	744.5	10.4	348
321.5	2	22	533.5	8.6	99	745.5	11.2	276
322.5	2.5	17	534.5	7.3	97	746.5	11.6	274
323.5	3	16	535.5	7.8	92	747.5	11.3	223
324.5	2.1	23	536.5	7.7	99	748.5	11	184
325.5	2.8	23	537.5	8.3	112	749.5	11.3	127
326.5	3.8	17	538.5	7.6	99	750.5	11.3	110
327.5	4.9	20	539.5	7.3	89	751.5	10.1	134
328.5	12	25	540.5	7.6	94	752.5	11.1	133
329.5	7.7	204	541.5	7.6	88	753.5	11	101
330.5	5.1	322	542.5	7.9	87	754.5	11.8	71
331.5	1.7	303	543.5	7.8	73	755.5	12.1	61
332.5	2	138	544.5	7.5	73	756.5	11.8	53
333.5	1.8	148	545.5	7.8	70	757.5	11.9	44
334.5	1.5	157	546.5	7.9	71	758.5	11.6	39
335.5	1.7	157	547.5	7.8	68	759.5	12.6	37
336.5	2.1	114	548.5	7	80			

SIGNIFICANT TOTAL GAS RESPONSE:

<u>Depth</u>	<u>TG</u>	<u>Avg Background</u>	<u>Interpr. lithology</u>
267-271	168	60	Shale/carbonate
328-331	322	255	Sandstone
509	197	50	Limestone-fractured
564-578	216	80	limestone
587-592	150	50	limestone
730-745	433	120	bituminous shale/limestone

ANALYSES

MUD REPORT

Date	Depth (m)	Density (kg/m ³)	Viscosity (s/l)	pH	Water Loss
3/22/00	566	1060	44	10.5	16.0
3/23/00	712	1100	46	9.0	12.0
3/24/00	760	1115	64	9.0	9.2
3/25/00	760	1115	64	9.0	9.2

GAS, OIL, & WATER ANALYSES:

None .

F. APPENDICES TO WELL HISTORY

(See Table of Contents)

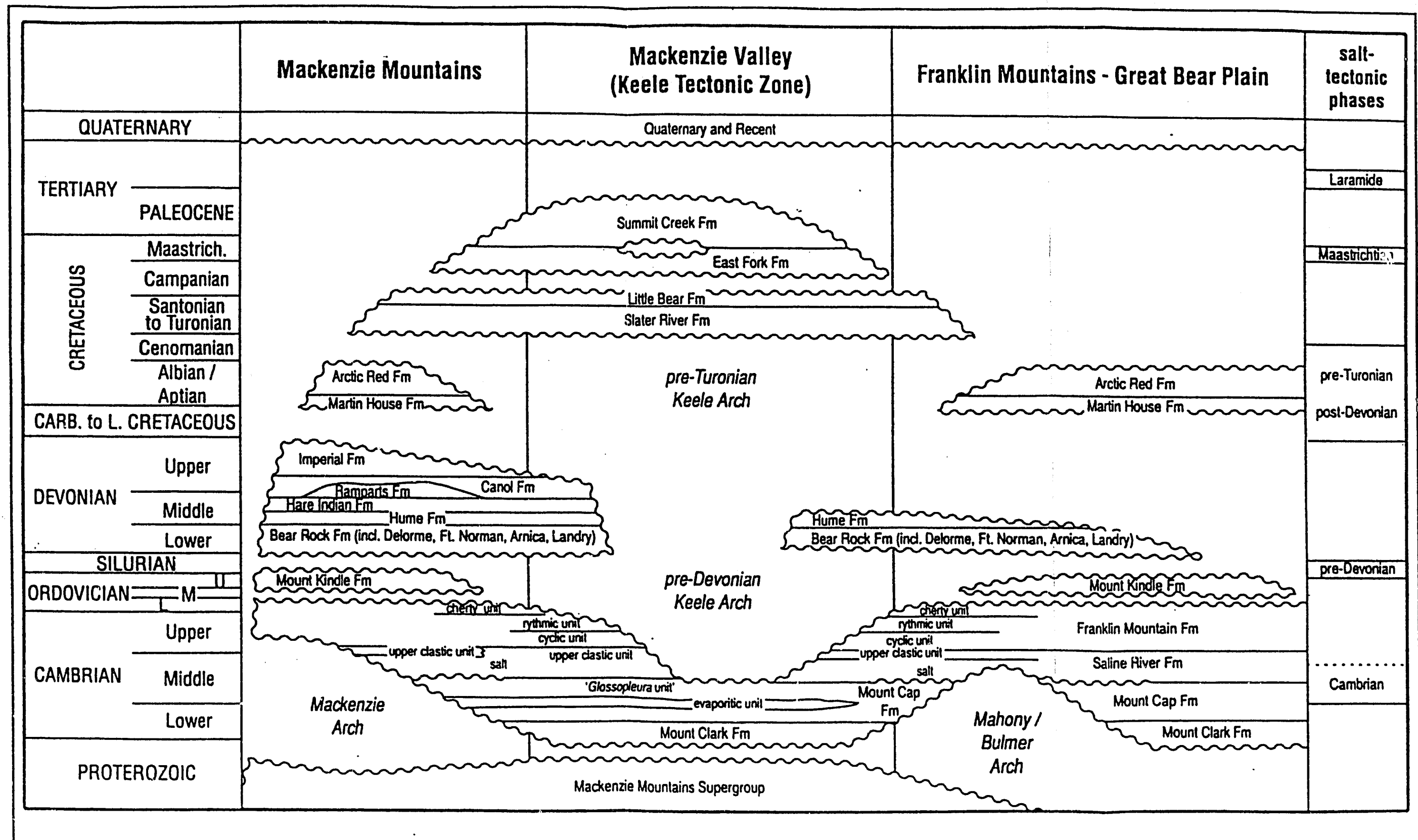


Fig. 5. Regional stratigraphic and tectonic relationships chart including salt tectonic phases in the study area.

From: B.C. Maclean and D.G. Cook, 1999; Bull. Cdn. Petr. Geol., vol. 47.

Five Year Data Belongs Here

Summary of Drilling Costs

Alberta Energy Company Ltd.

Wellbore Name	AEC (WEST) REN CARCAJOU O-47	AFE Numbers	5000048	Supervisor	ALLAN ANGER
Spud Date	Mar 20, 2000	Rig Release Date	Mar 25, 2000		

Major Code	Minor Code	Cost Description	02/25/00	02/26/00	02/27/00	02/28/00	02/29/00	03/20/00	03/21/00	03/22/00	03/23/00	03/24/00	03/25/00				Accum. Total	AFE Est.	Var.
5001	202	Rig Move											50,000				\$50,000	\$0	-50,000
9210	308	LOCATION PREP/ROAD						250,000									\$250,000	\$35,000	-215,000
9210	314	CONDUCTOR/RAT/MOUSEHOLE		13,230													\$13,230	\$30,000	16,770
9210	316	RIG/CAMP MOVE IN/OUT						30,000									\$30,000	\$0	-30,000
9210	320	DIRECTIONAL SERVICES						6,300	6,850	7,725	9,025	6,425					\$36,325	\$0	-36,325
9210	324	DAYWORK	10,000	10,000	10,000	10,000	10,000	14,000	14,000	14,000	1,400	14,000	14,000				\$121,400	\$208,000	86,600
9210	328	STEAMER	1,000	1,400	1,400	1,400	800										\$8,000	\$33,000	27,000
9210	330	TRAVL/SUBSTANCE/CAMP	1,800	1,800	1,800	1,800	1,800	5,000	5,000	5,000	5,000	5,000	5,000				\$39,000	\$98,000	59,000
9210	334	MUD/FLUIDS/LUBRICATION						1,122	962	1,388	807	1,329					\$5,608	\$25,000	19,392
9210	336	BITS		3,000	1,200				5,000	10,000							\$19,200	\$29,000	9,800
9210	340	EQUIPMENT RENTAL	1,600	470	470	520	520	2,060	2,060	2,060	1,660	1,615					\$13,035	\$39,000	25,965
9210	346	WATER ACCESS/HAULING	800	1,000	1,000	600	600	1,380	2,070	1,610	1,380	1,380					\$11,820	\$21,000	9,180
9210	352	CONTRACT SERVICE/LABOR						2,760	3,760	2,680	2,680	2,680					\$14,560	\$15,000	440
9210	356	LOG/PERF/ANALYSIS										29,000					\$29,000	\$70,000	41,000
9210	370	SUPERVISION/VEHICLE/TELEPHONE	800	800	800	800	800	1,700	1,700	1,700	1,700	1,700	1,500				\$14,000	\$22,000	8,000
9210	378	SAFETY/ENVIRONMENT	600	600	600	600	600	800	800	800	800	800					\$7,000	\$11,000	4,000
9210	390	CASING BOWL							2,000								\$2,000	\$2,500	500
9210	391	SURFACE CASING					7,150										\$7,150	\$9,000	1,850
9210	392	SURFACE CASE-CEMENT					33,585										\$33,585	\$27,000	-6,585
9210	394	SURFACE CASE-ACC/WELD/TONGS					1,959										\$1,959	\$3,000	1,041
9210	395	INTERMEDIATE CASING							16,740								\$16,740	\$14,000	-2,740
9210	396	INTERMEDIATE CASING - CEMENTING							23,300								\$23,300	\$20,000	-3,300
9210	397	INTERMEDIATE CASE-ACC/WELD/TONGS							2,000								\$2,000	\$8,000	6,000
9210	300	CONSULTING/EVALUATION/DESIGN															\$0	\$7,000	7,000
9210	302	SURFACE RIGHTS/SURVEY/EASEMENTS															\$0	\$35,000	35,000
9210	312	CLEANUP/ABANDON															\$0	\$25,000	25,000
9210	348	TRANSPORT/TRUCKING															\$0	\$22,000	22,000
9210	350	INSPECTION/SERVICE															\$0	\$3,000	3,000
9210	354	CORING/ANALYSIS															\$0	\$35,000	35,000
9210	358	DRILL STEM TEST/ANALYSIS															\$0	\$8,000	8,000
9210	372	COMMUNICATION/TELEPHONE															\$0	\$4,000	4,000
9210	386	OVERHEAD															\$0	\$13,000	13,000
9210	400	PRODUCTION CASING															\$0	\$17,000	17,000
9210	402	PRODUCTION CASING-CEMENT															\$0	\$22,000	22,000
9210	404	PRODUCTION CASING-ACC/WELD/TONGS															\$0	\$9,000	9,000
Cumulative Well Cost to Date			16,600	32,300	17,270	15,720	57,815	65,122	336,242	46,963	24,452	63,929	70,500				746,912	919,500	172,588

GEOLOGICAL PROGNOSIS

AEC(West) Renaissance Carcajou O-47

location: 65° 36'47.81216"N, 128° 38'11.52572"W

NAD1927

Line 99CAR99-01 shot point 2459

Formation	Drill Depth(TVD)	Subsea depth	interval	Lithology
KB	0	+62m	0	
Surface GL	4m	+58m	4m	air
Pleistocene	4m	+58	20m	Tundra, Gravel/ sands/silty-shale
Cretaceous	24m	+38m	219m	Shale/silt/sand//Basal sand thin
Devonian Imperial	243m	-181m	227m	Shale slightly silty dk. Grey
Mid Devonian Canol	470m	-408m	1m	Shale Black(source rock)
Kee Scarp *	471m	-409m	241m	Limestone(tight/porous) *objective
Hare Indian	712m	-650m	63m	Shale-silty dk. grey/green
Total Depth projected	775m	-713m		

Objective: Kee Scarp

Core 9m in Objective if porous

AEC (WEST) RENAISSANCE CARCAJOU O-47

WELL DATA SUMMARY

Company: AEC (West)

Well Name: AEC (West) Renaissance Carcajou O-47

Surface Location: 65°36'47.81216", 128°38'11.525672"

Surface Co-ordinates: Northing: 7276663.6, Easting: 516746.48

Elevations: *Ground:* 57.2 meters
Kelly Bushing: 61.5 meters
K.B. to Ground: 4.3 meters

Unique Well I.D.: 300O476540128300

Field: Exploratory

Classification: NPW

Objectives: *Primary* – Kee Scarp

Terminating Zone: Hare Indian

Security: Tight

AFE Number: 5000048

Licence Number: 1891

Spud Date: 1645 Hrs., March 20, 2000

Total Depth: 760.0 meters @ 0930 Hrs, March 24, 2000

AEC (WEST) RENAISSANCE CARCAJOU O-47

Sampled Interval: *AEC/Ren:* 135 to 760 meters (5 & 2.5 meter intervals)
Gov't: 135 to 760 meters (5 & 2.5 meter intervals)

Contractor: Akita Drilling # 14

Drilling Supervision: Allan Anger

Geological Supervision: Glen MacIntosh

Hole Size: *Surface:* 311.2 mm
Intermediate: 222 mm
Main: 156 mm

Surface Casing: *Size:* 244.5 mm
Type: 10 joints of 53.57 kg/m J-55
Landed @ 126.0 meters.
Cement: 8.0 Tonnes Arctic Set + additives
Plug down @ 1720 Hrs February 29, 2000

Intermediate Casing: *Size:* 177.8 mm
Type: 37 joints of 34.2 kg/m J-55
Landed @ 463.0 meters
Cement: 10.9 Tonnes RFC + additives
Plug down @ 2127 Hrs March 21, 2000

Production Casing: *Size:* 114.3 mm
Type: 64 joints 14.1 kg/m J-55 ST-C
Landed @ 760.0 meters
Cement: 9.3 Tonnes RFC + additives
Plug down @ 0800 Hrs March 25, 2000

Open Hole Logs: Schlumberger

<i>Log</i>	<i>Interval Logged</i>	<i>Scale</i>
CNL-LDT-DLL	755.0 to 461.4 meters	1:240 & 1:600
BHCS-GR	757.8 to 461.1 meters	1:240 & 1:600

Final Status: Casing ran / abandoned

Rig Release: 1300 Hrs, March 25, 2000

AEC (WEST) RENAISSANCE CARCAJOU O-47

DAILY PROGRESS SUMMARY

Date	Costs	Depth @ 2400 Hrs.	Progre ss (meters)	ROP	Formation	Operation	Operations Summary
3/20/00	\$209,246	308	182	28.0	Cretaceous	Drill	Move rig from D-7 location. Rig up. Nipple up. Pressure test. Make up BHA & run in hole. Pressure test. Drill out cement. Spud well @ 1645 Hrs. Drill ahead & survey.
3/21/00	\$545,488	465	157	14.0	Imperial	WOC	Drill ahead & survey to 654m. Circulate. Wiper trip. Drill to intermediate casing point of 465m. Circulate. Pull out of hole. Rig to & run 177.8mm casing. Circulate. Rig to & cement casing. Wait on cement.
3/22/00	\$592,451	566	101	6.8	Kee Scarp	Drill	WOC. Make up BHA & bit #2 & run in hole. Pressure test. Drill out cement. Drill ahead & survey.
3/23/00	\$617,303	712	146	6.5	Kee Scarp	Drill	Drill ahead & survey.
3/24/00	\$680,832	760	48	5.5	Hare Indian	Log	Drill ahead & survey to T.D. of 760m @ 0930 Hrs. Circulate. Wiper trip. Circulate. Pull out of hole to log. Lay down directional tools. Rig in & log with Schlumberger.
3/25/00	\$751,332	760	0		Hare Indian	Rig release	Log. Lay down drill string. Rig to & run 114.3mm casing. Circulate. Rig to & cement casing. Tear out rig. Release rig @ 1300 Hrs. Move to Norman Wells.

AEC (WEST) RENAISSANCE CARCAJOU O-47

MUD RECORD

Mud up @ 465 meters

Date	Depth (m)	Density (kg/m3)	Viscosity (s/l)	pH	Water Loss
3/22/00	566	1060	44	10.5	16.0
3/23/00	712	1100	46	9.0	12.0
3/24/00	760	1115	64	9.0	9.2
3/25/00	760	1115	64	9.0	9.2

AEC (WEST) RENAISSANCE CARCAJOU O-47

BIT RECORD

Bit No.	Type	Size (mm)	Depth Out(m)	Interval Cut(m)	Hrs	FOB (daN)	RPM	Cond'n			ROP (m/hr)	Comments
								T	B	G		
1	66I-PDC	222	465	340	17.8	2000	150	GOOD			19.2	Trip Int. Csng
2	XR20TP	156	760	295	46.0	13000	140	5	E	I	6.4	Trip T.D.

AEC (WEST) RENAISSANCE CARCAJOU O-47

OPEN HOLE LOG SUMMARY

RUN 1

Logging Company: Schlumberger Engineer: Sean McConkey
District: Norman Wells Truck No.: 8416
Circulation Ended: 1345 Hrs. 00/03/24 Finish Trip: 1630 Hrs. 00/03/24
On Location: 1600 Hrs. 00/03/24 Off Location: 0100 Hrs. 00/03/25
Rig Up: 1630 Hrs. 00/03/24 Rig Down: 0000 Hrs. 00/03/25
Mud Properties: Mud Type: Gel Chem BHT: 38.0°C
 Density: 1160 Rmf: 1.80 @ 17.0 °C
 Viscosity: 64
 WL: 7.0
 pH: 9.0

Services:

<u>Log</u>	<u>Interval Logged</u>	<u>Meters Logged</u>	<u>Comments</u>
CNL-LDT-DLL	755.0 to 461.4	293.6	1:240 & 1:600
BHCS-GR	757.8 to 461.4	296.4	1:240 & 1:600

Times:

<u>Tool Combo</u>	<u>Date</u>	<u>Start In</u>	<u>First on Bottom</u>	<u>Last on Bottom</u>	<u>Clear Hole</u>	<u>Total Hours</u>
CNL-LDT-DLL	00/03/24	1745	1900	1915	2000	2.25
BHCS-GR	00/03/24	2130	2215	2245	2315	1.75

Logging Time: 4.00 Hours Rig Up/Down: 3.50 Hours
Time Losses: 0 Hours Total Logging Time: 7.50 Hours

Remarks: Compensated Neutron logged to surface. Arrived on location from completions work on O-74. Good job. Fast, friendly & proficient service.

AEC (WEST) RENAISSANCE CARCAJOU O-47

DEVIATION RECORD

Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)	Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)
1	140	2.800		30	421	1.900	10
2	150	2.800	10	31	430	2.100	9
3	159	1.900	9	32	440	2.400	10
4	169	1.200	10	33	450	2.600	10
5	179	1.200	10	34	476	3.200	26
6	188	1.200	9	35	486	3.300	10
7	198	1.400	10	36	496	2.500	10
8	208	1.500	10	37	505	1.500	9
9	217	1.400	9	38	515	0.900	10
10	227	1.600	10	39	535	0.600	20
11	237	1.800	10	40	544	0.800	9
12	247	1.700	10	41	554	0.900	10
13	256	1.300	9	42	564	1.000	10
14	266	0.600	10	43	573	1.200	9
15	276	0.700	10	44	583	1.500	10
16	285	1.000	9	45	593	1.700	10
17	295	1.300	10	46	602	1.000	9
18	305	1.500	10	47	612	0.800	10
19	314	1.700	9	48	631	0.800	19
20	324	1.700	10	49	641	0.400	10
21	334	1.800	10	50	651	0.800	10
22	344	1.100	10	51	661	0.900	10
23	353	1.500	9	52	670	0.900	9
24	363	1.500	10	53	690	1.100	20
25	372	1.400	9	54	699	1.100	9
26	382	1.800	10	55	728	1.700	29
27	392	2.000	10	56	738	1.600	10
28	401	2.100	9	57	747	1.600	9
29	411	2.000	10	58	760	1.600	13

AEC (WEST) RENAISSANCE CARCAJOU O-47

GEOLOGICAL MARKERS

K.B. 61.5 meters

Formation	Prognosis		Samples		Logs	
	Depth (m)	Subsea (m)	MD (m)	Subsea (m)	MD (m)	Subsea (m)
<u>Cretaceous</u>	23.5	38.0	np	np	np	np
<u>Devonian</u>						
Imperial	242.5	-181.0	331.0	-269.5	331.0	-269.5
Canol	469.5	-408.0	467.0	-405.5	absent	absent
Kee Scarp	470.5	-409.0	469.0	-407.5	470.0	-408.5
Hare Indian	711.5	-650.0	730.0	-668.5	729.0	-667.5
Total Depth	774.5	-713.0	760.0	-698.5	759.6	-698.1

POST WELL ANALYSIS REPORT

AEC OIL & GAS CO. LTD.
POST WELL ANALYSIS REPORT FOR
AEC RENAISSANCE CARCAJOU
0-47-A/104-N-16

APPROVED BY BOARD
ENGINEERING BRANCH

525 - 3rd Avenue S.W.
Calgary, Alberta
Canada T2P 0G4
Bus (403) 509-4000
Bus (403) 509-4300

Schlumberger

40004654

AEC OIL & GAS CO. LTD.
POST WELL ANALYSIS REPORT FOR
AEC RENAISSANCE CARCAJOU
0-47-A/104-N-16

Job Identification

Alberta Energy Corp

Project ID: AEC Renaissance Carcajou 0-47

Pad ID: Single well

Well ID: AEC Renaissance Carcajou 0-47

Unique ID: 200/ 0-47-A/ 104-N-16/ 00

Operator: Alberta Energy Corp

Address: 3700, 707-8th AVE SW
Calgary, Alberta
T2P-1H5

Co Rep: Allan Anger

Contractor: Akita Drilling

Rig ID: Akita #14

Pusher: Mel Zerr

Service Co: Anadrill - Schlumberger

District: Calgary, Alberta

DD Eng(s): Eric Erickson

DD Eng(s):

MWD Eng(s): Barry Timmerman

MWD Eng(s):

Start Date: Monday March 20, 2000

Release Date: Sunday March 26, 2000

Total Days: 7

Well Specifications

Alberta Energy Corp

Well Name: AEC Renaissance Carcajou 0-47
Well Number: 200/ 0-47-A/ 104-N-16/ 06

Field Name: Carcajou
Area: Fort Good Hope

KB level (above sea): 62.00 m Magnetic Declination
Ground Level (above sea): 57.20 m 31.6
KB to Ground level : 4.80 m

Surface Location

N/S Coord:

E/W Coord:

Target Loc: Planned

(Ref: Kelly Bushing) Final Bottom Hole Loc:

N/-S Coord: vertical

N/-S Coord: 10.70m

E/-W Coord:

E/-W Coord: 4.47m

TVD:

TVD: 759.74m

Target Radius: vertical

Well Descriptions

Alberta Energy Corp

AEC Renaissance Carcajou 0-47
200/ 0-47-A/ 104-N-16/ G0

Project Description: Proposed

The well is to be drilled to a depth of 775m. With hole deviation problems in the area a mud motor and MWD was run in the hole to keep the hole straight. This hole is a tight location.

Project Description: Actual

Surface casing was set at a depth 125m before the rig moved on to location. A 6.75" mud motor was run to drill out the cement with a PDC bit and drilled ahead with an average ROP of 19m/hr

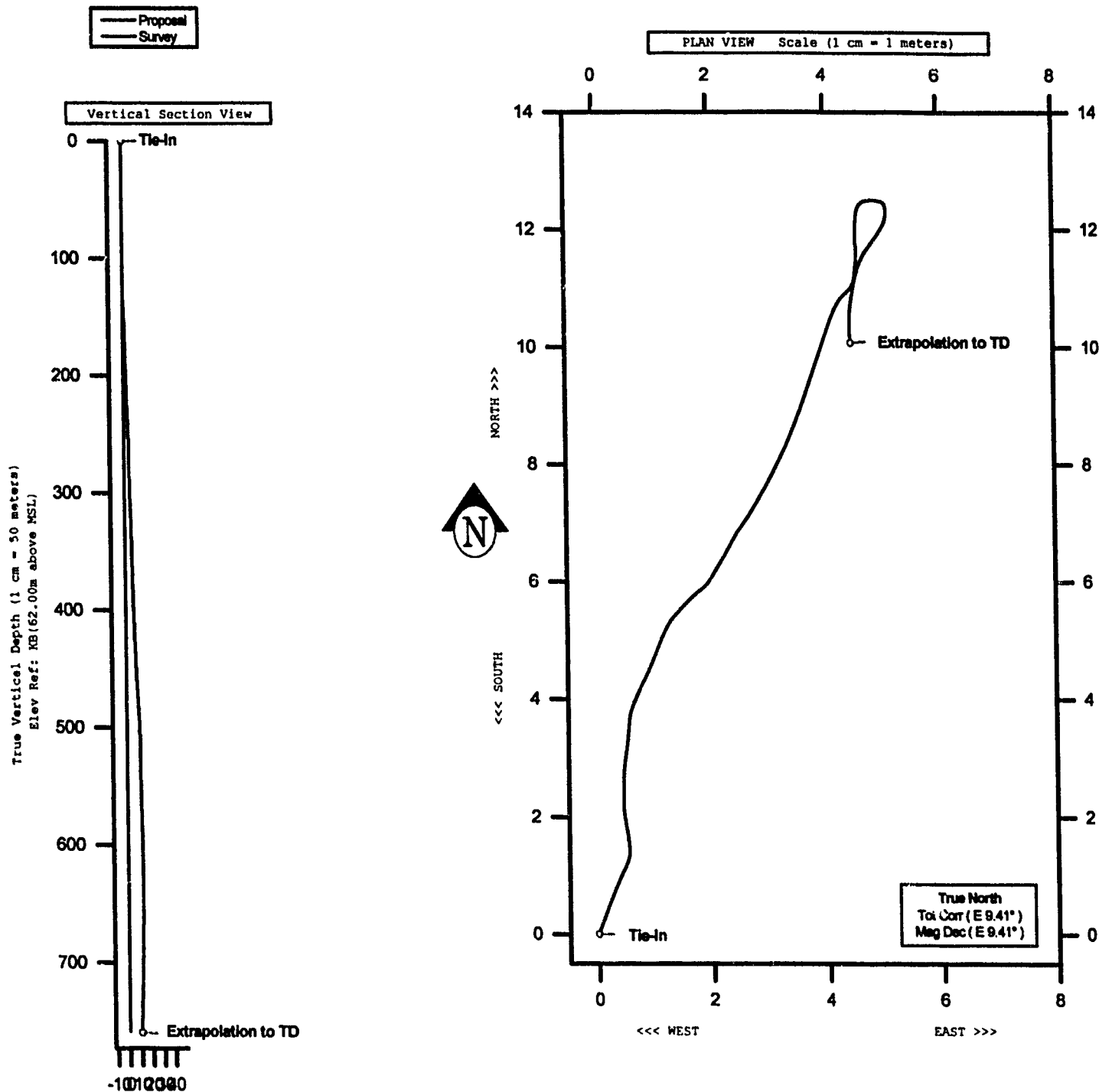
Only 3 to 4 decs were carried on the PDC bit. The bit came out of the hole in new shape. the ROP was very slow while sliding so it was decided to let the inclination get a little bit higher than planned and bring it back with small tools after intermediate casing was set. The casing was set at 3.3 degrees then pulled back to under 1 degree with only 12 meters of slideover three kellys. 19 meters of slide was required on the bottom section of the well. The bottom was drilled with a tricone bit which had some outer row buttons missing but was other wise in good shape.

The TD c' the well was called at 760m with 46 hours on the bit.

All the small subs were put in the silver basket , the basket, motors and monels will be shipped out in the summer time on a barge after the river opens up . The tools will be stored with the rig in Norman Wells, the MWD kit will be flown out on Saturday March 25 2000, to Calgary along with Anadrill personal

WELL	FIELD	STRUCTURE
AEC CARCAJOU 0-47-A/104-N-16	CARCAJOU (CDN)	AEC / 0-47-A/104-N-16
Magnetic Parameters Model: BGGM 1999 Dip: 8.818° Mag Dec: 9.413° Date: April 05, 2000 FS: 31247.6 nT	Surface Location Lat: N0 0 0.000 Lon: W121 29 19.478 North: 0.00 m East: 0.00 m Grid Conv: 0.0000° Scale Fact: 1.0027	Miscellaneous Slot: Slot #1 Elev Ref: KB(62.00m above MSL) Date Drawn: 01:28:04PM 11-May-2000

COMPLETION DRAWING



Final Survey

Client: Alberta Energy Company
 Field: CARCAJOU (CDN)
 Structure: AEC / 0-47-A/104-N-16
 Well: AEC CARCAJOU 0-47-A/104-N-16
 Borehole: Job# 40004654
 UWVAPI#:
 Date: May 11, 2000
 Grid Convergence: 0.00000000°
 Scale Factor: 1.00269630

 Location: N 0 0 0.000, W 121 29 19.478
 : N 0.000 m, E 0.000 m
 Coordinate System: NAD83 UTM Zone 11N

Survey Computation Method: Minimum Curvature
 DLS Computation Method: Lubinski
 Vertical Section Azimuth: 0.000°
 Vertical Section Origin: N 0.000 m, E 0.000 m
 TVD Reference: KB
 62.0 m above MSL
 Magnetic Declination: 9.413°
 Total Field Strength: 31247.580 nT
 Dip: 8.818°
 Declination Date: April 05, 2000
 Magnetic Declination Model: BGGM 1999
 North Reference: True North
 Coordinate Reference To: Well Head

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSec (m)	N-S (m)	E-W (m)	Closure (m)	at Azim (°)	DLS (°/30m)	TF (°)
Tie-In	0.00	0.00	0.0	0.00	0.00	0.00	0.00	0.00	0.0		0.0 M
	125.00	0.00	0.0	125.00	0.00	0.00	0.00	0.00	0.0	0.00	21.8 M
	139.80	2.80	21.8	139.79	0.34	0.34	0.13	0.36	21.8	5.68	23.9 M
	149.50	2.80	23.9	149.48	0.77	0.77	0.32	0.84	22.4	0.32	27.4 M
	159.10	1.90	27.4	159.07	1.13	1.13	0.49	1.23	23.3	2.85	-0.7 M
	168.90	1.20	359.3	168.87	1.37	1.37	0.56	1.48	22.2	3.10	-7.8 M
	178.60	1.20	352.2	178.57	1.58	1.58	0.54	1.67	19.1	0.46	-9.2 M
	188.30	1.20	350.8	188.27	1.78	1.78	0.51	1.85	16.2	0.09	-9.2 M
	198.00	1.40	350.8	197.96	2.00	2.00	0.48	2.05	13.5	0.62	1.4 M
	207.60	1.50	1.4	207.56	2.24	2.24	0.46	2.28	11.7	0.89	-0.7 M
	217.30	1.40	359.3	217.26	2.48	2.48	0.47	2.53	10.6	0.35	4.2 M
	227.00	1.60	4.2	226.95	2.74	2.74	0.47	2.78	9.8	0.73	9.1 M
	236.70	1.80	9.1	236.65	3.02	3.02	0.51	3.06	9.5	0.76	6.3 M
	246.50	1.70	6.3	246.45	3.32	3.32	0.55	3.36	9.4	0.40	4.2 M
	256.10	1.30	4.2	256.04	3.57	3.57	0.57	3.61	9.1	1.26	16.1 M
	265.80	0.60	16.1	265.74	3.73	3.73	0.59	3.77	9.1	2.24	18.9 M
	275.50	0.70	18.9	275.44	3.83	3.83	0.63	3.88	9.3	0.32	24.6 M
	285.20	1.00	24.6	285.14	3.96	3.96	0.68	4.02	9.8	0.96	26.0 M
	294.80	1.30	26.0	294.74	4.14	4.14	0.76	4.21	10.5	0.94	25.3 M
	304.50	1.50	25.3	304.43	4.35	4.35	0.87	4.44	11.3	0.62	22.8 M
	314.20	1.70	22.8	314.13	4.60	4.60	0.98	4.70	12.0	0.66	21.8 M
	323.90	1.70	21.8	323.83	4.87	4.87	1.09	4.99	12.6	0.09	26.7 M
	333.60	1.80	26.7	333.52	5.14	5.14	1.21	5.28	13.2	0.56	37.9 M
	343.30	1.10	37.9	343.22	5.34	5.34	1.33	5.51	14.0	2.33	44.3 M
	353.00	1.50	44.3	352.92	5.51	5.51	1.48	5.70	15.0	1.31	45.0 M
	362.60	1.50	45.0	362.51	5.69	5.69	1.66	5.92	16.2	0.06	53.4 M
	372.30	1.40	53.4	372.21	5.85	5.85	1.84	6.13	17.5	0.73	32.3 M
	382.00	1.80	32.3	381.91	6.05	6.05	2.02	6.38	18.5	2.18	30.2 M

Station ID	MD (m)	Incl (°)	Azim (°)	TVD (m)	VSac (m)	N-S (m)	E-W (m)	Closure (m)	at Azim (°)	DLS (%/30m)	TF (°)
	391.60	2.00	30.2	391.50	6.32	6.32	2.18	6.69	19.1	0.66	28.8 M
	401.30	2.10	28.8	401.19	6.62	6.62	2.35	7.03	19.6	0.35	35.1 M
	411.00	2.00	35.1	410.89	6.92	6.92	2.54	7.37	20.1	0.76	30.9 M
	420.70	1.90	30.9	420.58	7.19	7.19	2.72	7.69	20.7	0.54	28.8 M
	430.30	2.10	28.8	430.18	7.48	7.48	2.88	8.02	21.1	0.67	26.8 M
	440.10	2.40	26.8	439.97	7.82	7.82	3.06	8.40	21.4	0.95	26.0 M
	449.70	2.60	26.0	449.56	8.20	8.20	3.25	8.82	21.6	0.63	24.6 M
	451.00	2.50	24.6	450.86	8.25	8.25	3.27	8.88	21.6	2.72	18.9 M
	476.30	3.20	18.9	476.13	9.42	9.42	3.73	10.13	21.6	0.89	19.6 M
	486.00	3.30	19.6	485.81	9.94	9.94	3.91	10.60	21.5	0.33	21.1 M
	495.70	2.50	21.1	495.50	10.40	10.40	4.08	11.17	21.4	2.49	31.6 M
	505.40	1.50	31.6	505.19	10.71	10.71	4.22	11.51	21.5	3.28	50.6 M
	515.10	0.90	50.6	514.89	10.86	10.86	4.35	11.70	21.8	2.20	28.8 M
	534.60	0.60	28.8	534.39	11.05	11.05	4.52	11.94	22.2	0.63	5.6 M
	544.20	0.80	5.6	543.99	11.16	11.16	4.55	12.05	22.2	1.07	6.3 M
	554.00	0.90	6.3	553.79	11.30	11.30	4.56	12.19	22.0	0.31	5.6 M
	563.60	1.00	5.6	563.39	11.46	11.46	4.58	12.34	21.8	0.31	-4.3 M
	573.30	1.20	355.7	573.08	11.65	11.65	4.58	12.52	21.5	0.85	-0.7 M
	583.00	1.50	359.3	582.78	11.88	11.88	4.57	12.73	21.1	0.96	3.5 M
	592.70	1.70	3.5	592.48	12.15	12.15	4.58	12.98	20.7	0.72	28.8 M
	602.40	1.00	28.8	602.18	12.36	12.36	4.63	13.20	20.5	2.79	74.5 M
	612.10	0.80	74.5	611.87	12.46	12.46	4.73	13.33	20.8	2.24	105.4 M
	631.40	0.80	105.4	631.17	12.46	12.46	4.99	13.42	21.8	0.66	140.6 M
	641.10	0.40	140.6	640.87	12.41	12.41	5.08	13.41	22.3	1.63	172.2 M
	650.80	0.80	172.2	650.57	12.32	12.32	5.11	13.34	22.5	1.56	-168.1 M
	660.50	0.90	191.9	660.27	12.18	12.18	5.10	13.20	22.7	0.95	-149.8 M
	670.10	0.90	210.2	669.87	12.04	12.04	5.05	13.06	22.8	0.89	-142.1 M
	689.50	1.10	217.9	689.27	11.76	11.76	4.86	12.73	22.5	0.37	-144.9 M
	699.10	1.10	215.1	698.86	11.61	11.61	4.75	12.55	22.3	0.17	-170.2 M
	728.10	1.70	189.8	727.86	10.96	10.96	4.52	11.86	22.4	0.88	-170.9 M
	737.80	1.60	189.1	737.55	10.69	10.69	4.47	11.58	22.7	0.32	-179.8 M
	747.00	1.60	180.2	746.75	10.43	10.43	4.45	11.34	23.1	0.81	175.0 M
Extrapolation to TD	760.00	1.60	175.0	759.74	10.07	10.07	4.47	11.01	23.9	0.33	--

Survey Program:

Measured Depth

0.00
760.00

Tool (Wolff & deWardt Error Model)

None
None

Schlumberger

Alberta Energy Corp

JSO#	40004654	Hole Size: 222 mm	Depth in: 125 m	Depth out: 465 m	Mtr. Drig: 340 m	BHA # 1
Well	AEC Renaissance Carcajou 0	Last cas. @ 125.0m	Date In Mar 20 00	Date Out Mar 21 00	Days 2.0	SPP Off 4100.0 MPa
LSD	200/ 0-47-A/ 104-N-16/ 00	Bit to Svy. 14.0 m	PDM Run # 1	Drig hrs 17.75 hrs	Circ. Hrs 3.8 hrs	SPP On 6500.0 MPa
Pad ID	Single well	React. Torq. 60	Mot. Vend. Vector	Avg. ROP 18.15 m/hr	Tot. D&C 21.5 hrs	Differential 2400.0 MPa
Field	Carcajou	Rot. Torq 300	R/S conf. 7:8 3.0	verse ROP 3.1 min/m	Pump # 1	Pump #
Prov.	N W T	Inc. In 0.3 deg	ABH Set 1.5	Slide Dist. 23.0 m	Pump Man. Emaco	Pump Man.
Rig	Akita #14	Azm. In 21.8 deg	Motor RPM 100	Rotate Dist. 317.0 m	Pump Type F-500	Pump Type
Co. Rep	Allan Anger	Inc. Out 2.5 deg	Rot. RPM 50	Slide Hrs. 1.20 hrs	Tri /Dup Triplex	Tri /Dup
Rig Man	Mel Zerr	Azm. Out 24.6 deg	Avg. WOB 3/4	Rot. Hrs. 16.55 hrs	Stroke 191 mm	Stroke
DD	Eric Erickson	MWD Barry Timmerm	BHA Wt. 6 maN	Slide ROP 19.17 m/hr	Liner 152 mm	Liner
DD		MWD	String Wt 22 maN	Rot. ROP 20.54 m/hr	Stks / min 120	Stks / min
DD		MWD	P/U Wt. 22 maN	Steering 8.8%	Vol(etrk) .0104cu. m	Vol(etrk)
DD		MWD	S/O Wt. 22 maN	Rotate 93.2%	Volume 1.25 m3	Volume

Mud	Floc	Mud Vis	23 sec/L	Sand		Chlorides		YP		PH	9.0
Mud Wt	1000 kg/cu. m	WL		Solid cont		Oil/Water		PV		MWD BHT	28.3 deg./C

Item	#	Description	Vendor	Serial #	Max OD	OD	ID	B. Conn	T. Conn	Length	Cum Len
1	1	SS66L 4x11.1 1x12.7	BR	1962520A		222			4.5Reg	0.25	0.25
2	1	6.75 Motor 7:8 3.0 @1.50	Vector	3109-67196	193	171		4.5Reg	4.5H90	7.06	7.31
3	1	Float Sub	Anadrill	1318580		165	75	4.5H90	4.5H90	0.77	8.08
4	1	UBHO Sub	Anadrill	1416562		161	72	4.5H90	4.5H90	0.63	8.71
5	1	NMDC	Anadrill	1916539		170	72	4.5H90	4.5H90	9.21	17.92
6	1	X/Over	Anadrill	1216576		171	69	4.5H90	4.5XH	0.82	18.54
7	7	DC,S	Akita			171	70	4.5XH	4.5XH	64.83	83.37
8	1	X/Over	Akita			170	69	4.5XH	4.FH	0.92	84.29
9		Drill Pipe to Surface	Akita			102		4FH	4FH		
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

Bit condition

Exp.:

Cutting structure B G Remarks

Act.:

IADC Inner Outer MDC LOC BRG GAUG OOC REASON
code rows rows 1/15 PULLED
PDC

Com.:

Make-up Torque ALL TORQUE'S ARE FOR STEEL, USE 80% FOR MONEL'S; (Divide all torque values by length of tool arm)

	Drill Collars	Hevi-Wate drill pipe	Motor Nut - Anadrill's Motors
4.5 H90	23000 ft lb / 31200 N-m	2.9 AOH 3500 ft lb / 4700 N-m	2.39 690 ft lb / 1200 N-m
4 IF/4.5XH/NC48	22200 ft lb / 30100 N-m	2.9 H90 4800 ft lb / 6200 N-m	2.87 1650 ft lb / 2200 N-m
4.5 FH	19600 ft lb / 26800 N-m	3.5 IF / NC38 9900 ft lb / 13400 N-m	3.38 3600 ft lb / 4900 N-m
3.5 IF / NC38	9900 ft lb / 13400 N-m	4 FH / NC40 13250 ft lb / 18000 N-m	4.75 10000 ft lb / 13600 N-m
2.9 AOH	3500 ft lb / 4700 N-m	4 IF / 4.5 XH / NC48 21800 ft lb / 29600 N-m	6.25 20000 ft lb / 27100 N-m
2.9 H90	4800 ft lb / 6200 N-m	4.5 IF / 5 XH / NC56 29400 ft lb / 39900 N-m	6.75 25000 ft lb / 33900 N-m
PH6	5500 ft lb / 7500 N-m	5.5 FH 33200 ft lb / 45000 N-m	8 35000 ft lb / 47500 N-m
VO65	3750 ft lb / 5100 N-m	6.635 FH 46900 ft lb / 63600 N-m	8.600 ft lb / 11300 N-m

Schlumberger

Alberta Energy Corp

JSO#	40004854	Hole Size: 150 mm	Depth in: 403 m	Depth out: 700 m	Mtr. Drig: 297 m	BHA # 2					
Well	AEC Renaissance Carcajou C	Last cas. @	483.0m	Date In	Mar 22 00	Date Out	Mar 24 00	Days	3.0	SPP Off	8200.0 MPa
LSD	200/ 0-47-A/ 104-N-18/ 00	Bit to Svy.	13.0 m	PDM Run #	2	Drig hrs	48. hrs	Circ. Hrs	4.0 hrs	SPP On	10000.0 MPa
Pad ID	Single well	React. Torq.	45	Mot. Vend.	Anadrill	Avg. ROP	6.48 hrs	Tot. D&C	50.0 hrs	Differential	1800.0 MPa
Field	Carcajou	Rot. Torq	200	R/S conf.	7.8 2.2	Average ROP	2.29 m/hr	Pump #	1	Pump #	
Prov.	N W T	Inc. In	2.5 deg	ABH Set	1.15	Slide Dist.	19.0 m	Pump Man.	Emeco	Pump Man.	
Rig	Akita #14	Azm. In	24.6 deg	Motor RPM	140	Rotate Dist.	278	Pump Type	F-500	Pump Type	
Co. Rep	Allen Anger	Inc. Out	1.8 deg	Rot. RPM	20	Slide Hrs.	2.48 hrs	Tri /Dup	Triplex	Tri /Dup	
Rig Man	Mel Zerr	Azm. Out	180.2 deg	Avg. WOB	8/10	Rot. Hrs.	43.52 hrs	Stroke	191 mm	Stroke	
DD	Eric Erickson	MWD	Barry Timmerm	BHA Wt.	11 maN	Slide ROP	7.68 m/hr	Liner	152 mm	Liner	
DD		MWD		String Wt	28 maN	Rot. ROP	6.39 m/hr	Strks / min	80	Strks / min	
DD		MWD		P/U Wt.	28 maN	Steering	8.4%	Vol(strk)	.0104cu. m	Vol(strk)	
DD		MWD		S/O Wt.	28 maN	Rotate	93.6%	Volume	0.94 m3	Volume	

Mud Gel		Mud Vis	45 sec/L	Sand		Chlorides		YP		PH	9.5
Mud Wt	1100 kg/cu. m	WL	9.0 cc's	Solid cont		Oil/Water		PV		MWD BHT	37.7 deg./C

Item	#	Description	Vendor	Serial #	Max OD	OD	ID	B. Conn	T. Conn	Length	Cum Len
1	1	XR20TP Open	Smith	LX2708		158			3.5 Reg	0.25	0.25
2	1	4.75 Motor 7.8, 2.2@1.15	Anadrill	475 14 1025	135	121		3.5 Reg	3.5 IF	5.51	5.76
3	1	Float Sub	Anadrill	1312104		119	0.53	3.5 IF	3.5 IF	0.88	6.64
4	1	UBHO Sub	Anadrill	1412193		120	0.59	3.5 IF	3.5 IF	0.88	7.30
5	1	NMDC	Anadrill	2112111		120	0.58	3.5 IF	3.5 IF	9.47	16.77
6	1	NMDC	Anadrill	48300035		121	0.58	3.5 IF	3.5 IF	9.48	26.25
7	20	DC's	Akita			121	0.58	3.5 IF	3.5 IF	189.74	215.99
8	1	X/Over	Akita			121	0.58	3.5 IF	4 FH	0.47	216.46
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											

BIT condition

Exp.:	Cutting structure	B	G	Remarks
Act.:	IADC Inner Outer MDC LOC BRG GAUG ODC REASON			
Com.:	code rows rows		1/16	PULLED

Make-up Torque ALL TORQUE'S ARE FOR STEEL, USE 80% FOR MONEL'S; (Divide all torque values by length of long arm)

	Drill Collars	Hevi-Wate drill pipe	Motor Nut - Anadrill's Motors
4.5 H90	23000 ft lb / 31200 N-m	2.9 AOH 3500 ft lb / 4700 N-m	2.38 890 ft lb / 1200 N-m
4 IF/4.5XH/NC48	22200 ft lb / 30100 N-m	2.9 H90 4800 ft lb / 6200 N-m	2.87 1650 ft lb / 2200 N-m
4.5 FH	19800 ft lb / 26800 N-m	3.5 IF / NC38 9900 ft lb / 13400 N-m	3.38 3600 ft lb / 4900 N-m
3.5 IF / NC38	9900 ft lb / 13400 N-m	4 FH / NC40 13250 ft lb / 18000 N-m	4.75 10000 ft lb / 13600 N-m
2.9 AOH	3500 ft lb / 4700 N-m	4 IF / 4.5 XH / NC48 21800 ft lb / 29600 N-m	6.25 20000 ft lb / 27100 N-m
2.9 H90	4800 ft lb / 6200 N-m	4.5 IF / 5 XH / NC50 29400 ft lb / 39900 N-m	6.75 25000 ft lb / 33900 N-m
PH8	5500 ft lb / 7500 N-m	6.5 FH 33200 ft lb / 45000 N-m	8 35000 ft lb / 47500 N-m
VO65	3750 ft lb / 5100 N-m	6.635 FH 46900 ft lb / 63600 N-m	9.62 3 ft lb / 81300 N-m

Schlumberger

WELL NUMBER 4004654	DATE TUE MARCH 21, 2000	COMPANY Alberta Energy Corp	WELL NAME AEC Renaissance Carajou 0-47
COMPANY REPRESENTATIVE Allan Angar	RIG NAME Akita #14	LOCATION 200/0-47-A/104-N-16/00	

BIT NUMBER	1	TIME FROM	TO	DESCRIPTION	LIST SUPPLIER (if not Anadri)	COST
BIT SIZE	222.0	0:25	0:15	Rig Service	SUPERVISION 1 @ 700.00	\$ 700.00
BIT TYPE	PDC	0:25	0:15	BOP Drill	FLAT RATE 7.11	
JETS (mm)	125	7:25	0:30	Directional Drill 309 m to 415 m	MOTOR HRS 13.00 @ 200.00	\$ 2,600.00
DEPTH IN	125 m	0:25	7:45	Accumulated Surveys	MOTOR DAILY	
DEPTH @ MIDDNIGHT	465 m	0:25	8:00	Rig Service	MOTOR STRY	
METERS	340 m	3:25	8:15	Directional Drill 415 m to 454 m	JACKS	
HOURS	17.75	0:75	11:30	Circulate	S. SHOT KIT 125.00	
ROP (m/hr)	19.2	1:50	12:15	Wiper Trip	URHO SUB 1 25.00	\$ 25.00
RPM	50/100	0:75	13:45	Directional Drill 454 m to 465 m	MONEL 1 125.00	\$ 125.00
WOB	3/4	0:25	14:30	Accumulated Surveys		
PP ON	8500	0:50	14:45	Circulate	STAB LIZERS	
PP OFF	4100	1:25	18:15	POOH	TR REAMER	
STG WT	22	1:00	18:30	Lay out Directional Tools	MWD SURV. 1 @ 500.00	\$ 500.00
PU WT	22	2:25	17:30	Run Casing	MWD SYSTEMS 1 2800.00	\$ 2,800.00
BO WT	22	0:75	19:45	Circulate	GAMMA RAY	
PUMP DATA		1:00	20:30	Cement Casing	GAMMA RAY (STORY)	
PUMP MAN.	Emaco	2:50	21:30	WOC	CMPTR & WELL FILE 350.00	
PUMP MOD.	F-500				MWD STANDBY 1000.00	
Triplex/Duplex	Triplex					
LINER	152mm					
STROKE	191mm					
CU. M/STK	0.0104					
STRS/MIN.	1.20					
VOLUME	1.25					
MUD REPORT						
MUD TYPE (Gd/L)	Fluc					
MUD WEIGHT	1000					
VISCOSITY (sec/L)	28					
WATER LOSS						
PH	9					
SAND						
TEMPERATURE (°C)	24.89	TOTAL				

TOXIN/INJE RECORDS															
RUN	MAKE	SER. NO.	Daily			Run			Well			Total			FAILURE? (Yes/No)
			Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	
1	Vector	3109-67103-10	11.25	1.75	13.00	17.75	3.75	21.50	17.75	3.75	21.50	17.75	3.75	109.75	N

ITEM	VENDOR	SERIAL#	LENGTH	ITEM	VENDOR	SERIAL#	LENGTH	RUN	MAKE	SER. #	Drill	Circ	D+C	FAILURE?
Bit	BR	128520A	0.25											
Motor	Vector	3109-10	7.06											
Float	Any drill	1310580	0.77											
SAHU	Any drill	1418682	0.85											
Monel	Anadri	1818539	0.21											
X/Over	Anadri	DKR-480	0.82											
13DC's	Akita		130.50											
X/Over	Akita		0.82											

RUN	COMP.	HRS	Drill	Circ	D+C	FAILURE?
1	BMA-PUM	17.00	28.00			
1	SEA-5159	17.00	28.00			
1	SEA-5159	17.00	28.00			

TOTAL LENGTH	129.94	TOTAL LENGTH		TARGET TVD @ TIME	
DD: Eric Erickson	MWD: Barry Tyntelman	AFE NUMBER	890144-9210-328	CONTRACT NUMBER	
DD:	MWD:	FIELD CELL #		C.O. MAN'S CELL #	
DD:	MWD:	SIGNATURE OF COMPANY'S REPRESENTATIVE			
DD:	MWD:				

750
27240

30

650
308V785
13775

The jets in the POC bit are 4x11.1 1x12.7

WELL NUMBER		DATE		COMPANY		WELL NAME	
40004654		WED MARCH 22, 2000		Alberta Energy Corp		AEC Renaissance Carcalou 0-47	
COMPANY REPRESENTATIVE		WELL NAME		LOCATION			
Allan Anger		Akita #14		200/0-47-A/104-N-18/00			

WELL NUMBER	DATE	TIME	FROM	TO	DESCRIPTION	EST SUPPLIER (Not Anadriil)	COST
WIT 102	158.0	3.50	3.30	3.30	WOC	SUPERVISION 1 @ 700.00	\$ 700.00
WIT TYPE	XP20TP	2.25	3.30	6.45	Make up BHA & RIH	FLAT RATE 212	
WITS RUN	Open	0.75	6.45	6.30	Pressure Test	MOTOR HRS 15.75 @ 200.00	\$ 3,150.00
DEPTH IN	465 m	1.50	6.30	6.00	Drill out Shoe	MOTOR DAILY	
MIDPOINT DEPTH	500 m	0.25	6.00	6.15	BOP Drill	MOTOR STBY	
METERS	101 m	7.50	6.15	15.45	Directional Drill 465 m to 513 m	JARS	
HOURS	14.75	0.25	15.45	16.00	Accumulated Surveys	S. SHOT RT 125.00	
ROP (m/hr)	6.9	0.25	16.00	16.15	Rig Service	UBHO SUP 1 25.00	\$ 25.00
RPM	20/140	3.50	16.15	18.45	Directional Drill 513 m to 537 m	MONEL 2 125.00	\$ 250.00
WOB	8/10	0.25	18.45	20.00	BOP Drill		
PP ON	6500	3.75	20.00	23.45	Directional Drill 537 m to 646 m	STABILIZERS	
PP OFF	6500	0.25	23.45	0.00	Accumulated Surveys	TO REAMER	
STG WT	24					MWD SUPER 1 @ 600.00	\$ 600.00
PAU WT	24					MWD SYSTEMS 1 2000.00	\$ 2,000.00
S/O WT	24					GAMMA RAY	
						GAMMA RAY (RTDWT)	
						CHPTN & WELL FILE 350.00	
						MWD STANDBY 1000.00	
PUMP MAN	Emaco						
PUMP MOD.	F-500						
Triplex/Duplex	Triplex						
LINE	152mm						
STROKE	191mm						
CU. M/STK	0.0104						
STKS/MIN.	60						
VOLUME	0.94						
						SUBSISTENCE (Camp?)	
						No camp 75.00	
						VEH. LIC. #	
						KM TODAY	0.75 \$
						KM ACCUM.	
						DAILY TOTAL	\$ 7,725.00
						ACCUMULATED	\$ 20,675.00

RUN	MAKE	SER. NO.	Daily			Run			Well			Total			FAILURE?
			Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	
1	Anadriil	475-14-1028	14.75	1.75	16.50	14.74	1.75	16.50	14.75	1.75	16.50	14.75	1.75	16.50	N

ITEM	VENOR	SERIAL#	LENGTH	ITEM	VENOR	SERIAL#	LENGTH	MOVABLE JARS				FAILURE?
								RUN	MAKE	SER. #	QTY	
Bit	Smith	LX2708	0.25									
Motor	Anadriil	475-14-1028	5.61									
Piston	Anadriil	1312104	0.89									
UBHO	Anadriil	1412193	0.66									
Monel	Anadriil	2112111	9.47									
Monel	Anadriil	463000039	9.48									
22X's	AKA		109.74									
X/Ovr	AKA		0.47									

TOTAL LENGTH		TOTAL LENGTH		TARGET TVD @ TIME	
218.48		218.48		218.48	

DO:	MWD:	APP NUMBER	CONTRACT NUMBER
Eric Erickson	Barry Titterman	55002210-000	
DO:	MWD:	FIELD CELL #	CD. MAN'S CELL #
DO:	MWD:	SIGNATURE OF COMPANY REPRESENTATIVE	
DO:	MWD:	Allan Anger	

750

2517.50

30

550

4000

8072.50

21472.40

JOB NUMBER 40004884		DATE FRI MARCH 24, 2000	COMPANY Alberta Energy Corp	WELL NAME AEC Renaissance Ceresjou 0-47
COMPANY REPRESENTATIVE Allan Anger		WIG NAME Akita #14	LOCATION 200/ 0-47-AJ 104-N-16/ 00	

BIT NUMBER	2	TIME	FROM	TO	DESCRIPTION	LIST SUPPLIER (if not Anadri)	COST
BIT SIZE	198.0	2:00	2:00	2:00	Directional Drill 712 m to 721 m	SUPERVISION 1 @ 700.00	\$ 200.00
BIT TYPE	XR20TP	0:25	2:00	2:15	Rig Service	FLAT RATE	210
JETS (mm)	Open	5:50	2:15	7:45	Directional Drill 721 m to 750 m	MOTOR HRS 10.25 @ 200.00	\$ 2050.00
DEPTH (m)	485 m	0:25	7:45	8:00	Accumulated Surveys	MOTOR DAILY	
MIDNIGHT DEPTH	760 m	0:25	8:00	8:15	Rig Service	MOTOR STBY	
HITERS	295 m	1:25	8:15	9:30	Directional Drill 750 m to 760 m	JARS	
HOURS	46.00	0:25	9:30	9:45	Accumulated Surveys	S. SHOT KIT 125.00	
ROP (m/hr)	6.4	1:00	9:45	10:45	Circulation	UBHO SUB 1 25.00	\$ 25.00
APM	20/140	2:50	10:45	13:15	POOH to Log	MONEL 2 125.00	\$ 250.00
WOB	8/10	1:00	13:15	14:15	Lay out Directional Tools	STABILIZERS	
PP ON	10000				Log	TR REAMER	
PP OFF	8200					MWD SUPER. 1 @ 500.00	\$ 500.00
STG WT	28					MWD SYSTEMS 1 2900.00	\$ 2900.00
PLU WT	28					GAMMA RAY	
SJO WT	28					GAMMA RAY (STDBY)	
SUPP DATA							
PUMP MAN.	Emeco					CNTR & WELL FILE 350.00	
PUMP MOD.	F-500					MWD STANDBY 1000.00	
Triplex/Duplex	Triplex						
LINER	152mm						
STROKE	191mm						
CU. M/STK	0.0104						
STK/MIN.	90						
VOLUME	0.94						
MUD REPORT							
MUD TYPE (Select)	Oil						
MUD WEIGHT	1150						
VISCOSITY (sec/L)	48						
WATER LOSS	11.5						
PH	9.5						
SAND							
TEMPERATURE (C)	37.7	14:35	TOTAL				

DOWNHOLE MOTORS															
RUN	MAKE	SER. NO.	Daily			Run			Well			Total			FAILURE?
			Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	Drill	Circ	D+C	(Yes/No)
1	Anadri	475-14-1028	8.75	1.50	10.25	46.00	4.00	50.00	46.00	4.00	50.00	46.00	4.00	132.50	N

UPHOLE LOGS				DOWNHOLE LOGS										
ITEM	VENDOR	SERIALS	LENGTH	ITEM	VENDOR	SERIALS	LENGTH	RUN	MAKE	SER.#	Drill	CNC	D+C	FAILURE?
BR	Smith	LX2708	0.25											
Motor	Anadri	475-14-1028	5.51											
Floot	Anadri	1312104	0.68											
UBHO	Anadri	1412193	0.66											
Monel	Anadri	2112111	8.47											
Monel	Anadri	463000036	9.48											
20DC's	Akita		189.74											
X/Over	Akita		0.47											

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DD: Eric Erickson	MWD: Barry Timmerman	AFE NUMBER 8000048-0210-320	CONTRACT NUMBER
DD:	MWD:	FIELD CELL #	CO. MAN'S CELL #
DD:	MWD:	SIGNATURE OF COMPANY'S REPRESENTATIVE	
DD:	MWD:	Allan Anger	

750
2152.50

710

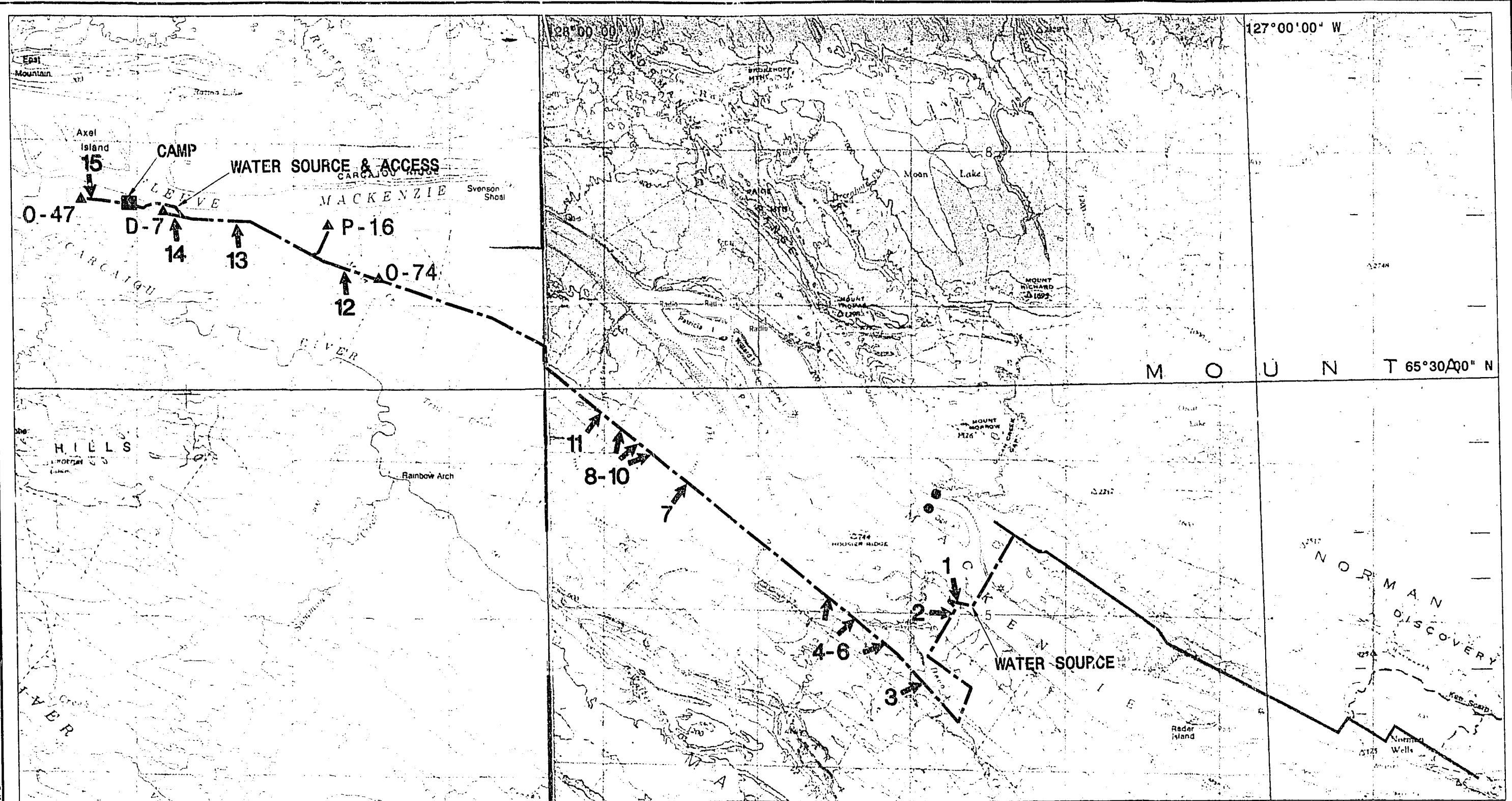
650
70506277.00
38067.50

[illegible]

PROPOSED SITE MAP

J:\1999\2200\992-2233\addendum\carcajou.dwg

J:\1999\2200\992-2233\fp-nov2\Bdell.jpg



LEGEND:

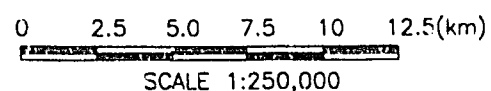
- ▲ PROPOSED WELL LOCATIONS
- KNOWN HERITAGE SITE
- TEMPORARY ACCESS
- EXISTING WINTER ROAD
- ⇒ SURVEYED/OBSERVED STREAM CROSSINGS

NOTES:

CO-ORDINATES, LATITUDES AND LONGITUDES ARE IN NAD '27 DATUM.

REFERENCE

DRAWING PROVIDED BY SESL GEOMATICS
JOB NO.: 99N012; FIGURE 2 99-11-01



PROPOSED AEC (WEST) CARCAJOU EXPLORATORY DRILLING PROGRAM

DRAWN: RFM	APPROVED:	DATE: 18 NOV. 1999
PROJECT: 992-2233	FIGURE: 2	

SURVEY PLAN

OVERSIZED

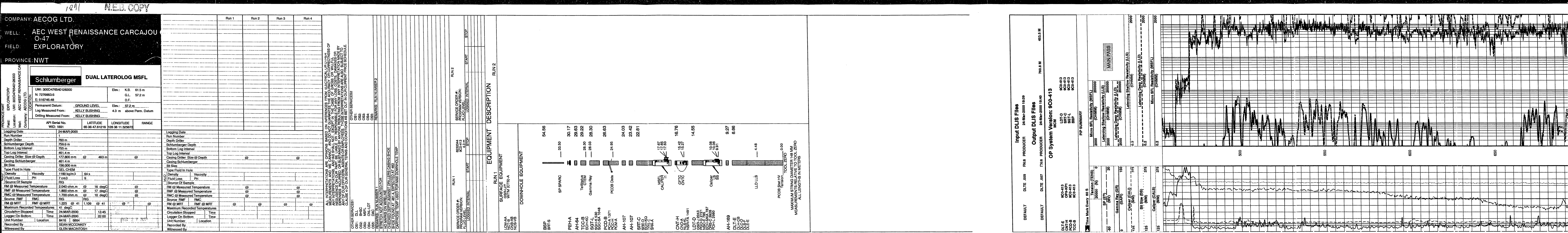
DOCUMENT

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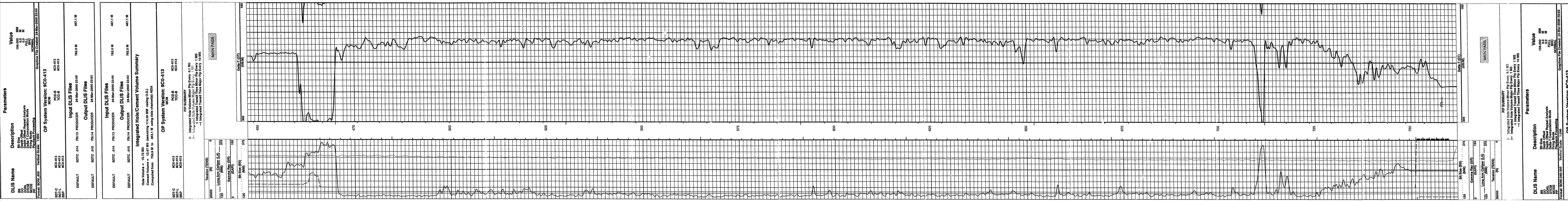
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35mm

**RESISTIVITY/
CONDUCTIVITY**



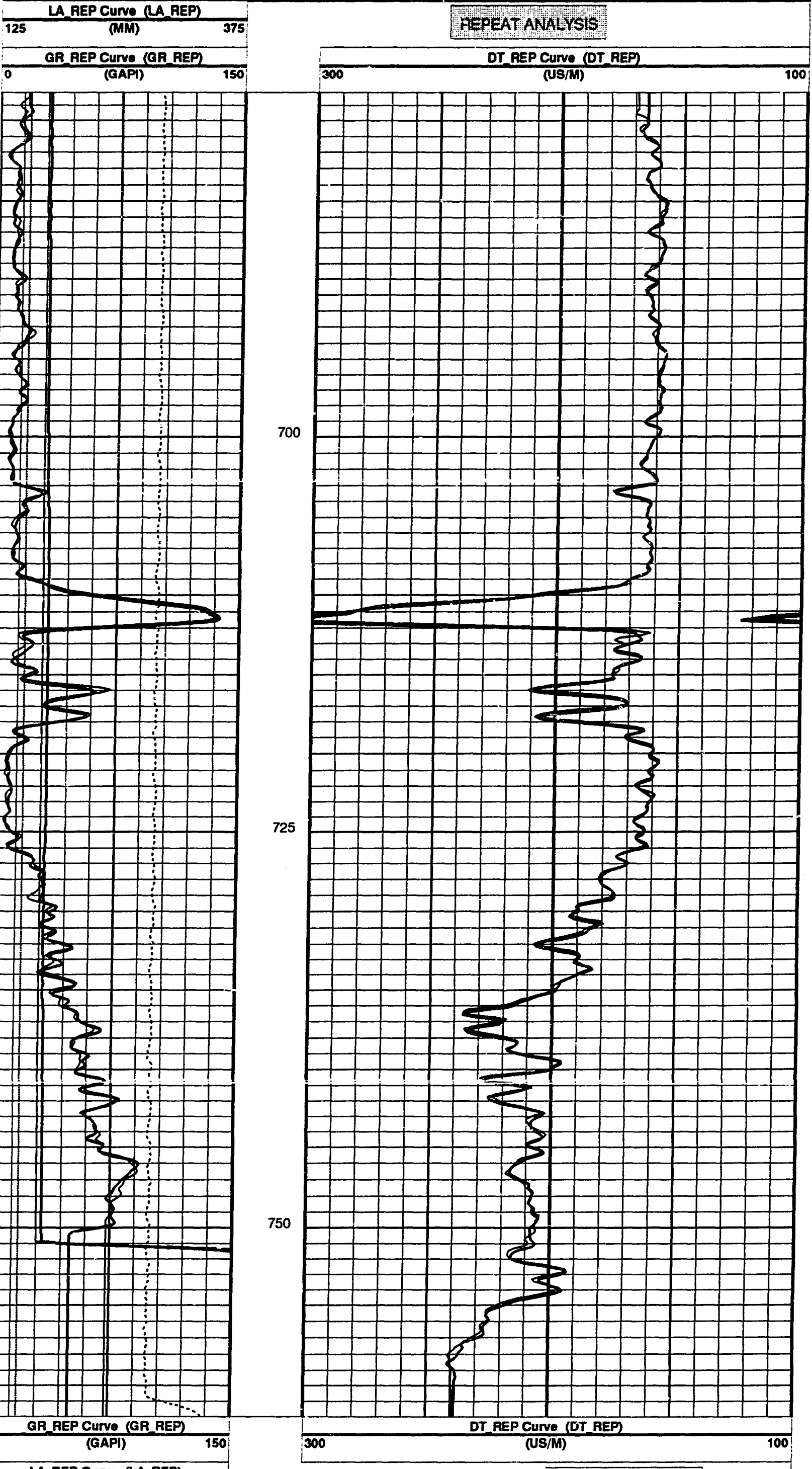
SONIC



MCM					
SDT-C	9C0-413	PCD-B	9C0-413		
SGT-L	9C0-413	TCC-B	9C0-413		
BSP	9C0-413				
Input DLIS Files					
DEFAULT	SDTC .014	FN:13 PRODUCER	24-Mar-2000 23:00	762.0 M	447.1 M
Output DLIS Files					
DEFAULT	SDTC .015	FN:14 PRODUCER	24-Mar-2000 23:03		

Input DLIS Files					
DEFAULT	SDTC .014	FN:13 PRODUCER	24-Mar-2000 23:00	762.0 M	447.1 M
DEFAULT	SDTC .013	FN:12 PRODUCER	24-Mar-2000 22:59	762.6 M	678.8 M
Output DLIS Files					
DEFAULT	SDTC .015	FN:14 PRODUCER	24-Mar-2000 23:03	762.0 M	447.1 M

OP System Version: 9C0-413					
MCM					
SDT-C	9C0-413	PCD-B	9C0-413		
SGT-L	9C0-413	TCC-B	9C0-413		
BSP	9C0-413				



Parameters		
DLIS Name	Description	Value
BS	Bit Size	156.000 MM
DO	Depth Offset	0.0 M
DORL	Depth Offset Repeat Analysis	0.0 M
DTCM	Delta-T Computation Mode	FULL
MODE	Firing Mode	BHC
PP	Playback Processing	NORMAL

Format: SONI-240-300_REP Vertical Scale: 1:240 Graphics File Created: 24-Mar-2000 23:03

OP System Version: 9C0-413					
MCM					
SDT-C	9C0-413	PCD-B	9C0-413		
SGT-L	9C0-413	TCC-B	9C0-413		
BSP	9C0-413				
Input DLIS Files					
DEFAULT	SDTC .014	FN:13 PRODUCER	24-Mar-2000 23:00	762.0 M	447.1 M
DEFAULT	SDTC .013	FN:12 PRODUCER	24-Mar-2000 22:59	762.6 M	678.8 M
Output DLIS Files					
DEFAULT	SDTC .015	FN:14 PRODUCER	24-Mar-2000 23:03		

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
Powered Caliper Device - B Wellsite Calibration - Large Arm Calibration							
Before: 23-MAR-2000 10:23							
Large Arm Small Ring	203.2	N/A	171.3	N/A	N/A	N/A	MM
Large Arm Large Ring	304.8	N/A	308.3	N/A	N/A	N/A	MM
Powered Caliper Device - B Wellsite Calibration - Small Arm Calibration							
Before: 23-MAR-2000 10:27							
Small Arm Small Gauge	25.40	N/A	153.4	N/A	N/A	N/A	MM
Small Arm Large Gauge	127.0	N/A	172.7	N/A	N/A	N/A	MM
Powered Caliper Device - B Wellsite Calibration - Micro Inverse Calibration							
Before: 23-MAR-2000 10:29							
Micro Inverse Zero	0	N/A	4.368	N/A	N/A	0.1000	OHMM
Micro Inverse Plus	5.000	N/A	4.350	N/A	N/A	0.2000	OHMM
Powered Caliper Device - B Wellsite Calibration - Micro Normal Calibration							
Before: 23-MAR-2000 10:29							
Micro Normal Zero	0	N/A	4.368	N/A	N/A	0.1000	OHMM
Micro Normal Plus	5.000	N/A	4.350	N/A	N/A	0.2000	OHMM
Scintillation Gamma-Ray - L Wellsite Calibration - Detector Calibration							
Before: 23-MAR-2000 10:19							
Gamma Ray Background	30.00	N/A	29.47	N/A	N/A	N/A	GAPI
Gamma Ray (Jig - Bkg)	160.6	N/A	160.6	N/A	N/A	14.60	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

Powered Caliper Device - B / Equipment Identification			
Primary Equipment:			
Powered Caliper Mechanical (sonde) - A	PCM - A		
Powered Caliper Cartridge - H	PCC - H		
Auxiliary Equipment:			
Powered Caliper Housing - A	PCH - A	1371	

Powered Caliper Device - B Wellsite Calibration					
Micro Inverse Calibration					
Phase	Micro Inverse Zero OHMM	Value	Phase	Micro Inverse Plus OHMM	Value
Before		EXCEEDS LIMIT 4.368	Before		4.350
-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	4.250 (Minimum)	5.000 (Nominal)	5.750 (Maximum)
Before: 23-MAR-2000 10:29					

Powered Caliper Device - B Wellsite Calibration					
Micro Normal Calibration					
Phase	Micro Normal Zero OHMM	Value	Phase	Micro Normal Plus OHMM	Value
Before		EXCEEDS LIMIT 4.368	Before		4.350
-1.000 (Minimum)	0 (Nominal)	1.000 (Maximum)	4.250 (Minimum)	5.000 (Nominal)	5.750 (Maximum)
Before: 23-MAR-2000 10:29					

Scintillation Gamma-Ray - L / Equipment Identification			
Primary Equipment:			
Scintillation Gamma Cartridge	SGC - SA	1048	
Scintillation Gamma Detector	SGD - TAA		
Auxiliary Equipment:			
Scintillation Gamma Housing	SGH - K	530	
Gamma Source Radioactive	GSR - U/Y		

Scintillation Gamma-Ray - L Wellsite Calibration							
Detector Calibration							
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig - Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI
Before		29.47	Before		160.6	Before	
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	146.0 (Minimum)	160.6 (Nominal)	175.2 (Maximum)	150.0 (Minimum)	165.0 (Nominal)
Before: 23-MAR-2000 10:19							

COMPANY	AECOG LTD.	BOTTOM LOG INTERVAL	757.8 m
WELL	AEC WEST RENAISSANCE CARCAJOU O-47	SCHLUMBERGER DEPTH	759.6 m
FIELD	EXPLORATORY	DEPTH DRILLER	760 m
PROVINCE	NWT	KELLY BUSHING	61.5 m
		DRILL FLOOR	
		GROUND LEVEL	57.2 m

DENSITY

DLT-E
CNT-H
PCD-B
TCC-B

15 JULY 2005

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Journal of Internal Medicine 252: 105–112

**LOT-D
SRT-C
SGT-L
BSP**

PIP SUMMARY

Volume Minor
Volume Major
Volume Cement

ated Cement Vo
ated Cement Vo

PIP SUMMARY
Volume Minor F

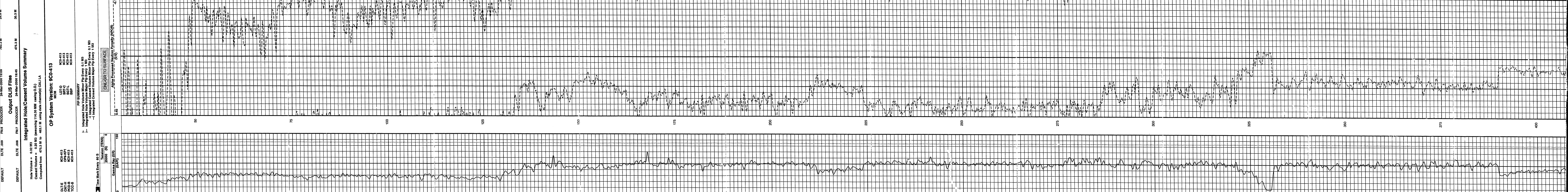
Volume Major Factor in Cement Volume

ated Cement Volume
ated Cement Volume

[illegible]

.....
25000

Bit Size (BS)



Dual Laterolog - E Wellsite Calibration - DLT Electronics Calibration Laterolog Measurement				
Measurement	Nominal	Master	Before	After
Before: 24-MAR-2000 18:32				
MEASURED LLS	31.82	N/A	32.17	N/A
MEASURED LLS	31.82	N/A	32.18	N/A
Litho Density - D Wellsite Calibration - Background Measurement				
Master: 27-FEB-2000 16:31	Before: 23-MAR-2000 10:21			
LL Background	20.00	19.17	19.86	N/A
LS Background	78.00	73.25	72.67	N/A
LTH Background	97.00	93.00	92.00	N/A
SS1 Background	5.000	5.916	5.916	N/A
SS2 Background	15.00	12.18	12.18	N/A
SS2 Background	11.00	0.490	8.493	N/A
Litho Density - D Wellsite Calibration - Tool Quality Control Information HV				
Master: 27-FEB-2000 18:31	Before: 23-MAR-2000 10:21			
LSHV Background	1500	1339	1348	N/A
SSHV Background	1500	1339	1353	N/A
Litho Density - D Wellsite Calibration - Detector Resolution From BKG Measurements				
Master: 27-FEB-2000 18:31	Before: 23-MAR-2000 10:21			
LS Resolution Background	8.000	8.449	8.545	N/A
SS Resolution Background	8.000	8.631	8.717	N/A
Litho Density - D Wellsite Calibration - Caliper Calibration				
Before: 23-MAR-2000 10:27				
Caliper Small Ring	203.2	N/A	175.2	N/A
Caliper Large Ring	304.6	N/A	289.0	N/A
Litho Density - D Master Calibration - Aluminum Measurement				
Master: 27-FEB-2000 18:43				
LL Aluminum	90.00	91.00	--	--
LS Aluminum	135.0	136.7	--	--
LTH Aluminum	150.0	159.4	--	--
SS1 Aluminum	50.00	55.57	--	--
SS2 Aluminum	175.0	178.3	--	--
SS2 Aluminum	260.0	260.3	--	--
Litho Density - D Master Calibration - Litholog Measurement				
Master: 27-FEB-2000 18:38				
LL Iron	80.00	88.87	--	--
LS Iron	120.0	130.5	--	--
LTH Iron	135.0	152.1	--	--
SS1 Iron	30.00	37.73	--	--
SS2 Iron	155.0	172.6	--	--
SS2 Iron	245.0	250.0	--	--
Litho Density - D Master Calibration - Spectrum Quality Factors				
Master: 27-FEB-2000 18:43				
QLRS Calculated	0.6500	0.6556	--	--
QLRS Calculated	0.7200	0.6848	--	--
QLR Calculated	0.3900	0.3487	--	--
QLR Calculated	1.390	1.406	--	--
QR Calculated	1.000	1.014	--	--
Compensated Neutron - H Master Calibration - Tank Measurement				
Master: 27-FEB-2000 14:21	Before: 23-MAR-2000 10:20			
CNTC Background	27.85	27.85	27.52	N/A
CFTC Background	34.74	34.74	36.10	N/A
Compensated Neutron - H Master Calibration - Tank Measurement				
Master: 27-FEB-2000 14:32				
Thermal Near Corr. (Tank)	6031	5839	--	--
Thermal Far Corr. (Tank)	2792	2542	--	--
CNTC/CFTC (Tank)	2.159	2.287	--	--
Spherical Resistivity - C Wellsite Calibration - Electronics Calibration				
Before: 23-MAR-2000 10:31				
MSFL Conductivity Zero	1.000	N/A	1.045	N/A
MSFL Conductivity Plus	0.2000	N/A	0.2459	N/A
MSFL Conductivity Plus	500.0	N/A	489.3	N/A
MSFL Bucking Current Plus	100.0	N/A	96.05	N/A
Spherical Resistivity - C Wellsite Calibration - Caliper Downhole Calibration				
Before: Calibration not done				
CALPER Downhole	414.2	N/A	N/A	N/A
Powered Caliper Device - B Wellsite Calibration - Large Arm Calibration				
Before: 23-MAR-2000 10:23				
Large Arm Small Ring	203.2	N/A	171.3	N/A
Large Arm Large Ring	304.8	N/A	308.3	N/A
Powered Caliper Device - B Wellsite Calibration - Small Arm Calibration				
Before: 23-MAR-2000 10:27				
Small Arm Small Gauge	25.40	N/A	153.4	N/A
Small Arm Large Gauge	127.0	N/A	172.7	N/A
Powered Caliper Device - B Wellsite Calibration - Micro Inverse Calibration				
Before: 23-MAR-2000 10:29				
Micro Inverse Zero	0	N/A	4.368	N/A
Micro Inverse Plus	5.000	N/A	4.350	N/A
Powered Caliper Device - B Wellsite Calibration - Micro Normal Calibration				
Before: 23-MAR-2000 10:29				
Micro Normal Zero	0	N/A	4.368	N/A
Micro Normal Plus	5.000	N/A	4.350	N/A
Scintillation Gamma-Ray - L Wellsite Calibration - Detector Calibration				
Before: 23-MAR-2000 10:19				
Gamma Ray Background	30.00	N/A	29.47	N/A
Gamma Ray (Jig - Bkg)	160.6	N/A	160.6	N/A
Gamma Ray (Calibrated)	160.6	N/A	160.6	N/A
The CNT Master Calibration Was Done With The Following Parameters :				
NCT-B Water Temperature 65.725 MM.				
Thermal Housing Size 10.0 DEGC.				

Dual Laterolog - E / Equipment Identification				
Primary Equipment:				
Dual Laterolog Electrode	DLE - E			
Dual Laterolog Sonde	DLS - F			
Dual Laterolog Housing	DLH - CB			
Dual Laterolog Cartridge	DLC - D			
Laterolog Control Module	LCH - AA			

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
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After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
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After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
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After	31.82	32.17	After	32.18
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Dual Laterolog - E Wellsite Calibration				
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Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
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Before: 24-MAR-2000 18:32				

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Dual Laterolog - E Wellsite Calibration				
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After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
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Before	31.82	32.17	Before	32.18
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Dual Laterolog - E Wellsite Calibration				
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Before	31.82	32.17	Before	32.18
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Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
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Before	31.82	32.17	Before	32.18
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Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	32.18
After	31.82	32.17	After	32.18
Before: 24-MAR-2000 18:32				

Dual Laterolog - E Wellsite Calibration				
Phase	Deep Current Plus UA	Value	Phase	Deep Voltage Plus MV
Before	31.82	32.17	Before	3

SYNTHETIC SEISMOGRAM

O-047 65-40 128-30
KB = 61.50M

Time Control Curve = SONIC
Time Datum = -385.64 m
Time Sample Interval = 1.00 ms
AGC Length = 0.00
Traces per ORF = 12
Amplitude = 1.00
Multiples = None
Logs Used in RC Calc.:
SONIC
DENSITY
Time Scale = 10.050 cm/sec
Date = Aug-29-2000 13:29:01

VELOCITY

Depth

SONIC

DENSITY

REFL. COEF.

(2) Ormsby
10-15-60-80 Hz, 0 deg

(2) Normal
Ormsby 10-15-60-80 Hz, 0 deg

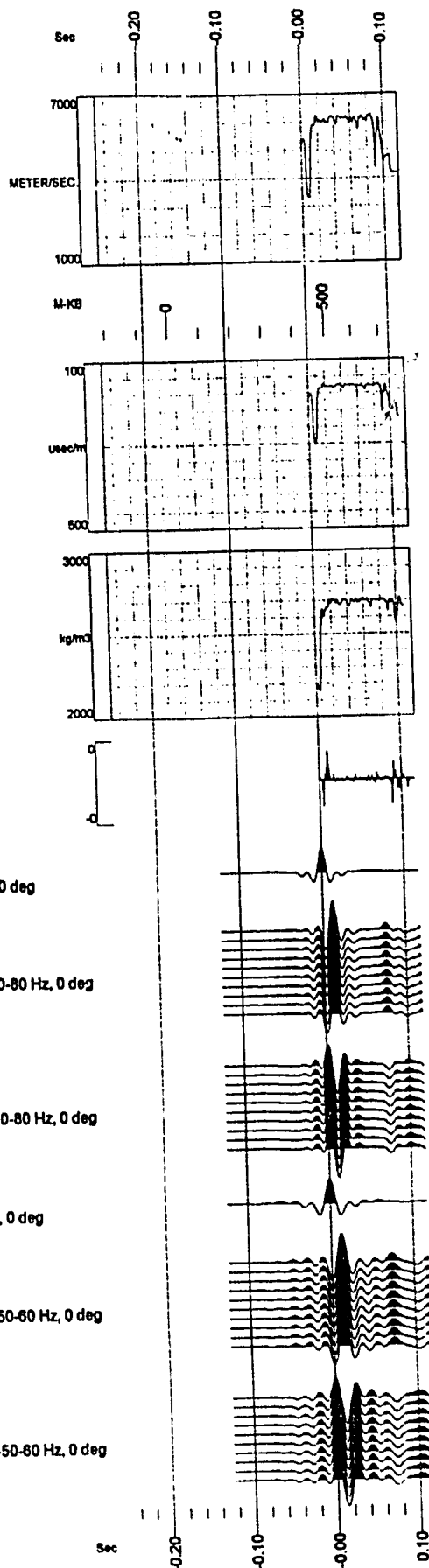
(2) Reverse
Ormsby 10-15-60-80 Hz, 0 deg

(1) Ormsby
10-15-50-60 Hz, 0 deg

(1) Normal
Ormsby 10-15-50-60 Hz, 0 deg

(1) Reverse
Ormsby 10-15-50-60 Hz, 0 deg

Time



WAVELET 1 Ormsby Frequency 2 = 150 Hz
Frequency 1 = 100 Hz Frequency 3 = 50 Hz
Phase = 0 deg
WAVELET 2 Ormsby Frequency 2 = 150 Hz
Frequency 1 = 100 Hz Frequency 3 = 50 Hz
Phase = 0 deg

AEC Oil & Gas - Western New Ventures

ADDITIONAL INFORMATION

compu-max

71 Martinview Road, N.E.
CALGARY, Alberta
T3J 2W2 (403) 280-5857

**COMPOSITE WELL HISTORY
DRILLING TIME
LITHOLOGY LOG**

COMPANY: AEC OIL & GAS LTD

N.E.B. COPY

WELL: AEC (WEST) RENAISSANCE CARCAJOU O-47

FIELD: EXPLORATORY

PROVINCE: NWT

LOCATION: LSD SEC TWP RGE W MERIDIAN

COORDINATES: 7276663.6 N

516746.48 E

ELEVATIONS: GD 57.2 m

LOG MEASURED FROM KB

KB 61.5 m

4.3 m ABOVE GROUND

WELL TYPE: EXPLORATORY

TOTAL DEPTH:

SPUD DATE: 2000-03-20

T.D. DATE:

LICENCE No.: 1891

AFE No.: 5000048

CONTRACTOR: AKITA #14

CORES: NONE

MUD TYPE: GEL CHEM

MUD UP @:

SAMPLES: 5 & 2.5 METER INTERVALS

AEC/REN: 135 TO T.D. METERS

GOV'T: 135 TO T.D. METERS

DSTs: NONE

OPEN HOLE LOGS: SCHLUMBERGER

CASING DEPTH
SURFACE: 125 m
INTERMEDIATE: m
MAIN: m

CASING SIZE
SURFACE: 244.5 mm
INTERMEDIATE: 177.8 mm
MAIN: 114.3 mm

HOLE SIZE
SURFACE: 311 mm
INTERMEDIATE: 222 mm
MAIN: 156 mm

REMARKS:

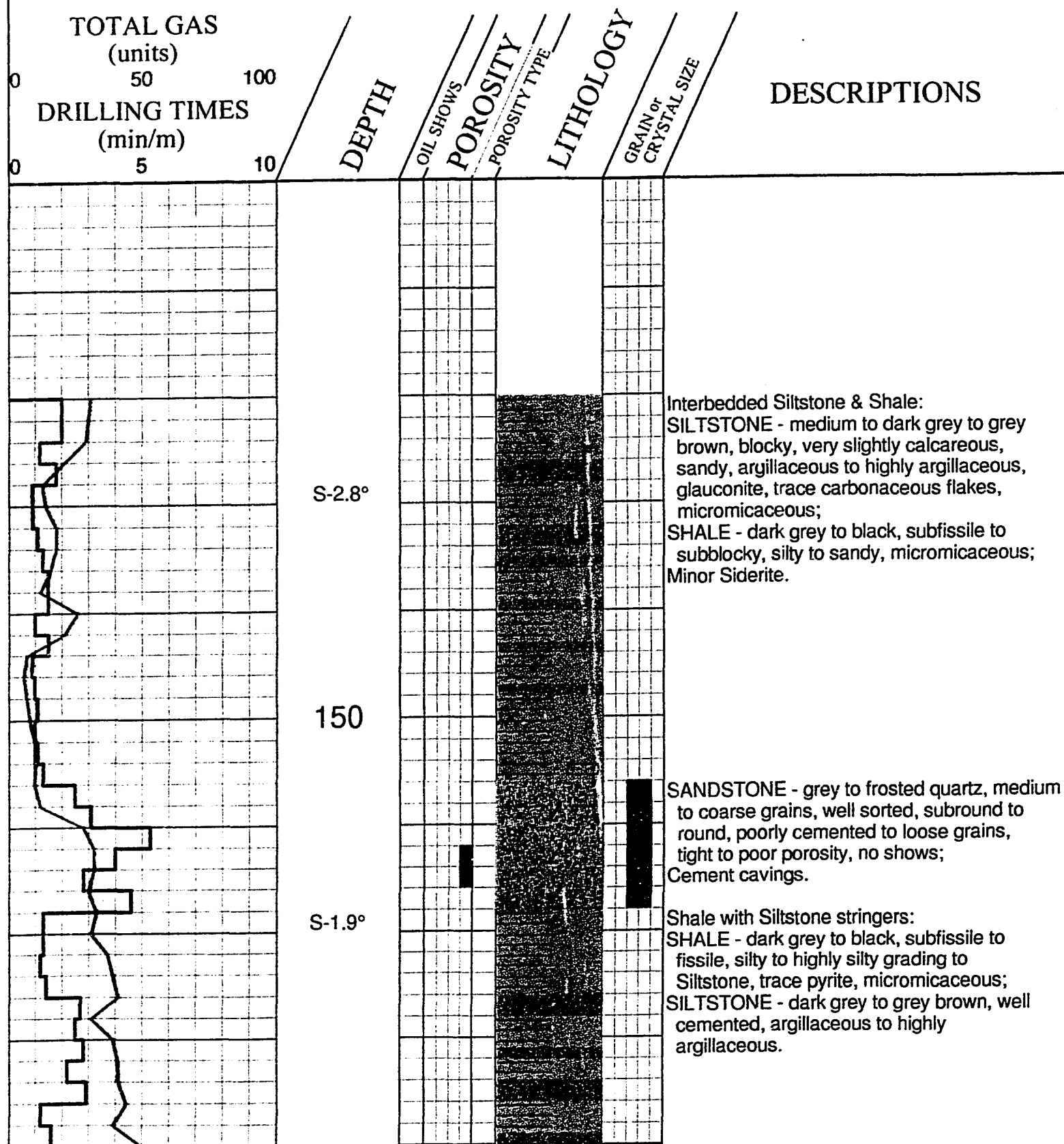
SUPERVISION

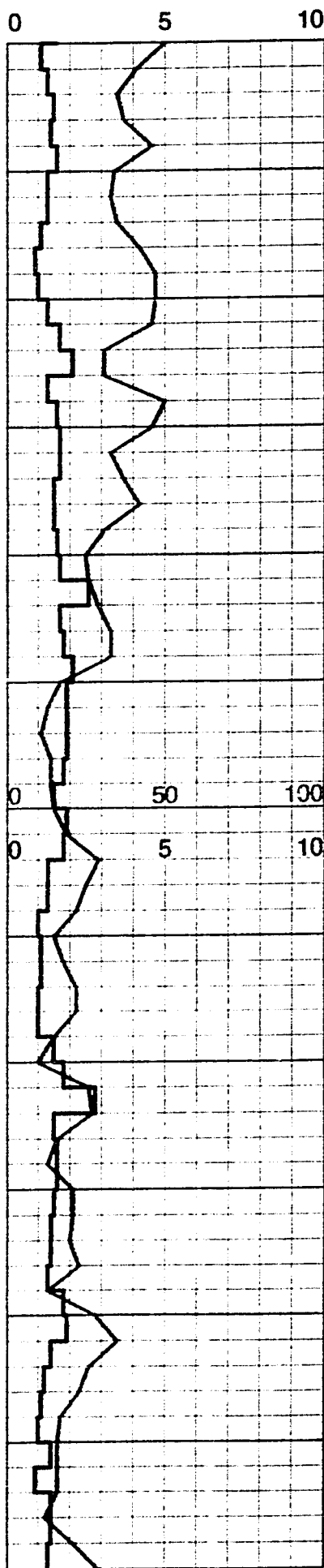
GEOLOGICAL: Glen MacIntosh

DRILLING: ALLAN ANGER

CANSTRAT SYMBOLS USED FOR LITHOLOGY AND SHOWS

SCALE 1:240





175

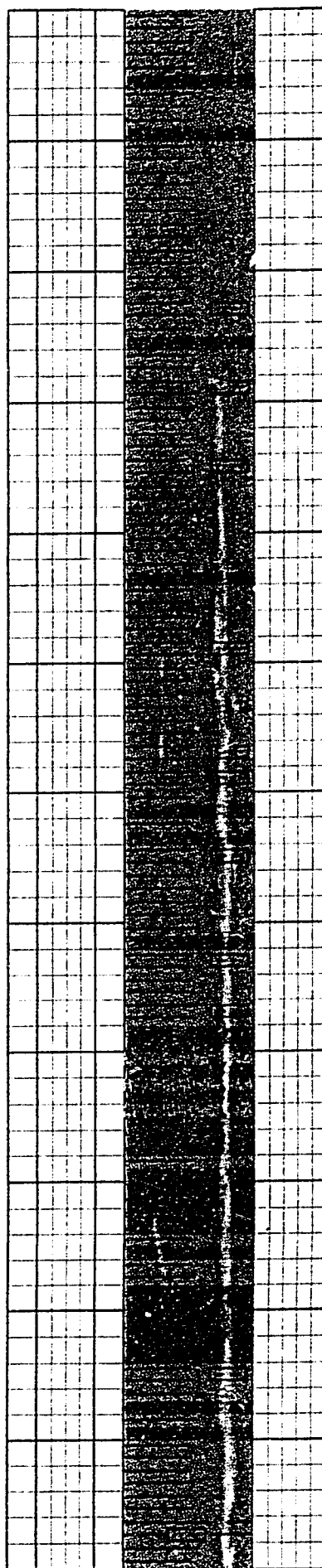
S-1.2°

200

S-1.5°

225

S-1.6°

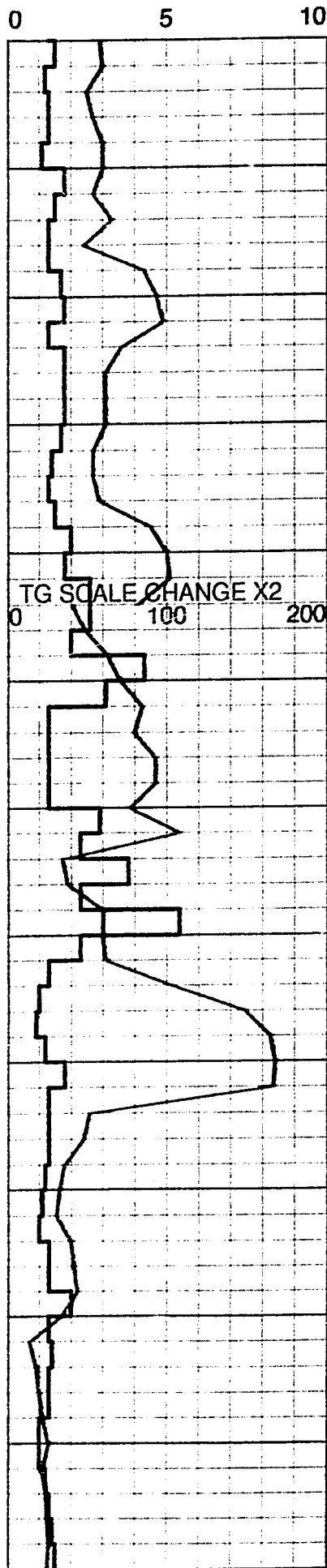


Shale with Siltstone stringers:
SHALE - dark grey to black, subfissile to
fissile, silty to highly silty grading to
Siltstone, trace pyrite, micromicaceous;

Shale with Siltstone stringers:
SHALE - dark grey to black, fissile to
subfissile, silty to sandy grading to
argillaceous Siltstone, micromicaceous.

Interbedded Siltstone & Shale:
SILTSTONE - medium to dark grey, silt to
very fine Sandstone, well cemented,
calcareous to dolomitic cement,
argillaceous, tight;
SHALE - dark grey to black, fissile to
subfissile, silty to sandy grading to
argillaceous Siltstone, micromicaceous.

SHALE - dark grey to black, fissile to
subfissile, platy, silty, micromicaceous,
slightly carbonaceous, trace pyrite;
Minor Siderite stringers.



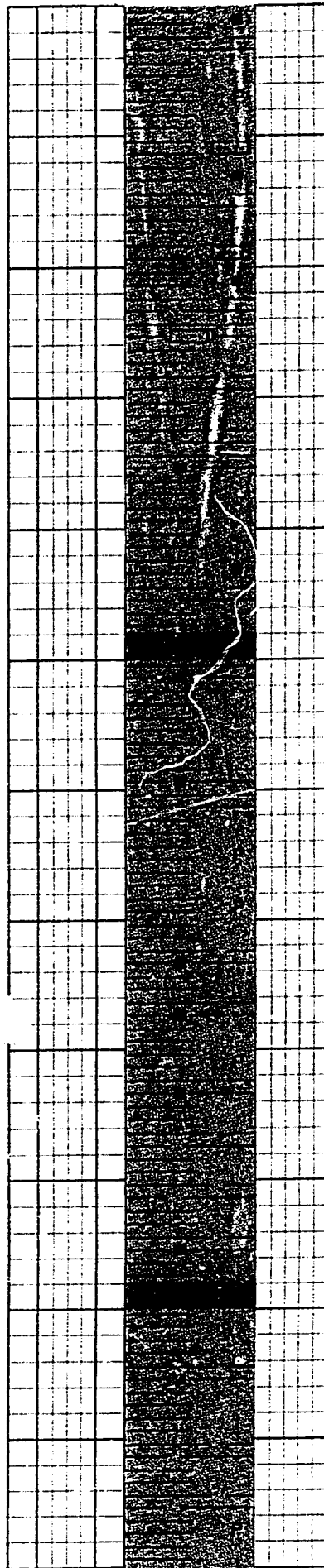
S-1.7°

250

S-0.6°

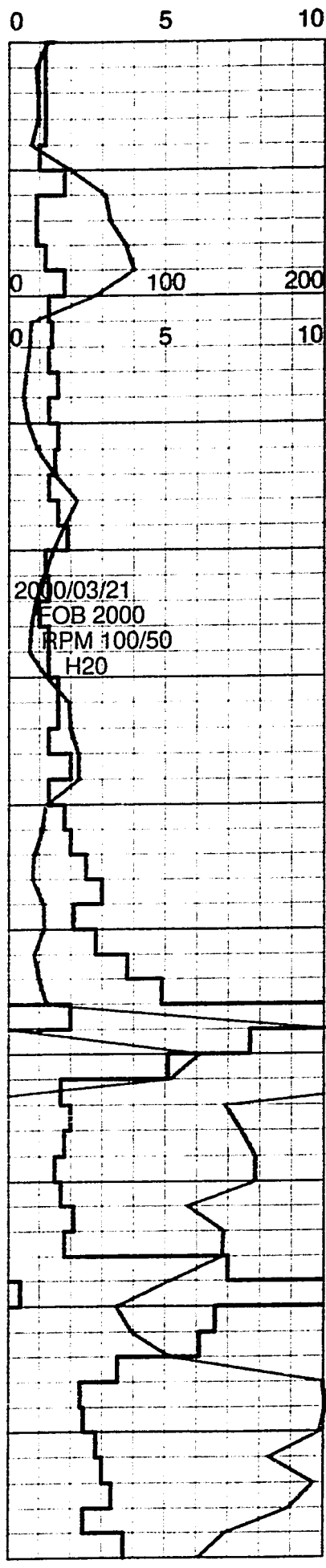
275

S-1.0°



SHALE - dark grey to black, fissile to subfissile, platy, slightly silty in part, micromicaceous, minor pyrite, carbonaceous, firm; Minor Siderite.

SHALE - dark grey to black, fissile to subfissile, platy, slightly silty in part, micromicaceous, minor pyrite, carbonaceous, firm; Minor Siderite.



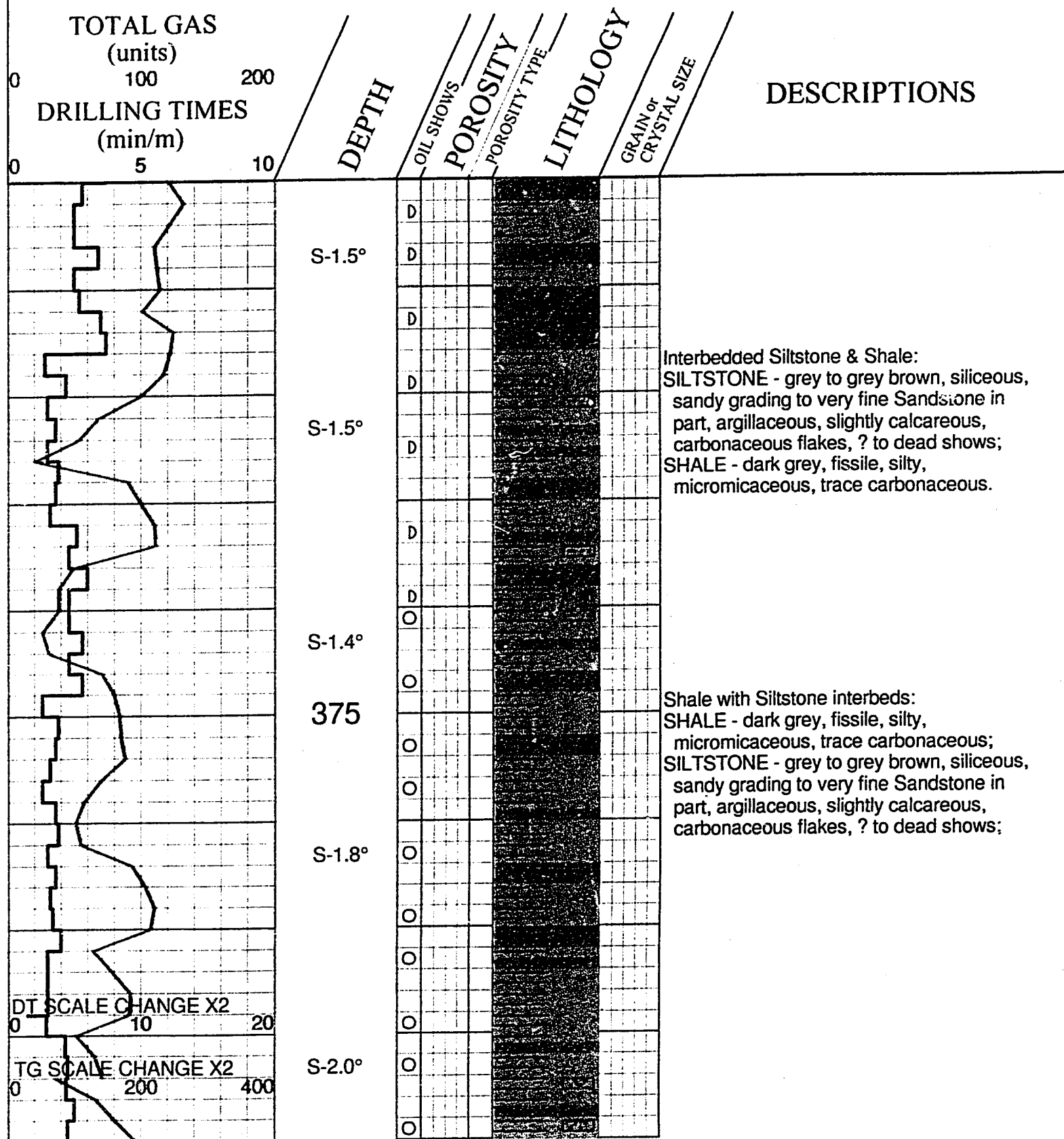
Interbedded Shale & Siltstone:
SHALE - dark grey, fissile to subfissile, blocky, silty, carbonaceous, micromicaceous, disseminated pyrite;
SILTSTONE - dark grey to grey brown, argillaceous, calcareous in part, sandy grading, rare glauconite, micromicaceous, pyritic;

Shale with Siltstone interbeds:
SHALE - dark grey, fissile to subfissile, blocky, silty, carbonaceous, micromicaceous, disseminated pyrite;
SILTSTONE - dark brown to grey brown, well cemented, argillaceous, slightly calcareous, sandy in part, tight

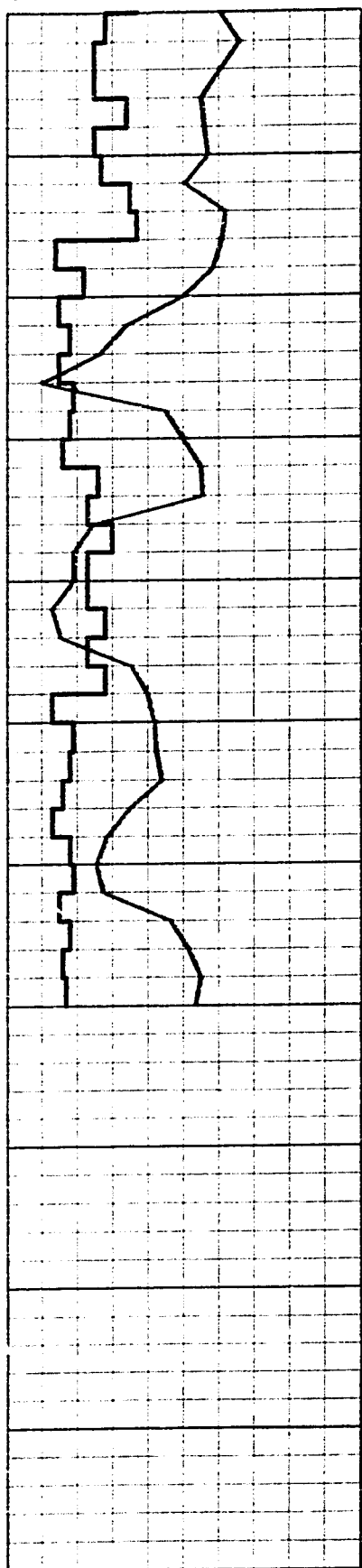
SANDSTONE - off white to light tan, clear & frosted quartz, very fine to coarse, subangular to subround, moderately sorted, poorly cemented to loose, clean, trace clay, trace glauc, trace pyrobit, fair to good porosity (>10%), slow white streaming cut.

Siltstone with Shale interbeds & laminae:
SILTSTONE - grey to grey brown, siliceous, sandy grading to very fine Sandstone in part, argillaceous, slightly calcareous, carbonaceous flakes, ? to dead shows;
SHALE - dark grey, fissile, silty, micromicaceous, trace carbonaceous.

SCALE 1:240



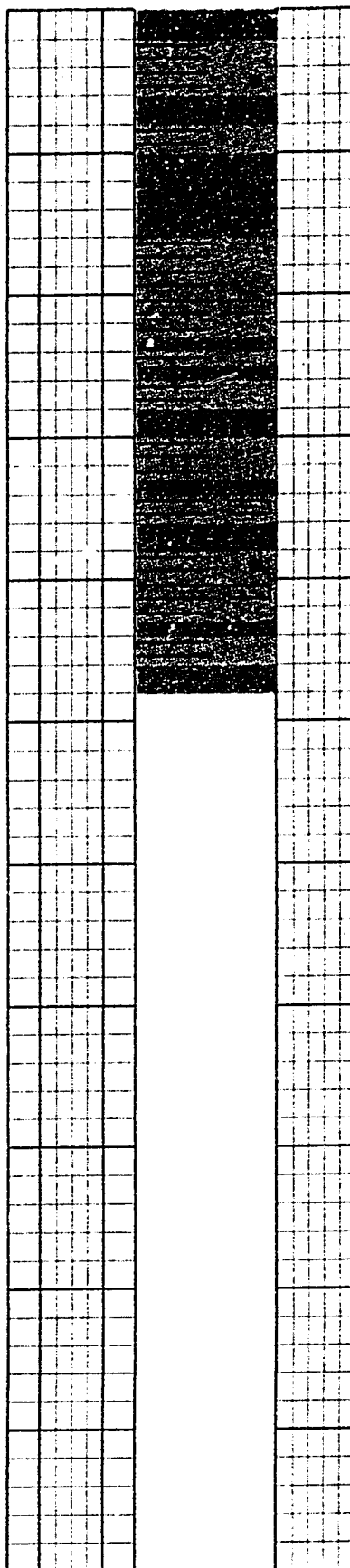
0 5 10



S-1.5°

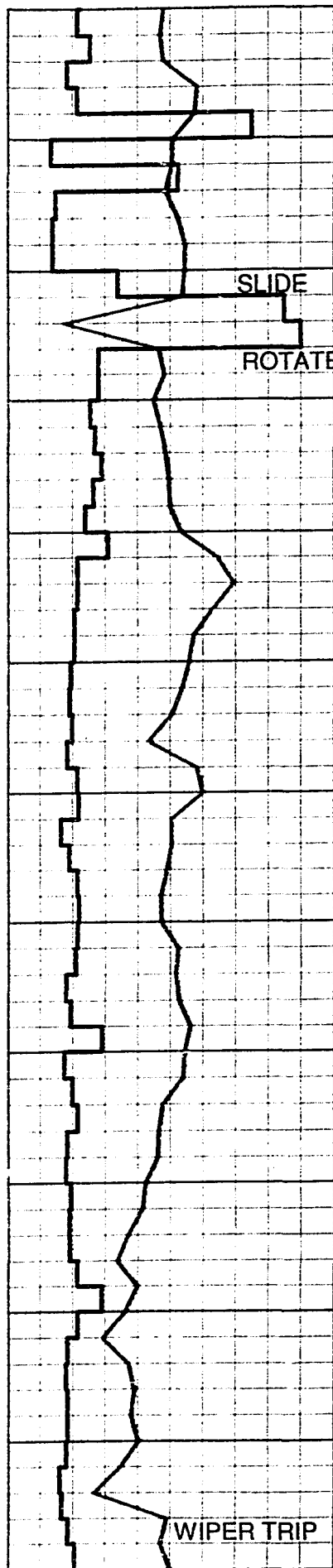
375

400



Interbedded Siltstone & Shale:
 SILTSTONE - grey to grey brown, siliceous,
 sandy grading to very fine Sandstone in
 part, argillaceous, slightly calcareous,
 carbonaceous flakes, ? to dead shows;
 SHALE - dark grey, fissile, silty,
 micromicaceous, trace carbonaceous.

0 10 20



400

S-2.1°

S-2.0°

S-1.9°

425

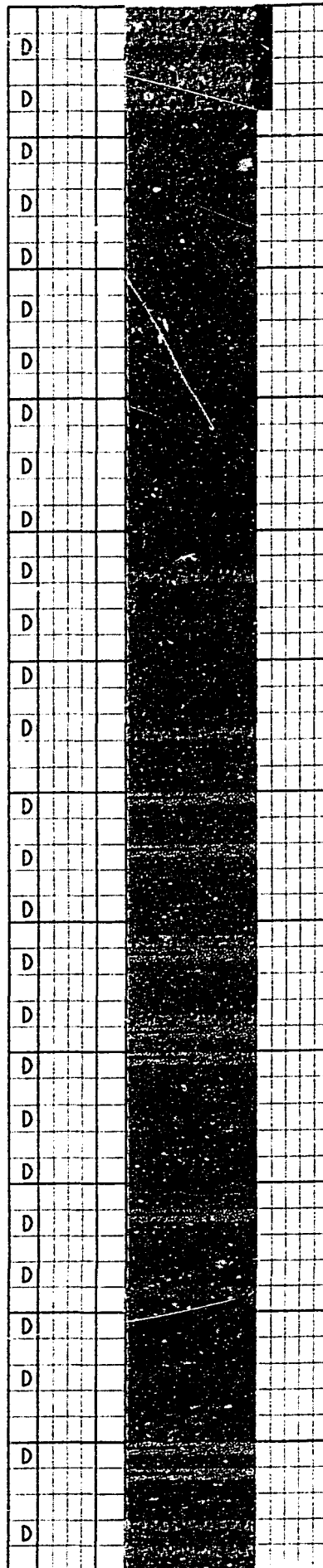
S-2.1°

S-2.4°

450

S-2.5°

WIPER TRIP



Sandstone grading to Siltstone:

SANDSTONE - medium brown grey, silt to very fine grained, subangular, well sorted, well cemented, silica cement, slightly dolomitic, argillaceous, carbonaceous flakes, tight, fast white cut;

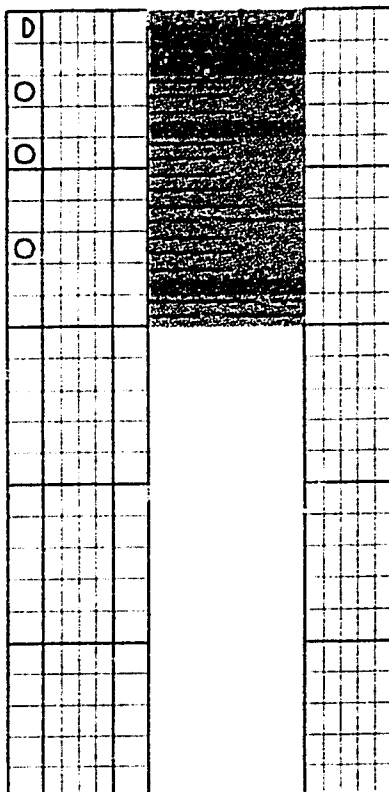
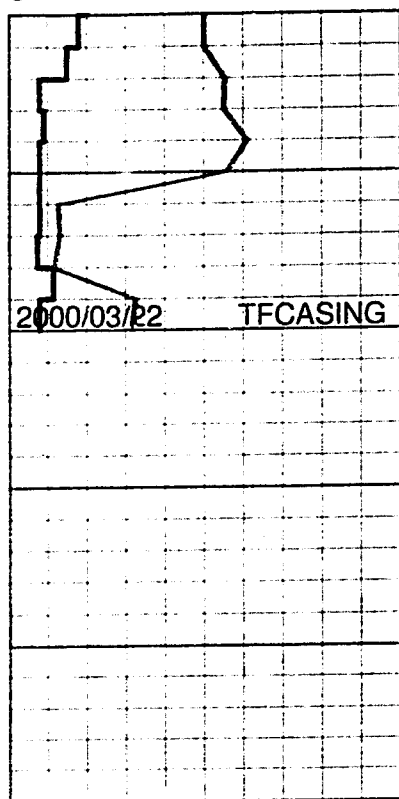
SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut.

Siltstone with Sandstone stringers & Shale laminae:

SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut.

SILTSTONE - medium brown grey, well cemented, silica cement, dolomitic, sandy grading to Sandstone, argillaceous, carbonaceous flakes, tight, fast white cut; Minor Shale laminae.

0 10 20



Shale with Siltstone stringers:
SHALE - dark grey to black, fissile to
subfissile, platy, silty, micromicaceous.

Drilled out @ 9 AM March 22
used Air

Proj
(471m) 4 PM March 22/2000
469m Dks top

at 512m (4 PM)
drill rate 68m/hr

Dhi 712m → est 740 Dhi
→ est 740m TD

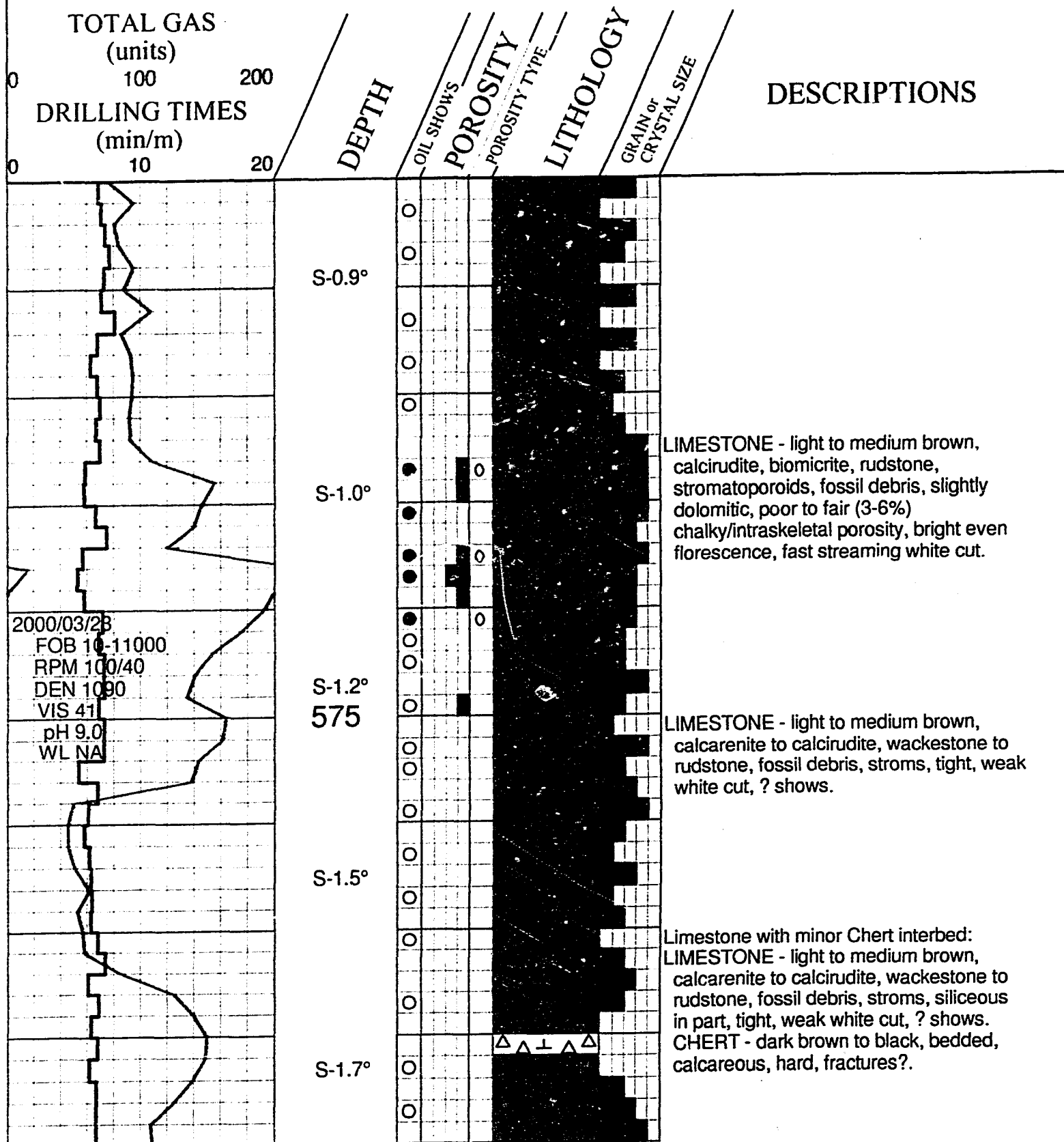
Rep 6 PM Friday
March 24

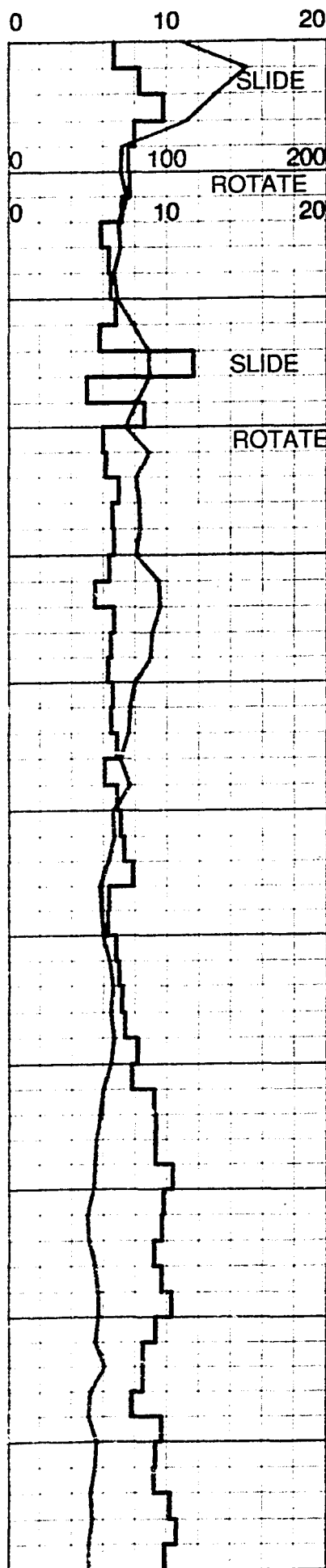
2
24
6
144
61.2
656 FRe
144 ✓
790

noon Friday
~~Saturday~~

CANSTRAT SYMBOLS USED FOR LITHOLOGY AND SHOWS

SCALE 1:240





600

S-1.0°

S-0.8°

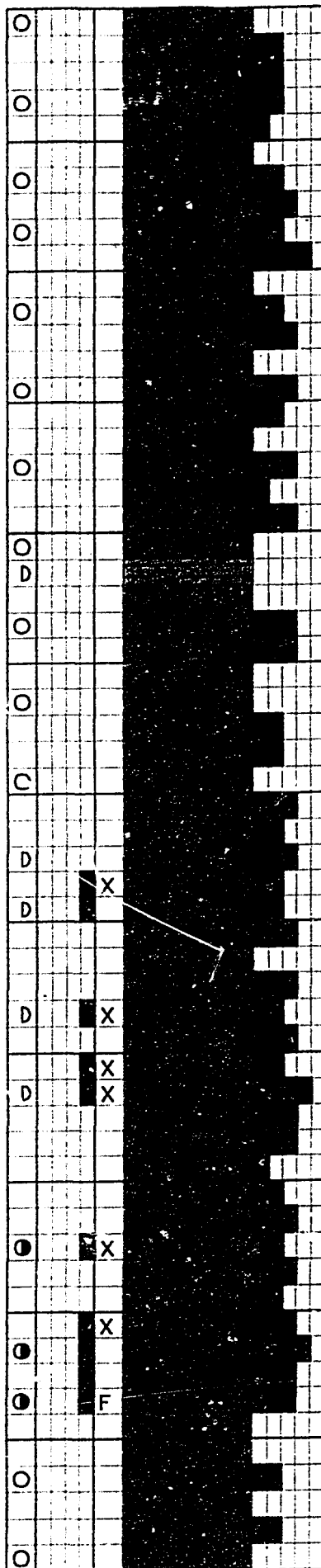
625

S-0.8°

S-0.4°

650

S-0.8°



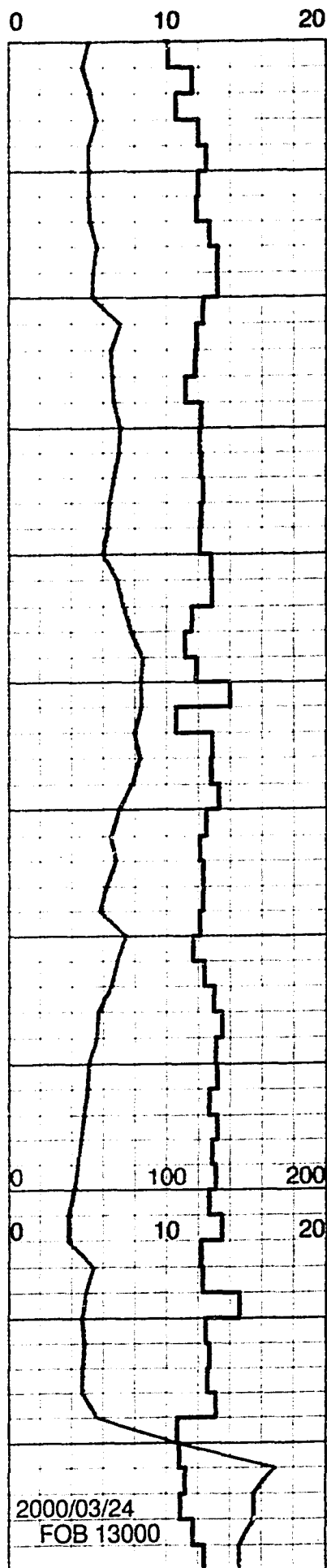
LIMESTONE - light to medium brown, calcarenite to calcirudite, wackestone to rudstone, fossil debris, stroms, siliceous in part, tight, weak white cut, ? shows.

LIMESTONE - medium grey brown to dark brown to black, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stroms, fossil debris, dense matrix, argillaceous to highly argillaceous in part, residual bitumen, tight, spotty to ? shows; Trace Shale laminae.

LIMESTONE - medium to dark grey brown, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stroms, fossil debris, dense matrix, slightly argillaceous in part, siliceous in part, minor residual bitumen, tight to trace chalky porosity (3%), minor fracture porosity, slow to fast streaming white cut; Trace Chert stringers.

LIMESTONE - light to medium brown to grey brown, calcilutite to calcirudite, biomicrite, wackestone to rudstone, stroms, fossil debris, slightly argillaceous in part, minor residual bitumen, tight to trace chalky porosity (3%), minor fracture porosity, fast streaming white cut Fracture filling calcite.

LIMESTONE - medium to dark brown, calcilutite to calcarenite, micrite to biomicrite, mudstone to wackestone, fossil debris, argillaceous, siliceous, dense, fast streaming white cut.



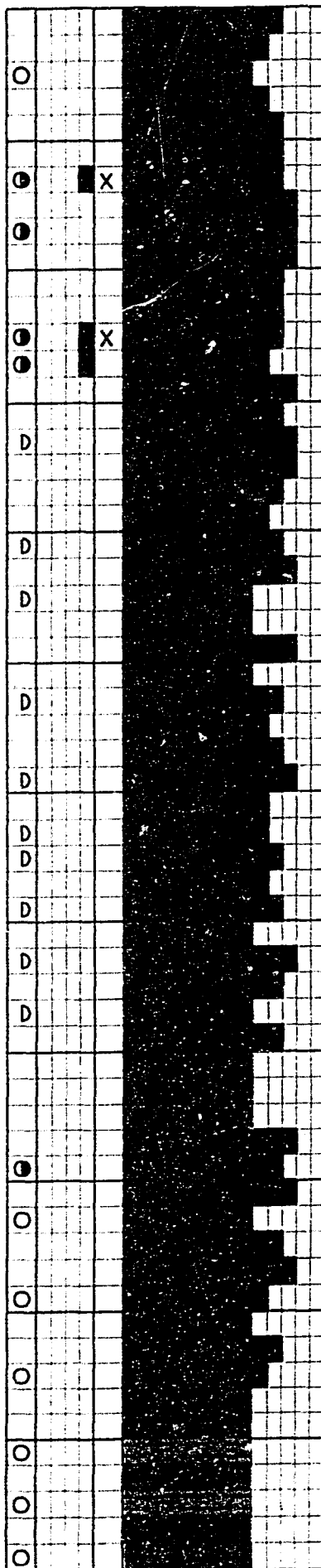
S-0.9°

S-0.9°

675

S-1.1°

S-1.1°
700

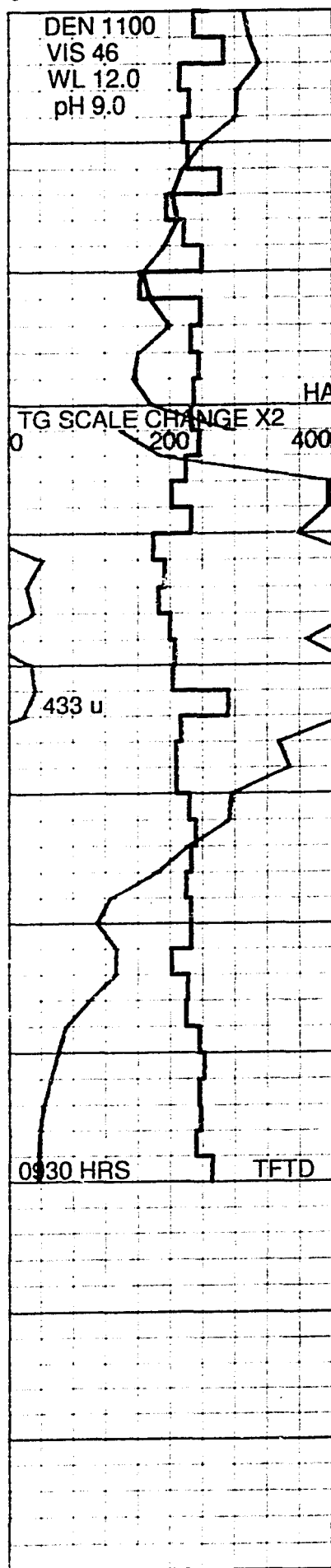


LIMESTONE - light to medium brown to grey brown, calcarenite to calcirudite, biopelmicrite, wackestone to rudstone, fossil debris, pellets, stroms, argillaceous in part, slightly dolomitic, minor bitumen residue, tight to trace poor (<3%) porosity, spotty to ? shows; Minor Shale laminae.

LIMESTONE - light to medium brown (allochems) to dark brown (matrix), micrite to biomicrite, mudstone to rudstone, stroms, fossil debris, argillaceous to highly argillaceous in part, siliceous to Cherty in part, tight, trace poor chalky porosity, moderate to fast streaming white cut. Minor Chert stringers; Minor Shale laminae.

Interbedded Limestone, Shale & Siltstone:
LIMESTONE - light brown grey to dark brown, calcilutite to calcarenite, micrite to biomicrite, mudstone to wackestone, fossil debris, argillaceous to highly argillaceous grading to Shale, silty grading to Siltstone in

0 10 20



725

S-1.7°

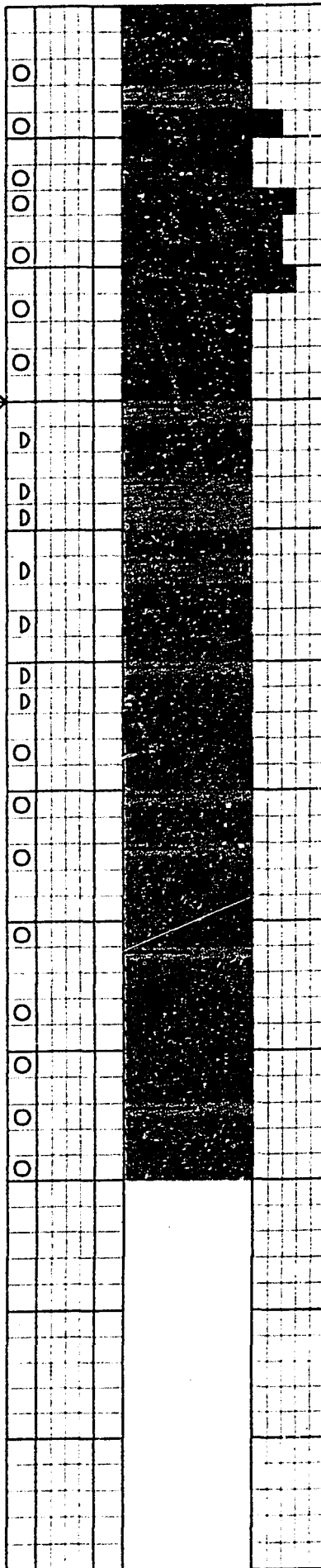
HARE INDIAN
(730.0)

S-1.6°

S-1.6°

750

775



part, tight, slow to moderate white cut;
SHALE - dark grey to black, subfissile to
blocky, highly calcareous, slightly silty,
trace pyrite, slightly bituminous;
SILTSTONE - medium brown, well cemented,
highly calcareous, slightly argillaceous.

Interbedded Shale & Siltstone with
Limestone stringers:
SHALE - dark grey to black, subfissile to
blocky, calcareous to highly calcareous,
silty, micromicaceous, bituminous, trace
disseminated pyrite, fast streaming white
cut;
SILTSTONE - medium to dark grey brown,
well cemented, calcareous to highly
calcareous, grading to Limestone in part,
minor pyrobitumen, slow to moderate
streaming white cut;
LIMESTONE - light brown with black specks,
calclutite, micrite, mudstone, very silty,
pyrobitumen.