

5 year data

Release 5 March 2005

GEOLOGICAL PROGNOSIS

AEC(West) Renaissance Carcajou P-16

location: 65° 35'56.97278"N, 128° 17'18.15527"W

NAD1927

Line 99CAR99-01 shot point 809

Formation	Drill Depth(TVD)	Subsea depth	interval	Lithology
KB	0	+90m	0	
Surface GL	4m	+86m	4m	air
Pleistocene	4m	+86m	20m	Tundra, Gravel/ sands/silty-shale
Cretaceous	24m	+66m	279m	Shale/silt/sand//Basal sand thin
Devonian Imperial	303m	-213m	199m	Shale slightly silty dk. Grey
Mid Devonian Canol	502m	-412m	5m	Shale Black(source rock)
Kee Scarp *	507m	-417m	117m	Limestone(tight/porous) *objective
Hare Indian	624m	-534m	51m	Shale-silty dk. grey/green
Total Depth projected	675m	-585m		

Objective: Kee Scarp

Core 9m in Objective if porous

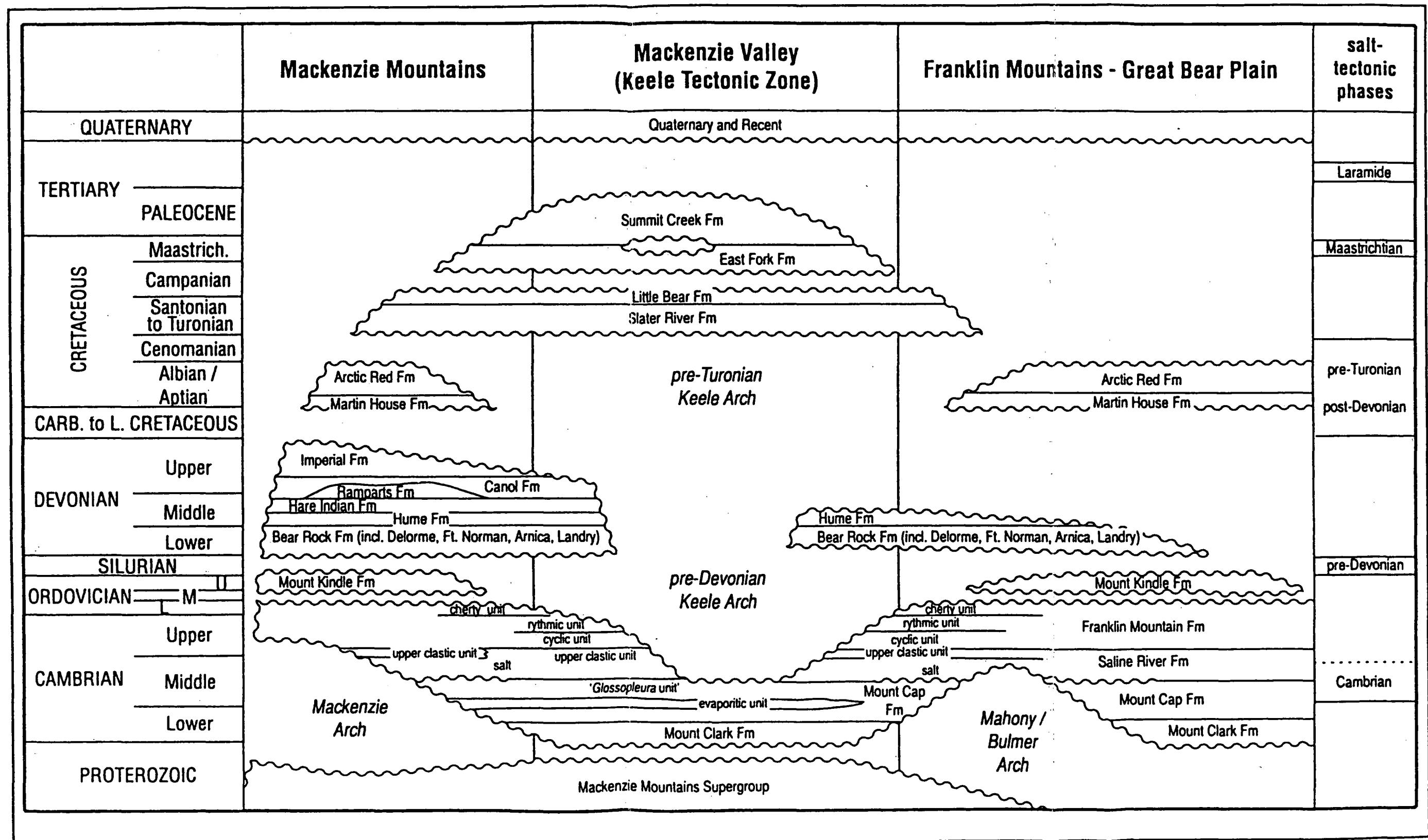


Fig. 5. Regional stratigraphic and tectonic relationships chart including salt tectonic phases in the study area.

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



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 P-16

Operator: AEC OIL & GAS

Contractor: Akita Drilling Ltd.

Drilling Rig or Unit: Rig #14

Location-Unit: P

Section: 16

Coordinates: Lat.: 65 35' 56".97278

Area: Carcajou (Ft. Good Hope/ Norman Wells)

Elevation-KB/RT: 89.41m (est.) (ASL)

Approx. Spud Date: February 12, 2000

Anticipated Total Depth: 675m

Drilling Program No.:

Interest Identifier:

Estimated Well Cost: \$1,200,000

Grid Area: 65 40', 128 15'

Long.: 128 17' 18".155227

Field / Pool: Exploratory

GL / Seafloor: 85.41m

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	135m	Arctic Set
177.8	34.2	J-55	505m	RFC + add.
114.3	14.14	J-55	675m	RFC + add.

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

Date: 2000/01/07

Company: AEC Oil & Gas

Phone: (403) 213-2629

APPROVAL

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

Date: Feb. 11/2000

File: 9211-A061-2-2

WID: 1889

UWI: 300P166540128150

Signed:

Chief Conservation Officer

AEC (WEST) RENAISSANCE CARCAJOU P-16

DEVIATION RECORD

Survey No.	Depth (meters)	Deviation (degrees)	Interval (meters)
1	47	0.130	47
2	75	0.250	28
3	102	0.500	27
4	130	0.500	28
5	227	1.000	97
6	324	2.000	97
7	373	2.500	49
8	421	2.500	48
9	469	3.000	48
10	500	2.000	31
11	570	2.000	70
12	657	2.500	87

Summary of Operating Costs

Alberta Energy Company Ltd.

Wellbore Name	AEC (WEST) REN CARCAJOU P-16	AFE Numbers	5000046	Supervisor	LYNN SANDQUIST
Spud Date	Feb 25, 2000	Rig Release Date	Mar 05, 2000		

Major Code	Minor Code	Cost Description	02/22/00	02/23/00	02/24/00	02/25/00	02/26/00	02/27/00	02/28/00	02/29/00	03/01/00	03/02/00	03/03/00				Accum. Total	A/E Est.	Var.
9210	308	LOCATION PREP/ROAD			180,000												\$180,000	\$35,000	-145,000
9210	310	LEASE/ROAD MAINTENANCE/STANDBY CAT							20,000								\$20,000	\$0	-20,000
9210	312	CLEANUP/ABANDON		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000				\$10,000	\$25,000	15,000
9210	314	CONDUCTOR/RAT/MOUSEHOLE			25,000												\$25,000	\$30,000	5,000
9210	316	RIG/CAMP MOVE IN/OUT			263,000												\$263,000	\$250,000	-13,000
9210	324	DAYWORK	13,900	13,900	13,900	13,900	13,900	13,900	15,000	15,000	15,000	15,000	15,000				\$158,400	\$208,000	49,600
9210	328	STEAMER	600	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500				\$15,600	\$33,000	17,400
9210	330	TRAVL/SUBSISTANCE/CAMP	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500	6,500				\$71,500	\$83,000	11,500
9210	334	MUD/FLUIDS/LUBRICATION				1			562		12						\$575	\$25,000	24,425
9210	336	BITS				10,000	10,000			10,000							\$30,000	\$29,000	-1,000
9210	340	EQUIPMENT RENTAL	1	1	1,000	751	470	470	520	520	520	485	1,150				\$5,888	\$39,000	33,112
9210	346	WATER ACCESS/HAULING	1,000	1,000	1,000	1,000	1,000	1,000	2,000	2,000	2,000	2,000	2,000				\$16,000	\$21,000	5,000
9210	348	TRANSPORT/TRUCKING	2,000	2,000	1				9,000				1				\$13,002	\$22,000	8,998
9210	354	CORING/ANALYSIS									8,594						\$8,594	\$35,000	26,406
9210	356	LOG/PERF/ANALYSIS											26,579				\$26,579	\$70,000	43,421
9210	370	SUPERVISION/VEHICLE/TELEPHONE	800	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600	1,600				\$16,800	\$22,000	5,200
9210	372	COMMUNICATION/TELEPHONE					100	100	100	100	100	100	100				\$700	\$4,000	3,300
9210	378	SAFETY/ENVIRONMENT	800	800	800	800	800	800	800	800	800	800	1,000				\$9,000	\$11,000	2,000
9210	391	SURFACE CASING				8,840											\$8,840	\$7,000	-1,840
9210	392	SURFACE CASE-CEMENT				25,900											\$25,900	\$27,000	1,100
9210	394	SURFACE CASE-ACC/WELD/TONGS				1,500											\$1,500	\$3,000	1,500
9210	395	INTERMEDIATE CASING							18,300								\$18,300	\$14,000	-4,300
9210	396	INTERMEDIATE CASING - CEMENTING							46,777								\$46,777	\$20,000	-26,777
9210	397	INTERMEDIATE CASE-ACC/WELD/TONGS								4,000							\$4,000	\$8,000	4,000
9210	400	PRODUCTION CASING											14,740				\$14,740	\$15,000	260
9210	402	PRODUCTION CASING-CEMENT											24,689				\$24,689	\$22,000	-2,689
9210	404	PRODUCTION CASING-ACC/WELD/TONGS											5,000				\$5,000	\$9,000	4,000
9210	300	CONSULTING/EVALUATION/DESIGN															\$0	\$7,000	7,000
9210	302	SURFACE RIGHTS/SURVEY/EASEMENTS															\$0	\$35,000	35,000
9210	350	INSPECTION/SERVICE															\$0	\$3,000	3,000
9210	352	CONTRACT SERVICE/LABOR															\$0	\$15,000	15,000
9210	358	DRILL STEM TEST/ANALYSIS															\$0	\$8,000	8,000
9210	386	OVERHEAD															\$0	\$13,000	13,000
9210	390	CASING BOWL															\$0	\$2,500	2,500

AEC (WEST) RENAISSANCE CARCAJOU P-16

WELL DATA SUMMARY

Company: AEC (West)

Well Name: AEC (West) Renaissance Carcajou P-16

Surface Location: 65°35'56.97278" N, 128°17'18.15527" W

Surface Co-ordinates: Northing: 7275226.705, Easting: 532805.104

Elevations: ***Ground:*** 86.4 meters
Kelly Bushing: 90.7 meters
K.B. to Ground: 4.3 meters

Unique Well I.D.: 300P166540128150

Field: Exploratory

Classification: NPW

Objectives: ***Primary*** – Kee Scarp

Terminating Zone: Hare Indian

Security: Tight

AFE Number: 5000046

Licence Number: 1889

Spud Date: 0315 Hrs., February 25, 2000

Total Depth: 669 meters @ 0545 Hrs, March 3, 2000

AEC (WEST) RENAISSANCE CARCAJOU P-16

Sampled Interval: **AEC/Ren:** 136 to T.D. meters (5 & 2.5 meter intervals)
Gov't: 136 to T.D. meters (5 & 2.5 meter intervals)

Contractor: Akita Drilling # 14

Drilling Supervision: Lynn Sandquist

Geological Supervision: Glen MacIntosh

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

Surface Casing: **Size:** 244.5 mm
Type: 11 joints of 53.57 kg/m J-55
Landed @ 136.0 meters
Cement: 11.0 Tonnes Arctic Set + additives
Plug down @ 2123 Hrs February 26, 2000

Intermediate Casing: **Size:** 177.8 mm
Type: 41 joints of 34.2 kg/m J-55
Landed @ 508.0 meters
Cement: 11.5 Tonnes RFC + additives
Plug down @ 0240 Hrs February 29, 2000

Production Casing: **Size:** 114.3 mm
Type: 56 joints 14.1 kg/m J-55 ST-C
Landed @ 669 meters
Cement: 10.0 Tonnes RFC + additives
Plug down @ 0035 Hrs March 4, 2000

<u>Open Hole Logs:</u>	Schlumberger	
Log	Interval Logged	Scale
CNL-LDT-DLL	663 to 508 meters	1:240 & 1:600
BHCS-GR	666 to 508 meters	1:240 & 1:600

Final Status: Casing ran / abandoned

Rig Release: 0600 Hrs, March 4, 2000

AEC (WEST) RENAISSANCE CARCAJOU P-16

GEOLOGICAL MARKERS

K.B. 90.7 meters

Formation	Prognosis		Samples		Logs	
	Depth (m)	Subsea (m)	MD (m)	Subsea (m)	MD (m)	Subsea (m)
<u>Cretaceous</u>	24.7	66.0	np	np	np	np
<u>Devonian</u>						
Imperial	303.7	-213.0	308.0	-217.3	308.0	-217.3
Canol	502.7	-412.0	504.0	-413.3	508.0	-417.3
Kee Scarp	507.7	-417.0	508.0	-417.3	513.0	-422.3
Hare Indian	624.7	-534.0	637.0	-546.3	637.5	-546.8
Total Depth	675.7	-585.0	669.0	-578.3	668.9	-578.2

AEC (WEST) RENAISSANCE CARCAJOU P-16

DAILY PROGRESS SUMMARY

Date	Costs	Depth @ 2400 Hrs.	Progre ss (meters)	ROP	Formation	Operation	Operations Summary
2/24/00	\$549,203	27	27	2.3	Cretaceous	Run in hole	Drill 411mm conductor hole. Circulate. Pull out of hole. Run 340mm Conductor barrel. Circulate. Cement conductor. WOC. Rig in diverter. Make up & run in hole with 311mm bit.
2/25/00	\$629,495	136	109	11.5	Cretaceous	WOC	Pressure test. Drill out cement. Spud well @ 0315 Hrs. Drill ahead & survey. Wiper trip. Drill to 136m. Circulate. Pull out of hole. Rig to & run 244mm casing. Circulate. Rig to & cement casing. WOC.
2/26/00	\$660,420	191	55	15.7	Cretaceous	Drill	WOC. Nipple up & pressure test. Run in hole. Pressure test. Drill out cement @ 1930 Hrs. Drill 222mm hole.
2/27/00	\$687,921	442	251	11.5	Imperial	Drill	Drill ahead & survey.
2/28/00	\$811,599	508	66	5.9	Canol	Run casing	Drill ahead & survey to 481m. Wiper trip. Control drill ahead to 508m. Wiper trip. Circulate. Pull out of hole. Rig to & run 177.8mm casing.
2/29/00	\$855,150	508	0		Canol	Circulate	Run casing. Rig to & cement casing. WOC. Nipple up & pressure test. Drill out @ 2215 hrs. Circulate & displace hole to mud.
3/1/00	\$894,794	552	44	4.2	Kee Scarp	Drill	Circulate. Drill ahead. Circulate. Pull out of hole to core. Pick up & make up core barrel. Run in hole. Circulate. Cut 9.0 meters core. Pull out & recover core. Run in hole. Drill ahead.
3/2/00	\$925,044	648	96	4.2	Hare Indian	Drill	Drill ahead & survey.

AEC (WEST) RENAISSANCE CARCAJOU P-16

Date	Costs	Depth @ 2400 Hrs.	Progre ss (meters)	ROP	Formation	Operation	Operations Summary
3/3/00	\$1,025,904	669	21	3.8	Hare Indian	Cement	Drill to T.D. Circulate. Wiper trip. Circulate. Pull out of hole to log. Rig in & log with Schlumberger. Lay down drill string. Rig to & run production casing. Circulate. Rig in & cement casing.
3/4/00	1,025,904	669	0		Hare Indian	Rig release	Set casing slips. Cut off casing. Tear out rig. Release rig @ 0600 Hrs. Move rig to Carcajou O-74 location

AEC (WEST) RENAISSANCE CARCAJOU P-16

MUD RECORD

Mud up @ 481 meters

Date	Depth (m)	Density (kg/m3)	Viscosity (s/l)	pH	Water Loss
2/29/00	527	1120	44	9.0	14.0
3/1/00	573	1080	45	9.0	9.0
3/2/00	650	1090	60	9.0	9.0
3/3/00	669	1100	45	9.0	9.0

AEC (WEST) RENAISSANCE CARCAJOU P-16

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		
1A	SDGH	444	27	27	12.0	4000	100	2	E	1	2.3	Conductor
2A	FDT	311	136	109	9.5	8000	200	2	E	1	11.5	Sur Casing
1	FDS+2	222	508	372	33.0	10000	120	3	E	1	11.3	Int Casing
2	XR20TY	156	527	19	4.8	8000	75	1	1	1	4.0	Trip for Core
2RR	XR20TY	156	669	142	34.0	8000	75	3	2	2	4.2	Trip for T.D.

AEC (WEST) RENAISSANCE CARCAJOU P-16

OPEN HOLE LOG SUMMARY

RUN 1

Logging Company: Schlumberger **Engineer:** Sean McConkey
District: Norman Wells **Truck No.:** 8416
Circulation Ended: 0750 Hrs. 00/03/03 **Finish Trip:** 1000 Hrs. 00/03/03
On Location: 2230 Hrs. 00/03/03 **Off Location:** 1830 Hrs. 00/03/03
Rig Up: 1000 Hrs. 00/03/03 **Rig Down:** 1645 Hrs. 00/03/03
Mud Properties: **Mud Type:** Gel Chem **BHT:** 35.0°C
 Density: 1110 **Rmf:** 1.32 @ 18.0 °C
 Viscosity: 70
 WL: 9.0
 pH: 9.0

Services:

<i>Log</i>	<i>Interval Logged</i>	<i>Meters Logged</i>	<i>Comments</i>
CNL-LDT-DLL	669.0 to 508.0	161.0	1:240 & 1:600
BHCS-GR	669.0 to 508.0	161.0	1:240 & 1:600

Times:

<i>Tool Combo</i>	<i>Date</i>	<i>Start In</i>	<i>First on Bottom</i>	<i>Last on Bottom</i>	<i>Clear Hole</i>	<i>Total Hours</i>
CNL-LDT-DLL	00/03/03	1130	na	1200	1330	2.00
BHCS-GR	00/03/03	1400	na	1550	1645	2.75

Logging Time: 4.75 Hours **Rig Up/Down:** 2.75 Hours
Time Losses: 0 Hours **Total Logging Time:** 7.50 Hours

Remarks: Compensated Neutron logged to surface. Poor Satellite communications prevented lognets from being sent from location. Good job. Fast, friendly & proficient service.

AEC (WEST) RENAISSANCE CARCAJOU P-16

CORE REPORT

Core #1

Company: Baker Inteq

Coring Supervisor: R. Rooney

Formation: Kee Scarp

Interval: 527.6m to 536.6m

Cut: 9.0 meters

Recovered: 9.0 meters

Core Times

From	To	Time	From	To	Time
527.6	527.8	5.0	532.6	532.8	2.0
527.8	528.0	5.0	532.8	533.0	1.5
528.0	528.2	3.0	533.0	533.2	2.0
528.2	528.4	4.0	533.2	533.4	1.5
528.4	528.6	8.5	533.4	533.6	1.5
528.6	528.8	2.5	533.6	533.8	2.0
528.8	529.0	1.5	533.8	534.0	2.0
529.0	529.2	1.5	534.0	534.2	2.0
529.2	529.4	2.0	534.2	534.4	2.0
529.4	529.6	2.0	534.4	534.6	1.5
529.6	529.8	1.5	534.6	534.8	2.0
529.8	530.0	1.5	534.8	535.0	2.0
530.0	530.2	1.5	535.0	535.2	1.5
530.2	530.4	1.5	535.2	535.4	1.5
530.4	530.6	1.5	535.4	535.6	1.5
530.6	530.8	1.5	535.6	535.8	1.5
530.8	531.0	1.5	535.8	536.0	1.5
531.0	531.2	2.0	536.0	536.2	2.0
531.2	531.4	2.0	536.2	536.4	2.0
531.4	531.6	1.5	536.4	536.6	1.5
531.6	531.8	1.5			
531.8	532.0	1.5			
532.0	532.2	1.5			
532.2	532.4	2.0			
532.4	532.6	1.5			