APPROVAL TO DRILL A WELL

National Energy Board

Office national de l'énergie

Exploratory ☒ Delineation ☒

Development ☐ 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: ANADARKO ARROWHEAD RIVER J-74

Operator: ANADARKO CANADA ENERGY — Drilling Program No.:

Contractor: AKITA DRILLING LTD. — Interest Identifier:

Drilling Rig or Unit: 15 — Estimated Well Cost: $ 1,000,000

Location-Unit: J — Section: 74 — Grid: 60 40 122 45

Coordinates: Lat.: 60 33 35.4 N — Long.: 122 58 53.1 W

Area: ARROWHEAD, NWT — Field / Pool:

Elevation-KB/RT: 517.0 (ASL) — GL / Seafloor: 512.51

Approx. Spud Date: FEBRUARY 28, 2003 — Est. Days on Location: 7

Anticipated Total Depth: 800 m — Target: CHINKEH

EVALUATION PROGRAM

Ten-metre sample: 1 set in plastic jar - unwashed and wet for geochem purposes

Five-metre sample: NEB: 2 SETS OF VIALS WASHED & DRIED; 1 BAG WASHED & DRIED

Canned sample intervals: ACE: 1 SET OF VIALS WASHED & DRIED

Conventional cores at:

Logs and Tests: AIT/GR/CNL/LDT/SONIC/DAC

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m KB)	Cementing
508 mm			+/- 20m	Pressure Cemented
219.1	35.7	J55	+/-200m	
139.7	20.8	K55	+/-800 m	

B.O.P. Equipment: 279.4 mm x 21 mPA BOP STACK (1-DOUBLE-PIPE AND BLIND, 1-ANNULAR)
1 - 21 mPA x 76 mm CHOKE MANIFOLD

Other Information:

Signed: Responsible Officer — Title: DRILLING MANAGER

Name: Dave Brown — Company: ANADARKO CANADA ENERGY

Date: 2/4/03 — Phone: (403) 231-0232

APPROVAL

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

Date: Feb. 20/03 — Signed: for / Chief Conservation Officer

File: 9211-A069-6-2

WID: 1987

UWI: 300J746040122450

Canada

END OF WELL REPORT

Anadarko Canada Corporation

N.E.B. COPY

Anadarko SW Arrowhead J-74 – End of Well Report

60° 33' 35.4" N, 122° 58' 53.1" E
May 2003

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- Well Summary

Appendices:

1. Drilling Operations Summary and Daily Drilling Reports
2. Final Wellbore Surveys
3. Completions Operations Summary
4. Well Testing Results

Introduction

Anadarko Arrowhead River J-74 was a vertical exploration well targeting the Chinkeh formation. It was drilled as part of Anadarko Canada Corporation's 2002-2003 winter drilling program near Fort Liard, NWT.

Drilling encountered tight Chinkeh sands that were fracture stimulated and tested 1.2 E3m3/d. The test proves regional gas charge in the Chinkeh

General Well Data

Well Name:	Anadarko Arrowhead River J-74

Key Drilling Data

Rig:	Akita #15
Ground Elevation:	513.51m
KB	517.00m
TD	824m KB
Spud	Mar 10, 2003
RR	Mar 16, 2003 (Well completed with rig)
Surface Hole:	311mm
Surface Casing	219mm @ 240m KB
Production Casing	139.7mm @ 824m KB
Terminal Hole	200mm, cased hole
Mud	gel chem
Tests	

Key Completion Data

Completion Date	Mar 19, 2003 – Mar 28, 2003
Production String	73.0mm tubing
Stimulations	10 tonne gelled methanol-CO2 frac with 30/50 proppant
Production Tests	36 hour main flow, final rate 1.2 E3m3/d
Gas Analysis	pending (H2S = 0 field)
Water Analysis	did not return all frac fluid

See Appendix 1 for drilling details and Appendix 3 for completions details.

Summary of Drilling & Completions Operations

See Appendix 1 for drilling summary and drilling and completions daily reports.

Geological and Palaeontological Information

Sample Frequency	5 meters (240 m - 824 m)
Distribution	4 sets of vials, 1 set of bags
Location	2 sets of vials and 1 set of bags to GSC, 3303 33rd Street N.W., Calgary, AB T2L 2A7 1 set retained by Anadarko Canada
Core	None
Lithology	Refer to the well Geological Report
Biostratigraphic Data	None

Directional Summary

Surface Location: 60° 33' 35.4" N, 122° 58' 53.1" E
Bottom Hole Location: 3.37mN, 9.72mW of surface location
Maximum Angle: 5.06°
Vertical Section: 10.29m
Azimuth: 289.1°

See Appendix 2 for detailed surveys and diagram.

Reservoir and Well Evaluation

Production Tests

The J74 well was drilled in March 2003. The well TD'd at 824mKB, was logged, then 139.7mm production casing was run and cemented. There were no unusual drilling events.

The Chinkeh section was wireline perforated over the intervals 690-92, 695.5-97, 698-700 mKB, yielding no response on perforating. Following installation of a 73mm tubing string, the zone was fracture stimulated using a gelled methanol-CO2 frac and 10 tonnes of 30/50 sand. The zone was stopcocked without making appreciable gas.

Eventually a small gas rate was established and recorders were run. The well was flowed for 2 hours at about 3 E3m3/d then shut in for a 12 hour buildup. The well was flowed on a 36 hour main flow which saw the production decline from 6 E3m3/d at 70 kPa to 1.2 E3m3/d at 10 kPa. The well was shut in.

A total of 3.2 E3m3 gas and 9.6m3 water (15.4m3 under load) was produced during the test.

See Appendix 4 for production test data.

Reservoir Pressure

Bottomhole recorders will not be recovered until June 2003. As the zone was tight, no attempt will be made to asses its pressure until recorder data is available.

Pressure Transient Analysis

Pressure data available June 2003.

Wireline Logging

Open hole logs previously submitted.

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Arrowhead River J-74

- Move in and rig up Akita #15 on J-74 location on March 9, 2003.
- Spud surface hole at 04:00 on March 10, 2003.
- Drill 311 mm surface hole, with Water Based Mud (visc. 60, pH 10, density 1130 kg/m3), to 240 mMD. Mud rings, tight spots. No other problems.
- Set 20 joints 219 mm 35.7 kg/m K-55 ST&C casing with 20 tonne 0:1:0 Class "G" cement + 3% CaCl2 at 1895 kg/m3.
- Perform casing pressure test: 1400 kPa low 14000 kPa high 10 minutes each.
- Drill out shoe, drill to 243 mMD and perform Leak off test. Equivalent mud weight 2446 kg/m3.
- Drill 200 mm main hole, with Water Based Mud (visc. 45, pH 10, density 1050 kg/m3), to 824 mMD. Tight spots, bridges. No other problems.
- Run Gyro deviation survey.
- Run wireline to log. Run GR/AIT/CNL/LDT/BHCS/CAL.
- Set 64 joints 139.7 mm 20.8 kg/m3 J-55 ST&C casing with 19 tonne Thixmix II + 0.3% CFL3 + 1% CaCl2.
- Perform casing pressure test: 10500 kPa for 10 minutes.
- Rig down and move out Akita #15 on March 17, 2003.

Casing and Cementing Report

Well Name	ANADARKO ARROWHEAD RIVER J-74		**Well License Number**	1987	
Event	ORIG DRILLING	09/03/03	**Well License Date**	20/02/03	
Objectives	EXPLORATORY DRILLING		**Field**	CHINKEH	
Rig Name & No.	AKITA	15	**Event Final TMD / TVD**	824.00 m	/ 824.00 m
KB Elev.	517.00 m		**Sidetrack KO Depth / PB Depth**	0.00 m	/ 0.00 m
KB to GL	4.78 m	**Deviation** V	**Event Final Well Plug Back Depth/PBTVD**	0.00 m	/ 0.00 m

Component Information	Depth	Equipment Diagram	Cement Interval
19 - CASING JOINT(S) - IPSCO - 225.730 m			
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.370 m	225.73 m		
			0.00 m - 240.00 m
1 - CASING JOINT(S) - IPSCO - 13.450 m	226.10 m		0.00 m - 824.00 m
1 - CASING FLOAT SHOE - WEATHERFORD - 0.450 m	239.55 m		
	240.00 m		
	824.00 m		

String Details

ANADARKO ARROWHEAD RIVER J-74 **ORIG DRILLING** **10/03/03** **16/03/02**

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	11/03/03	INSTALLED	240.0 m	240.0 m		0.0 m

SURFACE CASING **Status:** INSTALLED **Install Date:** 11/03/03 **String Length:** 240.0 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
19	CASING JOINT(S)	225.730 m	202.49 mm	219.08 mm	K55	35.72 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.370 m	202.49 mm	219.08 mm	K55	35.72 kg/m	225.73 m
1	CASING JOINT(S)	13.450 m	202.49 mm	219.08 mm	K55	35.72 kg/m	226.10 m
1	CASING FLOAT SHOE	0.450 m	0.00 mm	19.05 mm	K55	35.72 kg/m	239.55 m

Cement Data

ANADARKO ARROWHEAD RIVER J-74 ORIG DRILLING 10/03/03 16/03/03

Job Type: Primary Date: 12/03/03 Contractor: SANJEL

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
STAGE 1	TAIL	NEAT + 3% CAC	CLASS G	0.00 m	240.00 m	15.5 m³

Job Type: Primary Date: 16/03/03 Contractor: SANJEL

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	LEAD	THIXMIX II	CLASS G	0.00 m	824.00 m	17.[illegible] m³

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 10/03/2003
Event Name: ORIG DRILLING Start: 09/03/2003 End: 16/03/2003
Contractor Name: AKITA Rig Release: 16/03/2002 Group:
Rig Name: AKITA Rig Number: 15

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
09/03/2003	23:59 - 08:00	8.02	22	F	RDMO	WAIT ON DAYLIGHT TO MOVE TO J-74 F/ M-35
	08:00 - 08:15	0.25	21	A	RDMO	HOLD SAFETY MEETING W/ RIG MOVERS AND CREW
	08:15 - 15:30	7.25	24	B	RDMO	MOVE AND SPOT RIG F/ M-35 TO J74 TRUCKS OFF LOC. @ 18:00
	15:30 - 20:30	5.00	01	A	RDMO	RIG UP
	20:30 - 22:30	2.00	23	C	PRPSPD	WELD ON DIVERTER FLANGE
	22:30 - 23:59	1.48	14	A	PRPSPD	NIPPLE UP DIVERTER
10/03/2003	23:59 - 03:30	3.52	01	A	MIRU	RIG UP, 100% RIGGED UP AT 03:30
	03:30 - 03:45	0.25	21	A	PRPSPD	PRE SPUD SAFETY MEETING
	03:45 - 04:00	0.25	15	A	PRPSPD	PRESSURE TEST DIVERTER 1000 KPA FOR 10 MINUTES
	04:00 - 07:45	3.75	02	B	DRLSUR	DRILL 311MM HOLE FROM 0 M TO 43M
	07:45 - 08:00	0.25	10		DRLSUR	SURVEY @ 30 M .25 DEGREE
	08:00 - 08:30	0.50	06	H	DRLSUR	WORK MUD RING WIPER TRIP
	08:30 - 09:15	0.75	02	B	DRLSUR	DRILL 311 MM HOLE F/ 43 M TO 61 M
	09:15 - 10:15	1.00	03	A	DRLSUR	WORK PIPE CLEAN GRAVEL
	10:15 - 11:00	0.75	02	B	DRLSUR	DRILL 311MM HOLE F/ 61M TO 70M
	11:00 - 11:15	0.25	07	A	DRLSUR	RIG SERVICE
	11:15 - 11:30	0.25	02	B	DRLSUR	SURVEY @ 57M .50 DEGREE
	11:30 - 13:00	1.50	02	B	DRLSUR	DRILL 311 HOLE F/ 70 M TO 103M
	13:00 - 13:15	0.25	10		DRLSUR	SURVEY @ 90M .75 DEGREE
	13:15 - 16:00	2.75	02	B	DRLSUR	DRILL 311 HOLE F/ 103M TO 112M
	16:00 - 16:15	0.25	07	A	DRLSUR	RIG SERVICE
	16:15 - 18:30	2.25	02	B	DRLSUR	DRILL 311 HOLE F/ 112M TO 130M
	18:30 - 18:45	0.25	10		DRLSUR	SURVEY @ 117M .25 DEGREE
	18:45 - 21:00	2.25	02	B	DRLSUR	DRILL 311MM HOLE F/ 130M TO 158M
	21:00 - 21:15	0.25	10		DRLSUR	SURVEY @ 145M .25 DEGREE
	21:15 - 23:59	2.73	02	B	DRLSUR	DRILL 311MM HOLE F/ 158M TO 186M
11/03/2003	23:59 - 00:15	0.27	10		DRLSUR	SURVEY @ 173M 1 DEGREE
	00:15 - 03:45	3.50	02	B	DRLSUR	DRILL 311MM HOLE F/186M TO 205M
	03:45 - 04:00	0.25	07	A	DRLSUR	RIG SERVICE
	04:00 - 04:15	0.25	10	B	DRLSUR	SURVEY @ 192M .25 DEGREE
	04:15 - 05:00	0.75	02	B	DRLSUR	DRILL 311MM HOLE F/ 205M TO 212M
	05:00 - 05:30	0.50	05	K	DRLSUR	CIR BTTMS UP
	05:30 - 08:45	3.25	06	A	DRLSUR	POOH W/ FLOW CHECKS PUMP OUT F/ 160M TO 110 M 89M TO 50M SLM NO CORRECTION
	08:45 - 09:15	0.50	06	A	DRLSUR	M/U BIT RIH TO 70 M
	09:15 - 11:15	2.00	03	A	DRLSUR	WASH AND REAM F/ 70 M TO 212M
	11:15 - 13:15	2.00	02	B	DRLSUR	DRILL 311MM HOLE F/ 212M TO 240M
	13:15 - 13:45	0.50	05	A	DRLSUR	CIR HOLE CLEAN
	13:45 - 14:00	0.25	10		DRLSUR	SURVEY @229M .75 DEGREE
	14:00 - 16:30	2.50	06	G	DRLSUR	BLOW KELLY FLOW CHECK POOH TO RUN CASG HOLE PULLING TIGHT PUMP OUT F/240 M TO 79M POOH
	16:30 - 17:00	0.50	06	H	DRLSUR	RIH TO 79M
	17:00 - 18:15	1.25	03	A	DRLSUR	WASH F/ 79M TO 240M 7 M FILL
	18:15 - 21:15	3.00	05	F	DRLSUR	CIR CONDITION MUD AND HOLE
	21:15 - 22:30	1.25	06	G	DRLSUR	BLOW KELLY FLOW CHECK POOH W/ FLOW CHECKS
	22:30 - 22:45	0.25	21	A	DRLSUR	HOLD SAFTY MEETING W/ TONG HAND AND

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 10/03/2003
Event Name: ORIG DRILLING Start: 09/03/2003 End: 16/03/2003
Contractor Name: AKITA Rig Release: 16/03/2002 Group:
Rig Name: AKITA Rig Number: 15

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
11/03/2003	22:30 - 22:45	0.25	21	A	DRLSUR	CREW
	22:45 - 23:59	1.23			DRLSUR	M/U FLOAT 1 X JT 219MM 35.7 KG/M CASG F/C 2 X JTS CASG
12/03/2003	23:59 - 01:15	1.27	12	A	DRLSUR	RUN 20 JTS 219.1MM 35.7 KG/M K-55 CSG. LAND OUT AT 240M.
	01:15 - 03:00	1.75	05	H	DRLSUR	CIRCULATE AND CONDITION MUD FOR CEM ENT JOB
	03:00 - 03:15	0.25	21	A	DRLSUR	PRE CEMENT JOB SAFETY MEETING
	03:15 - 04:15	1.00	12	C	DRLSUR	CEMENT CASING WITH 20 TONNE CLASS G + 3% CACL2. DISPLACE CEMENT WITH 7.2M 3 WATER. BUMP PLUG 3500 KPA OVER CIRC PRESS. BLEED BACK, FLOATS HELD.
	04:15 - 08:30	4.25	13		DRLSUR	WAIT ON CEMENT
	08:30 - 08:45	0.25	14	B	DRLSUR	CUT CONDUCTOR AND CASG
	08:45 - 09:00	0.25	14	A	DRLSUR	HOLD SAFETY MEETING ON L/D DIVERTER
	09:00 - 09:30	0.50	14	A	DRLSUR	L/D DIVERTER
	09:30 - 14:15	4.75	14	B	DRLSUR	MAKE FINAL CUT ON CASG WELD ON 279.4 MM X 21 MPA CAMERON CASG BOWLCOOL B OWL TEST TO 7000KPA OK
	14:15 - 14:30	0.25	21	A	DRLSUR	SAFETY MEETING ON NIPPLE UP BOP REVI EW J.S.A.
	14:30 - 16:00	1.50	14	B	DRLSUR	NIPPLE UP BOPS
	16:00 - 16:15	0.25	21	A	DRLSUR	SAFETY MEETING W/ PRESSURE TESTER
	16:15 - 18:45	2.50	15	B	DRLSUR	PRESSURE TEST W/ INLAND CK /MANIFOLD STABBING VALVE INSIDE BOP 1400 KPA AN D 14000 KPA TEST BLIND RAMS HCR MANUA L HCR INSIDE KILL LINE AND CASG TO 140 0 KPA AND 16000 KPA ALL TESTS 10 MIN A LL OK
	18:45 - 20:15	1.50	06	A	DRLSUR	MAKE UP BHA AND RIH
	20:15 - 22:00	1.75	15	A	DRLSUR	PRESSURE TEST OUTSIDE KILL LINE VALVE , INSIDE KILL LINE VALVE, CHECK VALVE, HYDRIL LOWER KELLY VALVE, UPPER KELL Y VALVE, PIPE RAMS, LOW 1400 KPA- HIGH 14000 KPA, 10 MINUTES EACH, FUNCTION MOTOR KILLS
	22:00 - 22:15	0.25	21	B	DRLSUR	HELD BOP DRILL W/ CREW
	22:15 - 22:30	0.25	07	A	DRLSUR	RIG SERVICE, FUNCTION ANNULAR
	22:30 - 23:45	1.25	02	B	DRLSUR	DRILL OUT CEMENT PLUG, FLOAT COLLAR AND FLOAT SHOE
	23:45 - 23:59	0.23	05	A	DRLSUR	CIRCULATE HOLE CLEAN
13/03/2003	00:00 - 00:15	0.25	15	C	DRLPRO	PERFORM L.O.T., 24KPA/M, 2446KG/M3 EQU IV MUD WT
	00:15 - 02:45	2.50	02	B	DRLPRO	DRILL 200MM HOLE F/243M TO 281M
	02:45 - 03:00	0.25	10		DRLPRO	SURVEY @ 268 M.
	03:00 - 04:45	1.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 281 - 319 M.
	04:45 - 05:00	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 3 SE CONDS TO CLOSE
	05:00 - 05:15	0.25	10		DRLPRO	SURVEY @ 306 M.
	05:15 - 05:45	0.50	02	B	DRLPRO	DRILL 200 MM HOLE F/ 319 - 329 NM.
	05:45 - 06:00	0.25	10		DRLPRO	SURVEY @ 313 M.
	06:00 - 08:00	2.00	02	B	DRLPRO	DRILL 200 MM HOLE F/ 329 - 367 M.
	08:00 - 08:15	0.25	21	A	DRLPRO	SAFETY MEETING, BOP DRILL, WELL SECU

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 10/03/2003
Event Name: ORIG DRILLING Start: 09/03/2003 End: 16/03/2003
Contractor Name: AKITA Rig Release: 16/03/2002 Group:
Rig Name: AKITA Rig Number: 15

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
13/03/2003	08:00 - 08:15	0.25	21	A	DRLPRO	RE IN 90 SECONDS
	08:15 - 09:00	0.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 367 - 395 M.
	09:00 - 09:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 8 SECONDS
	09:15 - 15:00	5.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 395 - 535 M.
	15:00 - 16:00	1.00	10		DRLPRO	SURVEYS (ACCUMULATED TIME)
	16:00 - 22:45	6.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 535 - 691 M.
	22:45 - 23:00	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 3 SECONDS
	23:00 - 23:15	0.25	10		DRLPRO	SURVEY @ 678 M.
	23:15 - 00:00	0.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 691 - 701 M.
14/03/2003	00:00 - 00:30	0.50	02	B	DRLPRO	DRILL 200 MM HOLE F/ 701 - 702 M.
	00:30 - 01:00	0.50	05	K	DRLPRO	CIRCULATE HOLE CLEAN , SAMPLE.
	01:00 - 03:15	2.25	06	A	DRLPRO	FLOW CHECK, PUMP PILL, TRIP OUT FOR BIT. SLM. STRAP: 697.29 / TALLEY: 697.61 M. DIFF: .32 M. HOLE FILL: CALCULATED ; 3.59 M3 / MEASURED: 3.68 M3 PDC BIT : M474YPX CONDITION: 8 CHIPPED, 3 BROKE CUTTERS ON BOTTOM HEEL & GUAGE ROWS, 4 CUTTERS ON BOTTOM W/ 50% FLAT WEAR
	03:15 - 03:30	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 3 SECONDS
	03:30 - 04:00	0.50	06	A	DRLPRO	MAKE UP TRI-CONE INSERT BIT, RUN IN BHA.
	04:00 - 05:00	1.00	09		DRLPRO	SLIP AND CUT DRILLING LINE.
	05:00 - 10:00	5.00	06	A	DRLPRO	RUN IN HOLE W/ BIT, REAM BRIDGES @ 304 , 323, 340 M. RIH TO 449 M. REAM BRIDGES F/ 449 - 702 M.
	10:00 - 10:30	0.50	02	B	DRLPRO	DRILL 200 MM HOLE F/ 702 - 704 M.
	10:30 - 10:45	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 8 SECONDS TO CLOSE
	10:45 - 18:00	7.25	02	B	DRLPRO	DRILL 200 MM HOLE F/ 704 - 749 M.
	18:00 - 18:15	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 2 SECONDS TO CLOSE
	18:15 - 00:00	5.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 749 - 794 M.
15/03/2003	00:00 - 00:30	0.50	02	B	DRLPRO	DRILL 200 MM HOLE F/ 794 - 797 M.
	00:30 - 00:45	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 9 SECONDS
	00:45 - 04:00	3.25	02	B	DRLPRO	DRILL 200 MM HOLE F/ 797 - 824 M. TOTAL DEPTH.
	04:00 - 04:45	0.75	05	K	DRLPRO	CIRCULATE BOTTOM HOLE SAMPLE, CONDITION HOLE
	04:45 - 05:15	0.50	10		DRLPRO	SURVEY @ 812 M.
	05:15 - 05:45	0.50	05	K	DRLPRO	CIRCULATE, CONDITION HOLE
	05:45 - 07:30	1.75	06	H	DRLPRO	FLOW CHECK, PUMP PILL, WIPER TRIP TO CASING SHOE. FLOW CHECKS @ 812, 430, 240 M. HOLE TIGHT @ 678, 564 - 544 M. HOLE DRAG UP TO 12000 DAN
	07:30 - 09:00	1.50	06	H	DRLPRO	RUN IN HOLE, WASH TO BOTTOM F/ 802 - 824 M.
	09:00 - 10:00	1.00	05	K	DRLPRO	CIRCULATE, CONDITION HOLE
	10:00 - 11:30	1.50	06	H	DRLPRO	FLOW CHECK, WIPER TRIP 15 STANDS TO 5

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 — Spud Date: 10/03/2003
Event Name: ORIG DRILLING — Start: 09/03/2003 — End: 16/03/2003
Contractor Name: AKITA — Rig Release: 16/03/2002 — Group:
Rig Name: AKITA — Rig Number: 15

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
15/03/2003	10:00 - 11:30	1.50	06	H	DRLPRO	00 M. FLOW CHECKS @ 824, 716 M. HOLE GOOD
	11:30 - 12:45	1.25	05	D	DRLPRO	CIRCULATE, CONDITION HOLE FOR LOGGIN G.
	12:45 - 13:00	0.25	10	K	DRLPRO	PUMP GYRO SURVEY TOOL
	13:00 - 15:45	2.75	06	C	DRLPRO	FLOW CHECK, PUMP PILL, TRIP OUT TO LO G. FLOW CHECKS: 824, 716, 401, 136, OU T OF HOLE. HOLE FILL: CALCULATED: 3.9 M3 / MEASURED: 4.62 M3
	15:45 - 16:00	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 3 SECONDS TO CLOSE
	16:00 - 16:15	0.25	21	A	DRLPRO	SAFETY MEETING W/ TUCKER WIRELINE
	16:15 - 19:30	3.25	11	A	DRLPRO	RIG UP AND LOG WELL W/ TUCKER: RUN 1: GRT-CNT-LDT-CSI-PIT-DAC LOGGERS DEP TH: 821 M. @ 17:05 HRS.
	19:30 - 21:00	1.50	06	H	DRLPRO	RUN IN HOLE W/ BIT.
	21:00 - 00:00	3.00	05	K	DRLPRO	CIRCULATE, CONDITION MUD AND HOLE FO R PRODUCTION CASING.
16/03/2003	00:00 - 03:45	3.75	06	G	EVALPR	FLOW CHECK, LAY DOWN DRILL STRING. FL OW CHECKS @ 824, 458, 133, SURFACE
	03:45 - 04:00	0.25	07	A	EVALPR	RIG SERVICE, FUNCTION BLIND RAMS; 3 S ECONDS
	04:00 - 04:15	0.25	21	A	EVALPR	HELD SAFETY MEETING W/ RIG CREW, HILL 'S POWER TONGS
	04:15 - 08:00	3.75	12	A	EVALPR	RIG UP AND RUN PRODUCTION CASING: RA N 64 JOINTS OF 139.7 MM, 20.8 KG/M, J-55, ST&C NEW IPSCO CASING, TOTAL LENGTH : 825.69 M. LANDED ON BOTTOM @ 824.0 M. FLOAT COLLAR @ 810.6 M. MARKER JOI NT: 688.01 - 692.48 M.
	08:00 - 10:15	2.25	12	C	EVALPR	CIRCULATE CASING, CIRCULATE HOLE CLE AN, CONDITION MUD FOR CEMENTING.
	10:15 - 10:30	0.25	21	A	EVALPR	HELD SAFETY MEETING W/ SANJEL. RIG CR EW.
	10:30 - 11:45	1.25	12	C	EVALPR	CEMENT PRODUCTION CASING WITH: 1.0 M 3 WATER + 2.0 M3 VISWEEP AHEAD. 17.1 M3 THIXMIX II + .3 % CFL-3 + 1.0 % CACL2. DISPLACE W/ 10.3 M3 WATER. PLUG DOW N @ 11:22 HRS. 3/16/2003. BUMP PLUG W/ 10500 KPA, HELD PRESSURE 10 MINUTES, BLEED OFF PRESSURE, CHECK FLOATS, HE LD OK. 1.0 M3 GOOD CEMENT RETURNS TO SURFACE.
	11:45 - 13:00	1.25	13		EVALPR	NIPPLE DOWN BOP, SET AUTO SLIPS WITH 17000 DAN TENSION, CUT CASING. TACK WELD PLATE ON CASING STUB.
	13:00 - 00:00	11.00	01	B	EVALPR	CLEAN MUD TANKS, TEAR OUT RIG FOR MO VE TO I-76 ON MARCH 17 /03 RIG RELEASE @ 24:00 HRS. 3/16/2003 WELL STATUS: POTENTIAL CHINKEH GAS WELL

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74			Date: 09/03/2003	Report: 1	DFS:	DOL:	
Event Name: ORIG DRILLING			Spud: 10/03/2003	RR: 16/03/2002			
Rig Name:	AKITA 15	TMD:		TVD:		Progress:	
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BRIAN PREECE 780-499-5890	Rot. Hours:		AV ROP:		Hole Size:	311.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	41,249	Cum Cost:	41,249	AFE Est:	1,496,000	AFE No.:	400797

Current Status: DRILL 311MM HOLE TO 40M

24hr Forecast: TD 311MM HOLE, WIPER TRIP, RUN CASING AND CEMENT

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
23:59 - 08:00	8.02	22	F	PRDMO	WAIT ON DAYLIGHT TO MOVE TO J-74 F/ M-35
08:00 - 08:15	0.25	21	A	PRDMO	HOLD SAFETY MEETING W/ RIG MOVERS AND CREW
08:15 - 15:30	7.25	24	B	PRDMO	MOVE AND SPOT RIG F/ M-35 TO J74 TRUCKS OFF LOC . @ 18:00
15:30 - 20:30	5.00	01	A	PRDMO	RIG UP
20:30 - 22:30	2.00	23	C	PPRPSPD	WELD ON DIVERTER FLANGE
22:30 - 23:59	1.48	14	A	PPRPSPD	NIPPLE UP DIVERTER

DAILY OPERATIONAL COMMENTS(24hr Summary):
MOVE RIG AND WELLSITES FROM M-35 TO J-74, RIG UP RIG, UP DIVERTER, DIVERTER LINES, FLOW LINES, PRE MIX SPUD MUD

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			SURFACE		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 09/03/2003 | Report: 1 | DFS: | DOL:

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump			
Liner			
Stroke			
EFF			
Press			
SPM			
Output			

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+	
Depth		K+	
Temp		Polymer	
Density		CaCl2	
ECD		NaCl	
Viscosity		Sand	
PV		Tot. Solids	
YP		% Oil	
GELS		% H2O	
API WL		Oil/H2O	
HTHP WL		HGSolid	
API FC		LGSolid	
MBT		ES	
Lime		Oil Ret	
pH			
Pm			
Pf/Mf			
Comment1:			

Mud Products

Additive	# Units

Mud Cost

Daily	$0.00
Cumulative	$0.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

BHA Desc.:

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle

Pipe Data

String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

Safety Drills

Last BOP Test (P)	
Last BOP Test (F)	
Last BOP Drill	

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 10/03/2003 | Report: 2 | DFS: 1.00 | DOL: 1.00
Event Name: ORIG DRILLING | Spud: 10/03/2003 | RR: 16/03/2002

Rig Name:	AKITA 15	TMD:	186.00 (m)	TVD:	186.00 (m)	Progress:	186.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BRIAN PREECE 780-499-5890	Rot. Hours:	16.75	AV ROP:	11.10	Hole Size:	311.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	179,756	Cum Cost:	221,005	AFE Est:	1,496,000	AFE No.:	400797

Current Status: DRILL 311MM HOLE TO 212M, POOH

24hr Forecast: TD 311MM HOLE, RUN CSG AND CMT, CUT CSG, NIPPLE UP, P-TEST

Operations Summary

From - To	Hours	Code	Sub Code	Phase		Description of Operations
23:59 - 03:30	3.52	01	A	P	MIRU	RIG UP, 100% RIGGED UP AT 03:30
03:30 - 03:45	0.25	21	A	P	PRPSPD	PRE SPUD SAFETY MEETING
03:45 - 04:00	0.25	15	A	P	PRPSPD	PRESSURE TEST DIVERTER 1000 KPA FOR 10 MINUTES
04:00 - 07:45	3.75	02	B	P	DRLSUR	DRILL 311MM HOLE FROM 0 M TO 43M
07:45 - 08:00	0.25	10		P	DRLSUR	SURVEY @ 30 M .25 DEGREE
08:00 - 08:30	0.50	06	H	P	DRLSUR	WORK MUD RING WIPER TRIP
08:30 - 09:15	0.75	02	B	P	DRLSUR	DRILL 311 MM HOLE F/ 43 M TO 61 M
09:15 - 10:15	1.00	03	A	P	DRLSUR	WORK PIPE CLEAN GRAVEL
10:15 - 11:00	0.75	02	B	P	DRLSUR	DRILL 311MM HOLE F/ 61M TO 70M
11:00 - 11:15	0.25	07	A	P	DRLSUR	RIG SERVICE
11:15 - 11:30	0.25	02	B	P	DRLSUR	SURVEY @ 57M .50 DEGREE
11:30 - 13:00	1.50	02	B	P	DRLSUR	DRILL 311 HOLE F/ 70 M TO 103M
13:00 - 13:15	0.25	10		P	DRLSUR	SURVEY @ 90M .75 DEGREE
13:15 - 16:00	2.75	02	B	P	DRLSUR	DRILL 311 HOLE F/ 103M TO 112M
16:00 - 16:15	0.25	07	A	P	DRLSUR	RIG SERVICE
16:15 - 18:30	2.25	02	B	P	DRLSUR	DRILL 311 HOLE F/ 112M TO 130M
18:30 - 18:45	0.25	10		P	DRLSUR	SURVEY @ 117M .25 DEGREE
18:45 - 21:00	2.25	02	B	P	DRLSUR	DRILL 311MM HOLE F/ 130M TO 158M
21:00 - 21:15	0.25	10		P	DRLSUR	SURVEY @ 145M .25 DEGREE
21:15 - 23:59	2.73	02	B	P	DRLSUR	DRILL 311MM HOLE F/ 158M TO 186M

DAILY OPERATIONAL COMMENTS(24hr Summary):
FINISH RIGGING UP, PRESSURE TEST DIVERTER, DRILL 311MM HOLE TO 186M, SURVEY EVERY 30M

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			SURFACE		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 10/03/2003 | Report: 2 | DFS: 1.00 | DOL: 1.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650	F-650
Liner (mm)	152.0	152.0
Stroke (mm)	203.0	203.0
EFF	90.0	90.0
Press (kPa)	5,400	5,410
SPM	104	107
Output (L/mi	1,034.36	1,064.19

Velocities

Drill Pipe	(m/min)	30.9
Drill Collar	(m/min)	37.1
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM				
Time	80000 / OTH		Ca+	(mg/L)	
Depth	(m)	148.00	K+	(mg/L)	
Temp	(°C)	20	Polymer	(kg/m³)	
Density	(kg/m³)	1,130	CaCl2	(%)	
ECD	(kg/m³)		NaCl	(%)	
Viscosity	(s/l)	60	Sand	(%)	
PV	(mPa*s)		Tot. Solids		
YP	(Pa)		% Oil		
GELS	(Pa)		% H2O		
API WL	(mL)		Oil/H2O		
HTHP WL	(mL)		HGSolid	(kg/m³)	
API FC	(mm)		LGSolid	(kg/m³)	
MBT	(kg/m³)		ES	(mV)	
Lime	(kg/m³)		Oil Ret	(%)	
pH		10.00			
Pm	(cm³)				
Pf/Mf	(cm³ / cm³				

Comment1:

Mud Products

Additive	# Units
BARAZAN D PLU	1
BARAFOS	3
CAUSTIC	1
DETERGENT	6
SODA ASH	1
AQUAGEL	96

Mud Cost

Daily	$1,629.38
Cumulative	$1,629.00

Bit Data

Bit No.		
Run		
Size		
Manu.		
Type		
Serial No.		
TFA		
Depth In		
Depth Out		
Cum. Depth		
Cum. Hours		
WOB (Min)		
WOB (Max)		
RPM (Min)		
RPM (Max)		
Cond (IODL)		
Cond (BGOR)		
Jets 1/2/3		
Jets 4/5/6		

BHA Desc.:

Item	No	Length	OD	ID	O.Size	C.Type	P/B	Kg/m	B.Angle

Pipe Data

String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

Safety Drills

Last BOP Test (P)	10/03/03
Last BOP Test (F)	10/03/03
Last BOP Drill	10/03/03

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
0.00	0.000	0.000	0.00	0.00	0.00	0.00	0.00	0.00
30.00	0.250	0.000	30.00	0.07	0.00	0.07	0.25	0.25
57.00	0.500	0.000	57.00	0.24	0.00	0.24	0.28	0.28
90.00	0.750	0.000	90.00	0.60	0.00	0.60	0.23	0.23
117.00	0.250	0.000	117.00	0.84	0.00	0.84	0.56	-0.56
145.00	0.250	0.000	145.00	0.96	0.00	0.96	0.00	0.00

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 11/03/2003 | Report: 3 | DFS: 2.00 | DOL: 2.00
Event Name: ORIG DRILLING | Spud: 10/03/2003 | RR: 16/03/2002

Rig Name:	AKITA 15	TMD:	240.00 (m)	TVD:	240.00 (m)	Progress:	54.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BRIAN PREECE 780-499-5890	Rot. Hours:	6.25	AV ROP:	8.64	Hole Size:	311.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:		Shoe TMD:		Shoe TVD:	
Daily Cost:	59,858	Cum Cost:	280,863	AFE Est:	1,496,000	AFE No.:	400797

Current Status: WOC

24hr Forecast: RUN AND CMT CSG NIPPLE UP TEST BOP DRILL OUT LOT DRILL AHEAD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
23:59 - 00:15	0.27	10	P	DRLSUR	SURVEY @ 173M 1 DEGREE
00:15 - 03:45	3.50	02	B P	DRLSUR	DRILL 311MM HOLE F/186M TO 205M
03:45 - 04:00	0.25	07	A P	DRLSUR	RIG SERVICE
04:00 - 04:15	0.25	10	B P	DRLSUR	SURVEY @ 192M .25 DEGREE
04:15 - 05:00	0.75	02	B P	DRLSUR	DRILL 311MM HOLE F/ 205M TO 212M
05:00 - 05:30	0.50	05	K P	DRLSUR	CIR BTTMS UP
05:30 - 08:45	3.25	06	A P	DRLSUR	POOH W/ FLOW CHECKS PUMP OUT F/ 160M TO 110 M 89M TO 50M SLM NO CORRECTION
08:45 - 09:15	0.50	05	A P	DRLSUR	M/U BIT RIH TO 70 M
09:15 - 11:15	2.00	03	A P	DRLSUR	WASH AND REAM F/ 70 M TO 212M
11:15 - 13:15	2.00	02	B P	DRLSUR	DRILL 311MM HOLE F/ 212M TO 240M
13:15 - 13:45	0.50	05	A P	DRLSUR	CIR HOLE CLEAN
13:45 - 14:00	0.25	10	P	DRLSUR	SURVEY @229M .75 DEGREE
14:00 - 16:30	2.50	06	G P	DRLSUR	BLOW KELLY FLOW CHECK POOH TO RUN CASG HOLE PULLING TIGHT PUMP OUT F/240M TO 79M POOH
16:30 - 17:00	0.50	06	H P	DRLSUR	RIH TO 79M
17:00 - 18:15	1.25	03	A P	DRLSUR	WASH F/ 79M TO 240M 7 M FILL
18:15 - 21:15	3.00	05	F P	DRLSUR	CIR CONDITION MUD AND HOLE
21:15 - 22:30	1.25	06	G P	DRLSUR	BLOW KELLY FLOW CHECK POOH W/ FLOW CHECKS
22:30 - 22:45	0.25	21	A P	DRLSUR	HOLD SAFTY MEETING W/ TONG HAND AND CREW
22:45 - 23:59	1.23		P	DRLSUR	M/U FLOAT 1 X JT 219MM 35.7 KG/M CASG F/C 2 X JTS CASG

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL TO 229 TRIP F/ BIT HOLE TIGHT WASH IN DRILL TO 240M WIPER TRIP HOLE TIGHT PUMP OUT WASH IN CIR CONDITION POOH HOLE GOOD START TO RUN 219 MM CASG

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
			SURFACE		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 11/03/2003 | Report: 3 | DFS: 2.00 | DOL: 2.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650	F-650
Liner (mm)	152.0	152.0
Stroke (mm)	203.0	203.0
EFF	90.0	90.0
Press (kPa)	6,220	6,210
SPM	110	109
Output (L/mi	1,094.03	1,084.09

Velocities

Drill Pipe	(m/min)	30.9
Drill Collar	(m/min)	36.3
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM		
Time	02:00 / OTH	Ca+ (mg/L)	
Depth (m)	240.00	K+ (mg/L)	
Temp (°C)	29	Polymer (kg/m³)	
Density (kg/m³)	1,130	CaCl2 (%)	
ECD (kg/m³)	1,136	NaCl (%)	
Viscosity (s/l)	95	Sand (%)	
PV (mPa*s)	23.0	Tot. Solids	
YP (Pa)	8.1	% Oil	
GELS (Pa)		% H2O	
API WL (mL)	8.0	Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH	9.50		
Pm (cm³)			
Pf/Mf (cm³ / cm³)			

Comment1:

Mud Products

Additive	# Units
BARAZAN D PLU	2
BARAFOS	1
CAUSTIC	2
DETERGENT	1
AQUAGEL	37
SERVICE CALL	1

Mud Cost

Daily	$1,631.57
Cumulative	$3,261.00

Bit Data

Bit No.	2A	1A
Run	2	1
Size (mm)	311.00	311.00
Manu.	Smith	Smith
Type	X1CXP	XGGC
Serial No.	J26052	RRO276
TFA (mm²)	595.7	809.3
Depth In (m)	212.00	212.00
Depth Out (m)	240.00	212.00
Cum. Depth (m)	28.00	26.00
Cum. Hours	2.00	
WOB (Min)(daN)	5	5
WOB (Max)(daN)	8	10
RPM (Min)	150	80
RPM (Max)	180	170
Cond (IODL)	1/1/NO/A	7/7/FC/A
Cond (BGOR)	1/ 1/NO/TD	3/ 1/NO/PR
Jets 1/2/3	15.9/15.9/15.9	14.3/14.3/15.9
Jets 4/5/6		19.2//

BHA Desc.: SURFACE

Item	Jts	Length	OD	ID	C.Size	C.Type	F/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.30	311.00		168.8	REG	P		
Bell Sub	1	0.77	160.00	62.00	114.3	XH	B		
Drill Collar	8	74.42	157.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	36.26	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.80	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	18
Pick-Up Weight	19
Slack Off Weight	18

Safety Drills

Last BOP Test (P)

Last BOP Test (F)

Last BOP Drill

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
173.00	1.000	0.000	172.99	1.27	0.00	1.27	0.80	0.80
192.00	0.250	0.000	191.99	1.47	0.00	1.47	1.18	-1.18
229.00	0.750	0.000	228.99	1.80	0.00	1.80	0.41	0.41

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74		Date:	12/03/2003	Report:	4	DFS: 3.00	DOL: 3.00
Event Name: ORIG DRILLING		Spud:	10/03/2003	RR:	16/03/2002		

Rig Name:	AKITA 15	TMD:	243.00 (m)	TVD:	243.00 (m)	Progress:	3.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BRIAN PREECE 780-499-5890	Rot. Hours:	0.25	AV ROP:	12.00	Hole Size:	200.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:	219.1 (mm)	Shoe TMD:	240.00 (m)	Shoe TVD:	240.00 (m)
Daily Cost:	70,938	Cum Cost:	351,801	AFE Est:	1,496,000	AFE No.:	400797

Current Status: DRILL 200MM HOLE TO 330M

24hr Forecast: DRILL 200MM HOLE TO TD, WIPER TRIP, GYRO, LOG

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
23:59 - 01:15	1.27	12	A	P DRLSUR	RUN 20 JTS 219.1MM 35.7 KG/M K-55 CSG. LAND OUT AT 240M.
01:15 - 03:00	1.75	05	H	P DRLSUR	CIRCULATE AND CONDITION MUD FOR CEMENT JOB
03:00 - 03:15	0.25	21	A	P DRLSUR	PRE CEMENT JOB SAFETY MEETING
03:15 - 04:15	1.00	12	C	P DRLSUR	CEMENT CASING WITH 20 TONNE CLASS G + 3% CACL 2. DISPLACE CEMENT WITH 7.2M3 WATER. BUMP PLUG 3500 KPA OVER CIRC PRESS. BLEED BACK, FLOATS HELD.
04:15 - 08:30	4.25	13		P DRLSUR	WAIT ON CEMENT
08:30 - 08:45	0.25	14	B	P DRLSUR	CUT CONDUCTOR AND CASG
08:45 - 09:00	0.25	14	A	P DRLSUR	HOLD SAFETY MEETING ON L/D DIVERTER
09:00 - 09:30	0.50	14	A	P DRLSUR	L/D DIVERTER
09:30 - 14:15	4.75	14	B	P DRLSUR	MAKE FINAL CUT ON CASG WELD ON 279.4MM X 21 MP A CAMERON CASG BOWLCOOL BOWL TEST TO 7000KPA OK
14:15 - 14:30	0.25	21	A	P DRLSUR	SAFETY MEETING ON NIPPLE UP BOP REVIEW J.S.A.
14:30 - 16:00	1.50	14	B	P DRLSUR	NIPPLE UP BOPS
16:00 - 16:15	0.25	21	A	P DRLSUR	SAFETY MEETING W/ PRESSURE TESTER
16:15 - 18:45	2.50	15	B	P DRLSUR	PRESSURE TEST W/ INLAND CK /MANIFOLD STABBING VALVE INSIDE BOP 1400 KPA AND 14000 KPA TEST BLI ND RAMS HCR MANUAL HCR INSIDE KILL LINE AND CA SG TO 1400 KPA AND 16000 KPA ALL TESTS 10 MIN AL L OK
18:45 - 20:15	1.50	06	A	P DRLSUR	MAKE UP BHA AND RIH
20:15 - 22:00	1.75	15	A	P DRLSUR	PRESSURE TEST OUTSIDE KILL LINE VALVE, INSIDE K ILL LINE VALVE, CHECK VALVE, HYDRIL LOWER KELLY VALVE, UPPER KELLY VALVE, PIPE RAMS, LOW 1400 KPA- HIGH 14000 KPA, 10 MINUTES EACH, FUNCTION MOTOR KILLS
22:00 - 22:15	0.25	21	B	P DRLSUR	HELD BOP DRILL W/ CREW
22:15 - 22:30	0.25	07	A	P DRLSUR	RIG SERVICE, FUNCTION ANNULAR
22:30 - 23:45	1.25	02	B	P DRLSUR	DRILL OUT CEMENT PLUG, FLOAT COLLAR AND FLOAT SHOE
23:45 - 23:59	0.23	05	A	P DRLSUR	CIRCULATE HOLE CLEAN

DAILY OPERATIONAL COMMENTS(24hr Summary):
RUN 240 M OF 219MM 35.7KG/M CSG, CEMENT WITH 20 TONNE OF G +3%CACL2, L/D DIVERTER, NIPPLE UP BOPS, PRESSURE TEST, DRILL OUT FLOAT AND SHOE, CIRCULATE HOLE CLEAN FOR LOT

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,446.7	3,406	1,000.0			Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 12/03/2003 | Report: 4 | DFS: 3.00 | DOL: 3.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650	
Liner (mm)	152.0	
Stroke (mm)	203.0	
EFF	90.0	
Press (kPa)	700	
SPM	100	
Output (L/mi	994.57	

Velocities

Drill Pipe	(m/min)	52.5
Drill Collar	(m/min)	82.5
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:	GEL CHEM		
Time	03:00 / OTH	Ca+ (mg/L)	
Depth (m)	240.00	K+ (mg/L)	
Temp (°C)	20	Polymer (kg/m³)	
Density (kg/m³)	1,130	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)	46	Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH	9.50		
Pm (cm³)			
Pf/Mf (cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
DESCO	1

Mud Cost

Daily	$72.33
Cumulative	$3,333.00

Bit Data

Bit No.	1
Run	3
Size (mm)	200.00
Manu.	GeoDiamond
Type	M474YPX
Serial No.	JS7381
TFA (mm²	237.6
Depth In (m)	240.00
Depth Out (m)	702.00
Cum. Depth (m)	3.00
Cum. Hours	0.25
WOB (Min)(daN)	2
WOB (Max)(daN)	4
RPM (Min)	60
RPM (Max)	80
Cond (IOR)	3/4/CT/H
Cond (BGOR)	D/ I/BT/PR
Jets 1/2/3	7.1/7.1/7.1
Jets 4/5/6	7.1/7.1/7.1

BHA Desc.: PRODUCTION

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.27	200.00	62.00	114.3	XH	P		
Bit Sub	1	1.02	159.00	62.00	114.3	XH	B		
Drill Collar	8	74.75	159.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	36.24	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.60	101.00	62.00	101.6	FH	P		
Drill Pipe	64	610.48	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	19
Pick-Up Weight	20
Slack Off Weight	18

Safety Drills

Last BOP Test (P)	12/03/03
Last BOP Test (F)	12/03/03
Last BOP Drill	12/03/03

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74		Date:	13/03/2003	Report:	5	DFS: 4.00	DOL: 4.00
Event Name: ORIG DRILLING		Spud:	10/03/2003	RR:	16/03/2002		

Rig Name:	AKITA 15	TMD:	701.00 (m)	TVD:	701.00 (m)	Progress:	458.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	20.75	AV ROP:	22.07	Hole Size:	200.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:	219.1 (mm)	Shoe TMD:	240.00 (m)	Shoe TVD:	240.00 (m)
Daily Cost:	32,686	Cum Cost:	384,487	AFE Est:	1,496,000	AFE No.:	400797

Current Status: BIT TRIP, RUNNING IN HOLE.

24hr Forecast: DRILL TO TD, RUN GYRO, POOH, LOG, WAIT ON ORDERS

Operations Summary

From - To	Hours	Code	Sub Code		Phase	Description of Operations
00:00 - 00:15	0.25	15	C	P	DRLPRO	PERFORM L.O.T., 24KPA/M, 2446KG/M3 EQUIV MUD WT
00:15 - 02:45	2.50	02	B	P	DRLPRO	DRILL 200MM HOLE F/243M TO 281M
02:45 - 03:00	0.25	10		P	DRLPRO	SURVEY @ 268 M.
03:00 - 04:45	1.75	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 281 - 319 M.
04:45 - 05:00	0.25	07	A	P	DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 3 SECONDS TO CLOSE
05:00 - 05:15	0.25	10		P	DRLPRO	SURVEY @ 306 M.
05:15 - 05:45	0.50	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 319 - 329 NM.
05:45 - 06:00	0.25	10		P	DRLPRO	SURVEY @ 319 M.
06:00 - 08:00	2.00	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 329 - 367 M.
08:00 - 08:15	0.25	21	A	P	DRLPRO	SAFETY MEETING, BOP DRILL, WELL SECURE IN 90 SECONDS
08:15 - 09:00	0.75	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 367 - 395 M.
09:00 - 09:15	0.25	07	A	P	DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 8 SECONDS
09:15 - 15:00	5.75	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 395 - 535 M.
15:00 - 16:00	1.00	10		P	DRLPRO	SURVEYS (ACCUMULATED TIME)
16:00 - 22:45	6.75	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 535 - 691 M.
22:45 - 23:00	0.25	07	A	P	DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 3 SECONDS
23:00 - 23:15	0.25	10		P	DRLPRO	SURVEY @ 678 M.
23:15 - 00:00	0.75	02	B	P	DRLPRO	DRILL 200 MM HOLE F/ 691 - 701 M.

DAILY OPERATIONAL COMMENTS(24hr Summary):
CONDUCT F.L.O.T. DRILL 200 MM HOLE F/ 243 - 701 M.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	200/850
2,446.7	3,406	1,000.0	GARBUTT	600.00	Bkgr Avg/Max (mg/L)	160/500
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 13/03/2003 | Report: 5 | DFS: 4.00 | DOL: 4.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650	F-650
Liner (mm)	152.0	
Stroke (mm)	203.0	203.0
EFF	90.0	
Press (kPa)	7,500	
SPM	110	
Output (L/mi	1,094.03	

Velocities

Drill Pipe	(m/min)	46.7
Drill Collar	(m/min)	90.7
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump F-650	2,900 (kP	646.47 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1: GEL CHEM

Time	0500 / OTH	Ca+ (mg/L)	
Depth (m)	319.00	K+ (mg/L)	
Temp (°C)	30	Polymer (kg/m³)	
Density (kg/m³)	1,050	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)	45	Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)	8.0	Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH	10.00		
Pm (cm³)			
Pf/Mf (cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
BARAZAN D PLU	1
BI CARB	2
SODA ASH	2
AQUAGEL	73
PAC-R	1
CARBONOX	2
VAN RENTAL	2

Mud Cost

Daily	$1,319.74
Cumulative	$4,653.00

Bit Data

Bit No.	1
Run	3
Size (mm)	200.00
Manu.	GeoDiamond
Type	M474YPX
Serial No.	JS7381
TFA (mm²)	237.6
Depth In (m)	240.00
Depth Out (m)	702.00
Cum. Depth (m)	461.00
Cum. Hours	21.00
WOB (Min)(daN)	2,000
WOB (Max)(daN)	6,000
RPM (Min)	90
[illegible] (Max)	120
Cond (IODL)	3/4/CT/H
Cond (BGOR)	D/ I/BT/PR
Jets 1/2/3	7.1/7.1/7.1
Jets 4/5/6	7.1/7.1/7.1

BHA Desc.: PRODUCTION

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.27	200.00	62.00	114.3	XH	P		
Bit Sub	1	1.02	159.00	62.00	114.3	XH	B		
Drill Collar	8	74.75	159.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	36.24	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.60	101.00	62.00	101.6	FH	P		
Drill Pipe	64	610.48	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	23,000
Pick-Up Weight	25,000
Slack Off Weight	21,000

Safety Drills

Last BOP Test (P)	12/03/03
Last BOP Test (F)	13/03/03
Last BOP Drill	13/03/03

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
268.00	0.500	0.000	267.99	2.22	0.00	2.22	0.19	-0.19
316.00	0.750	0.000	315.99	2.74	0.00	2.74	0.16	0.16
353.00	0.250	0.000	352.98	3.07	0.00	3.07	0.41	-0.41
382.00	1.000	0.000	381.98	3.38	0.00	3.38	0.78	0.78
417.00	0.500	0.000	416.98	3.84	0.00	3.84	0.43	-0.43
505.00	0.250	0.000	504.98	4.42	0.00	4.42	0.09	-0.09
592.00	0.250	0.000	591.98	4.80	0.00	4.80	0.00	0.00
678.00	0.500	0.000	677.97	5.36	0.00	5.36	0.09	0.09

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74		Date:	14/03/2003	Report:	6	DFS: 5.00	DOL: 5.00
Event Name: ORIG DRILLING		Spud:	10/03/2003	RR:	16/03/2002		

Rig Name:	AKITA 15	TMD:	794.00 (m)	TVD:	794.00 (m)	Progress:	93.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	13.75	AV ROP:	6.76	Hole Size:	200.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:	219.1 (mm)	Shoe TMD:	240.00 (m)	Shoe TVD:	240.00 (m)
Daily Cost:	29,917	Cum Cost:	414,404	AFE Est:	1,496,000	AFE No.:	400797

Current Status: CIRCULATE HOLE @ TD, WIPER TRIP.

24hr Forecast: WIPER TRIP, CIRC, DROP GYRO, POOH, LOG, WAITE ON ORDERS

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:30	0.50	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 701 - 702 M.
00:30 - 01:00	0.50	05	K	P DRLPRO	CIRCULATE HOLE CLEAN , SAMPLE.
01:00 - 03:15	2.25	06	A	P DRLPRO	FLOW CHECK, PUMP PILL, TRIP OUT FOR BIT. SLM. STRAP: 697.29 / TALLEY: 697.61 M. DIFF: .32 M. HOLE FILL: CALCULATED; 3.59 M3 / MEASURED: 3.68 M3 PDC BIT: M474YPX CONDITION: 8 CHIPPED, 3 BROKE CUTTERS ON BOTTOM HEEL & GUAGE ROWS, 4 CUTTERS ON BOTTOM W/ 50% FLAT WEAR
03:15 - 03:30	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 3 SECONDS
03:30 - 04:00	0.50	06	A	P DRLPRO	MAKE UP TRI-CONE INSERT BIT, RUN IN BHA.
04:00 - 05:00	1.00	09		P DRLPRO	SLIP AND CUT DRILLING LINE.
05:00 - 10:00	5.00	06	A	P DRLPRO	RUN IN HOLE W/ BIT, REAM BRIDGES @ 304, 323, 340 M. RIH TO 449 M. REAM BRIDGES F/ 449 - 702 M.
10:00 - 10:30	0.50	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 702 - 704 M.
10:30 - 10:45	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 8 SECONDS TO CLOSE
10:45 - 18:00	7.25	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 704 - 749 M.
18:00 - 18:15	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION PIPE RAMS: 2 SECONDS TO CLOSE
18:15 - 00:00	5.75	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 749 - 794 M.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL F/ 701 - 702 M. ROP @ 2 M.HR. CIRC HOLE CLEAN, TRIP OUT FOR BIT, MAKE UP BIT 2, RUN IN BHA, SLIP & CUT LINE, RIH TO 304 M. REAM BRIDGES @ 304, 323, 340, 449 - 702 M. DRILL AHEAD F/ 702 - 794 M.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,446.7	3,123	1,120.0	DEBOLT	746.00	Bkgr Avg/Max (mg/L)	38/60
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 14/03/2003 | Report: 6 | DFS: 5.00 | DOL: 5.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650		
Liner (mm)	152.0		
Stroke (mm)	203.0		
EFF	100.0		
Press (kPa)	6,700		
SPM	110		
Output (L/mi	1,215.59		

Velocities

Drill Pipe	(m/min)	46.7
Drill Collar	(m/min)	90.7
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump F-650	2,400 (kP	718.30 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	GEL CHEM		
Time/Loc	20:00 /	Ca+ (mg/L)	
Depth (m)	761.00	K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)	1,120	CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)	84	Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)	6.5	Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH	9.50		
Pm (cm³)			
Pf/Mf (cm³ / cm³			

Comment1:

Mud Products

Additive	# Units
BARAZAN D PLU	2
BARITE	12
AQUAGEL	24
PAC-R	1
VAN RENTAL	2

Mud Cost

Daily	$1,251.18
Cumulative	$5,904.00

Bit Data

Bit No.	2	1
Run	2RR	3
Size (mm)	200.00	200.00
Manu.	Smith	GeoDiamond
Type	F12YGP	M474YPX
Serial No.	MK4350	JS7381
TFA (mm²	290.3	237.6
Depth In (m)	702.00	240.00
Depth Out (m)	824.00	702.00
Cum. Depth (m)	88.00	462.00
Cum. Hours	13.25	21.50
WOB (Min)(daN)	14.000	2.000
WOB (Max)(daN)	16.000	6.000
RPM (Min)	80	70
RPM (Max)	90	100
Cond (IODL)	2/2/WT/A	3/4/CT/H
Cond (BGOR)	E/ I/BT/TD	D/ I/BT/PR
Jets 1/2/3	11.1/11.1/11.1	7.1/7.1/7.1
Jets 4/5/6		7.1/7.1/7.1

BHA Desc.: PRODUCTION

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.27	200.00	62.00	114.3	XH	P		
Bit Sub	1	1.02	159.00	62.00	114.3	XH	B		
Drill Collar	8	74.75	159.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	36.24	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.60	101.00	62.00	101.6	FH	P		
Drill Pipe	67	638.96	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

Safety Drills

Last BOP Test (P)	12/03/03
Last BOP Test (F)	11/03/03
Last BOP Drill	13/03/03

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
745.00	1.000	0.000	744.97	6.24	0.00	6.24	0.22	0.22

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74		Date: 15/03/2003	Report: 7	DFS: 6.00	DOL: 6.00		
Event Name: ORIG DRILLING		Spud: 10/03/2003	RR: 16/03/2002				
Rig Name:	AKITA 15	TMD:	824.00 (m)	TVD:	824.00 (m)	Progress:	30.00 (m)
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:	3.75	AV ROP:	8.00	Hole Size:	200.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:	219.1 (mm)	Shoe TMD:	240.00 (m)	Shoe TVD:	240.00 (m)
Daily Cost:	88,788	Cum Cost:	503,192	AFE Est:	1,496,000	AFE No.:	400797

Current Status: RUN 139 .7 MM PRODUCTION CASING.

24hr Forecast: RUN & CEMENT PRODUCTION CASING, SET SLIPS, TORT. RIG RELEASE

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:30	0.50	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 794 - 797 M.
00:30 - 00:45	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION ANNULAR: 9 SECONDS
00:45 - 04:00	3.25	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 797 - 824 M. TOTAL DEPTH.
04:00 - 04:45	0.75	05	K	P DRLPRO	CIRCULATE BOTTOM HOLE SAMPLE, CONDITION HOLE
04:45 - 05:15	0.50	10		P DRLPRO	SURVEY @ 812 M.
05:15 - 05:45	0.50	05	K	P DRLPRO	CIRCULATE, CONDITION HOLE
05:45 - 07:30	1.75	06	H	P DRLPRO	FLOW CHECK, PUMP PILL, WIPER TRIP TO CASING SH OE. FLOW CHECKS @ 812, 430, 240 M. HOLE TIGHT @ 678, 564 - 544 M. HOLE DRAG UP TO 12000 DAN
07:30 - 09:00	1.50	06	H	P DRLPRO	RUN IN HOLE, WASH TO BOTTOM F/ 802 - 824 M.
09:00 - 10:00	1.00	05	K	P DRLPRO	CIRCULATE, CONDITION HOLE
10:00 - 11:30	1.50	06	H	P DRLPRO	FLOW CHECK, WIPER TRIP 15 STANDS TO 500 M. FLO W CHECKS @ 824, 716 M. HOLE GOOD
11:30 - 12:45	1.25	05	D	P DRLPRO	CIRCULATE, CONDITION HOLE FOR LOGGING.
12:45 - 13:00	0.25	10	K	P DRLPRO	PUMP GYRO SURVEY TOOL
13:00 - 15:45	2.75	06	C	P DRLPRO	FLOW CHECK, PUMP PILL, TRIP OUT TO LOG. FLOW CHECKS: 824, 716, 401, 136, OUT OF HOLE. HOLE FIL L: CALCULATED: 3.9 M3 / MEASURED: 4.62 M3
15:45 - 16:00	0.25	07	A	P DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS: 3 SECONDS T O CLOSE
16:00 - 16:15	0.25	21	A	P DRLPRO	SAFETY MEETING W/ TUCKER WIRELINE
16:15 - 19:30	3.25	11	A	P DRLPRO	RIG UP AND LOG WELL W/ TUCKER: RUN 1: GRT-CNT-LDT-CSI-PIT-DAC LOGGERS DEPTH: 821 M. @ 17:05 HRS.
19:30 - 21:00	1.50	06	H	P DRLPRO	RUN IN HOLE W/ BIT.
21:00 - 00:00	3.00	05	K	P DRLPRO	CIRCULATE, CONDITION MUD AND HOLE FOR PRODUC TION CASING.

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL TO TD. @ 824 M. CIRC, WIPER TRIP, CIRC, PUMP GYRO SURVEY DOWN,POOH, SURVEY W/ GYRO, LOG WELL,RUN IN HOLE CIRCULATE CONDITION HOLE FOR PRODUCTION CASING.

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,446.7	3,100	1,130.0	DEBOLT	746.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 15/03/2003 | Report: 7 | DFS: 6.00 | DOL: 6.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650		
Liner (mm)	152.0		
Stroke (mm)	203.0		
EFF	100.0		
Press (kPa)	7,600		
SPM	110		
Output (L/mi	1,215.59		

Velocities

Drill Pipe	(m/min)	51.9
Drill Collar	(m/min)	100.8
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump F-650	2,650 (kP	725.99 (L/min)
Pump	(kPa)	(L/min)
Pump	(kPa)	(L/min)

Mud Check

Type 1:	GEL CHEM				
Time/Loc	04:00 /		Ca+ (mg/L)		
Depth	(m)	824.00	K+ (mg/L)		
Temp	(°C)		Polymer		
Density	(kg/m³)	1,130	CaCl2 (%)		
ECD	(kg/m³)		NaCl (%)		
Viscosity	(s/l)	93	Sand (%)		
PV	(mPa*s)		Tot. Solids		
YP	(Pa)		% Oil		
GELS	(Pa)		% H2O		
API WL	(mL)	6.0	Oil/H2O		
HTHP WL	(mL)		HGSolid		
API FC	(mm)		LGSolid		
MBT	(kg/m³)		ES (mV)		
Lime	(kg/m³)		Oil Ret (%)		
pH		9.50			
Pm	(cm³)				
Pf/Mf	(cm³ / cm³				
Comment1:					

Mud Products

Additive	# Units
CAUSTIC	1
BARITE	30
AQUAGEL	5
VAN RENTAL	2

Mud Cost

Daily	$539.89
Cumulative	$6,444.00

Bit Data

Bit No.	2	
Run	2RR	
Size (mm)	200.00	
Manu.	Smith	
Type	F12YGP	
Serial No.	MK4350	
TFA (mm²	290.3	
Depth In (m)	702.00	
Depth Out (m)	824.00	
Cum. Depth (m)	122.00	
Cum. Hours	17.00	
WOB (Min)(daN)	14,000	
WOB (Max)(daN)	15,000	
RPM (Min)	80	
RPM (Max)	85	
Cond (IODL)	2/2/WT/A	
Cond (BGOR)	E/ I/BT/TD	
Jets 1/2/3	11.1/11.1/11.1	
Jets 4,5/6		

BHA Desc.: PRODUCTION

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.27	200.00	62.00	114.3	XH	P		
Bit Sub	1	1.02	159.00	62.00	114.3	XH	B		
Drill Collar	8	74.75	159.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	36.24	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.60	101.00	62.00	101.6	FH	P		
Drill Pipe	67	638.96	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	30,000
Pick-Up Weight	30,000
Slack Off Weight	30,000

Safety Drills

Last BOP Test (P)	12/03/03
Last BOP Test (F)	15/03/03
Last BOP Drill	13/03/03

Survey Data

MD (m)	Incl.	Azimuth	TVD (m)	N/S (-) (m)	E/W (-) (m)	Section	DLS (°/30m)	BUR (°/30m)
812.00	1.500	0.000	811.95	7.70	0.00	7.70	0.22	0.22

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74		Date:	16/03/2003	Report:	8	DFS: 7.00	DOL: 7.00
Event Name: ORIG DRILLING		Spud:	10/03/2003	RR:	16/03/2002		

Rig Name:	AKITA 15	TMD:	824.00 (m)	TVD:	824.00 (m)	Progress:	
		KB:	517.00 (m)	GL:	512.51 (m)	KB to GL:	4.78 (m)
Rig Super:	BARRY GOODRICH 403-815-5258	Rot. Hours:		AV ROP:		Hole Size:	200.00 (mm)
Wellsite Eng:	AIDAN CAMPBELL 403-818-5339	Last Casing:	139.7 (mm)	Shoe TMD:	824.00 (m)	Shoe TVD:	824.00 (m)
Daily Cost:	75,458	Cum Cost:	578,650	AFE Est:	1,496,000	AFE No.:	400797

Current Status: WAIT ON DAYLITE TO MOVE RIG

24hr Forecast: MOVE CAMP & RIG TO I-76 FOR RE-ENTRY, RIG UP

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 03:45	3.75	06	G	P EVALPR	FLOW CHECK, LAY DOWN DRILL STRING. FLOW CHECK S @ 824, 458, 133, SURFACE
03:45 - 04:00	0.25	07	A	P EVALPR	RIG SERVICE, FUNCTION BLIND RAMS; 3 SECONDS
04:00 - 04:15	0.25	21	A	P EVALPR	HELD SAFETY MEETING W/ RIG CREW, HILL'S POWER TONGS
04:15 - 08:00	3.75	12	A	P EVALPR	RIG UP AND RUN PRODUCTION CASING: RAN 64 JOIN TS OF 139.7 MM, 20.8 KG/M, J-55, ST&C NEW IPSCO C ASING, TOTAL LENGTH: 825.69 M. LANDED ON BOTTO M @ 824.0 M. FLOAT COLLAR @ 810.6 M. MARKER JOI NT: 688.01 - 692.48 M.
08:00 - 10:15	2.25	12	C	P EVALPR	CIRCULATE CASING, CIRCULATE HOLE CLEAN, CONDIT ION MUD FOR CEMENTING.
10:15 - 10:30	0.25	21	A	P EVALPR	HELD SAFETY MEETING W/ SANJEL, RIG CREW.
10:30 - 11:45	1.25	12	C	P EVALPR	CEMENT PRODUCTION CASING WITH: 1.0 M3 WATER + 2.0 M3 VISWEEP AHEAD. 17.1 M3 THIXMIX II + .3 % C FL-3 + 1.0 % CACL2. DISPLACE W/ 10.3 M3 WATER. P LUG DOWN @ 11:22 HRS. 3/16/2003. BUMP PLUG W/ 10 500 KPA, HELD PRESSURE 10 MINUTES, BLEED OFF P RESSURE, CHECK FLOATS, HELD OK. 1.0 M3 GOOD C EMENT RETURNS TO SURFACE.
11:45 - 13:00	1.25	13		P EVALPR	NIPPLE DOWN BOP, SET AUTO SLIPS WITH 17000 DAN TENSION, CUT CASING. TACK WELD PLATE ON CASI NG STUB.
13:00 - 00:00	11.00	01	B	P EVALPR	CLEAN MUD TANKS, TEAR OUT RIG FOR MOVE TO I-76 ON MARCH 17 /03 RIG RELEASE @ 24:00 HRS. 3/16/20 03 WELL STATUS: POTENTIAL CHINKEH GAS WELL

DAILY OPERATIONAL COMMENTS(24hr Summary):
LAY DOWN DRILLSTRING, RUN PRODUCTION CASING, CIRCULATE AND CEMENT PRODUCTION CASING, NIPPLE DOWN BOP, SET SLIPS, TORT, RIG RELEASE @ 24:00 HRS. 3/16/2003

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (kg/m³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,446.7	3,100	1,130.0	DEBOLT	746.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Anadarko Canada Corporation

Daily Drilling Report

Well Name: ANADARKO ARROWHEAD RIVER J-74 | Date: 16/03/2003 | Report: 8 | DFS: 7.00 | DOL: 7.00

Event Name: ORIG DRILLING | Start: 10/03/2003 | End: 16/03/2002

Pump Data

Pump	F-650		
Liner (mm)	152.0		
Stroke (mm)	203.0		
EFF	100.0		
Press (kPa)	1,500		
SPM	85		
Output (L/mi	939.32		

Velocities

Drill Pipe	(m/min)	
Drill Collar	(m/min)	
Riser	(m/min)	
Lag Time	(min)	

Slow Pump

Pump	
Pump	
Pump	

Mud Check

Type 1:			
Time/Loc		Ca+ (mg/L)	
Depth (m)		K+ (mg/L)	
Temp (°C)		Polymer (kg/m³)	
Density (kg/m³)		CaCl2 (%)	
ECD (kg/m³)		NaCl (%)	
Viscosity (s/l)		Sand (%)	
PV (mPa*s)		Tot. Solids	
YP (Pa)		% Oil	
GELS (Pa)		% H2O	
API WL (mL)		Oil/H2O	
HTHP WL (mL)		HGSolid (kg/m³)	
API FC (mm)		LGSolid (kg/m³)	
MBT (kg/m³)		ES (mV)	
Lime (kg/m³)		Oil Ret (%)	
pH			
Pm (cm³)			
Pf/Mf (cm³ / cm³)			
Comment1:			

Mud Products

Additive	# Units
DESCO	2
VAN RENTAL	12

Mud Cost

Daily	$864.66
Cumulative	$7,309.00

Bit Data

Bit No.	2	
Run	2RR	
Size (mm)	200.00	
Manu.	Smith	
Type	F12YGP	
Serial No.	MK4350	
TFA (mm²	290.3	
Depth In (m)	702.00	
Depth Out (m)	824.00	
Cum. Depth (m)	122.00	
Cum. Hours	17.00	
WOB (Min)(daN)	14,000	
WOB (Max)(daN)	15,000	
RPM (Min)	80	
RPM (Max)	85	
Cond (IODL)	2/2/WT/A	
Cond (BGOR)	E/ I/BT/TD	
Jets 1/2/3	11.1/11.1/11.1	
Jets 4/5/6		

BHA Desc.: PRODUCTION

Item	Jts	Length	OD	ID	C.Size	C.Type	P/B	Kg/m	B.Angle
Tri-Cone Bit	1	0.27	200.00	62.00	114.3	XH	P		
Bit Sub	1	1.02	159.00	62.00	114.3	XH	B		
Drill Collar	8	74.75	159.00	62.00	114.3	XH	P		
Drilling Jar	1	5.07	165.00	62.00	114.3	XH	P		
Drill Collar	4	38.24	157.00	62.00	114.3	XH	P		
Cross Over	1	0.91	160.00	62.00	101.6	FH	B		
Heavy Weight Drill Pipe	6	55.60	101.00	62.00	101.6	FH	P		
Drill Pipe	67	638.96	101.00	62.00	101.6	FH	P		

Pipe Data

String Rot Weight	
Pick-Up Weight	
Slack Off Weight	

Safety Drills

Last BOP Test (P)	12/03/03
Last BOP Test (F)	16/03/03
Last BOP Drill	13/03/03

Survey Data

MD	Incl.	Azimuth	TVD	N/S (-)	E/W (-)	Section	DLS	BUR

Baroid

Anadarko Canada Corporation

Baroid Drilling Fluids

Post Well Audit

ANADARKO et al Ft Liard

J-74

May 15, 2003

HALLIBURTON

Post Well Audit

Operator	Anadarko
Well Name	ACC Arrowhead River J-74
Field / Block	Arrowhead/
Country	Canada
Legal Description	J-74
Geographic Area / County	
District	
Contractor	AKITA Drilling Ltd
Rig Name	Akita 15
Recap Date	5/15/2003
Reference Number	
Prepared By	Allen Toney

Cover Letter

Anadarko Canada Corporation
400, 425 - 1st Street S.W.
Calgary, Alberta, T2P 4V4

Re: ACC Fort Liard J74

Mr. Aiden Campbell,

The following post well audit summarizes the activities of Baroid of Canada Drilling Fluids during drilling of this ACC Fort Liard well. The activities surrounding the operations of the drilling fluid are documented along with the associated costs to Anadarko. These costs are field estimates and additional incidental costs are included in the original invoice generated by the Halliburton accounting department. If any discrepancies in the cost of products and services are apparent between this document and the original invoice, please consider the original invoice to be correct.

Thank you,

Allen R. Toney,

Technical Professional
BAROID
1000, 333 - 5 Avenue SW
Calgary, Alberta T2P 3B6

Office: (403) 260-8602
Fax: (403) 263-9355
Cell: (403) 650-7178
e-mail: al.toney@halliburton.com

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Well Summary

Well : ACC Arrowhead River J-74
Operator: Anadarko

Well Data

Spud Date		Mar/09/03	Products/Fluids Drilling Cost		$4,678.35
TD Date		Mar/15/03	Products/Fluids Completion Cost		$0.00
Project			Solids Control/ Waste Management Cost		$0.00
Days on Well		7	Products/Fluids Cementing Cost		$0.00
From Date		Mar/09/03	Products Lost/Damaged Cost		$0.00
To Date		Mar/16/03	Engineering Services Cost		$1,625.00
Drilling Days		2	Equipment Cost		$990.00
Rotating Hours		97.75	Transport / Packaging		$0.00
Average ROP	m/hr	11.0	Other Cost		$0.00
Maximum Density	kg/m3	1,125	Total Well Cost		$7,293.35
Total Measured Depth	m	824.0	Planned Cost		$0.00
True Vertical Depth	m	824.0	Cost per Fluid Volume	$ / m3	82.61
Distance Drilled	m	824.0	Cost per m Drilled	$ / m	8.85
Maximum Deviation	degrees	1.50	Cost / Volume of Hole Drilled	$ / m3	116.51
Maximum Horiz. Displacement	m	0.0	Fluid Volume / Hole Volume	m3 / m3	1.410
Bottom Hole Temperature	Deg C		Fluid Volume / Length Drilled	m3/m	0.110

Casing Design

Casing Description	Set Date and Time	Top MD m	Top TVD m	End MD m	End TVD m	Csg OD mm	Csg ID mm	Hole Size mm	Hole MD m	Hole TVD m
8.625 K-55 24.0	03/12/2003 04:00	0.0	0.0	240.0	240.0	219	205	311	240.0	240.0

Mud Program

Interval #	Mud Type	Interval Days	BHT Deg C	Max. Dens kg/m3	Planned Fluid Cost	Actual Fluids and Products Cost	Variance
01	Spud Mud	3		1,125	$ 0.00	$ 1,385.00	$ 1,385.00
02	AQUAGEL Mud	1		0	$ 0.00	$ 3,293.35	$ 3,293.35

Total Cost Breakdown

Well : ACC Arrowhead River J-74
Operator: Anadarko

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	3.00	$ 1,625.00
		Subtotal	**$ 1,625.00**
Equipment			
Trailers	each	18.00	$ 990.00
		Subtotal	**$ 990.00**
Prod/Fluids : Drilling			
AQUAGEL	45 Kg bag	215.00	$ 1,750.10
BARAFOS	23 Kg bag	3.00	$ 272.70
BARAZAN D PLUS	25 lb bag	6.00	$ 1,497.24
barite	40 Kg bag	62.00	$ 692.54
BAROID DETERGENT	20 l pail	1.00	$ 37.23
bicarbonate of soda	50 lb bag	2.00	$ 56.90
CARBONOX	50 lb bag	3.00	$ 22.38
caustic soda	25 Kg bag	3.00	$ 132.27
Desco CF	25 lb bag	3.00	$ 216.99
		Subtotal	**$ 4,678.35**
		Total Well Cost	**$ 7,293.35**

Net Well Cost Breakdown

Well : ACC Arrowhead River J-74
Operator: Anadarko

Cost Breakdown I	$	Interval 01	Interval 02	Total
Fluids/Products : Drilling		1,385.00	3,293.35	4,678.35
Fluids Products : Comp/Filtration				
Solids Control/Waste Managment				
Fluids/Products : Cementing				
Engineering Services		1,625.00		1,625.00
Fluids/Products : Lost Damaged				
Other Cost				
Equipment cost		990.00		990.00
Transport / Packaging Cost				
Total Cost		4,000.00	3,293.35	7,293.35

Cost Breakdown II	$	Interval 01	Interval 02	Total
Total Products Cost		1,385.00	3,293.35	4 678.35
Total Fluids Cost				
Total Charges Cost		2,615.00		2,615.00
Total Cost		4,000.00	3,293.35	7,293.35
Planned Cost				
Variance		4,000.00	3,293.35	7,293.35

Volumes Breakdown	m3	Interval 01	Interval 02	Total
Total Base Fluids Additions				
Total Chemical Additions		1.82	2.32	4.14
Total Barite Additions			0.59	0.59
Total Water Additions		57.07	26.49	83.56
Total Fluid Built		58.89	29.40	88.29
Total Fluids Received				
Total Mixing Additions				
Total Influx Additions				
Total Other Additions				
Total Fluid Volume		58.89	29.40	88.29

Products List

Well : ACC Arrowhead River J-74
Operator: Anadarko

Product Name	Product Primary Function	Packaging	SG	Unit Price
AQUAGEL	Viscosifier/Suspension Agent	45 Kg bag	2.500	$ 8.14
BARAFOS	Thinner/Deflocculant	23 Kg bag	1.500	$ 90.90
barite	Weighting Material	40 Kg bag	4.200	$ 11.17
BAROID DETERGENT	Detergent/Surfactanct	20 l pail	1.000	$ 37.23
BARAZAN D PLUS	Viscosifier/Suspension Agent	25 lb bag	1.600	$ 249.54
bicarbonate of soda	Alkalinity Control	50 lb bag	2.200	$ 28.45
CARBONOX	Filtration Control	50 lb bag	1.700	$ 7.46
caustic soda	Alkalinity Control	25 Kg bag	2.130	$ 44 09
Desco CF	Thinner/Deflocculant	25 lb bag	0.500	$ 72.33
BARO-SEAL MEDIUM	Lost Circulation/Bridging Agent	16 Kg bag	1.100	$ 25.63
PAC-R	Filtration Control	50 lb bag	1.600	$ 212.70
sawdust	Lost Circulation/Bridging Agent	20 lb bag	0.900	$ 3.66
soda ash	Alkalinity Control	25 Kg bag	2.533	$ 13.23
Cellophane (Cellophane)	Lost Circulation/Bridging Agent	11 Kg bag	0.000	$ 49.75

Conclusions & Recommendations

CONCLUSIONS & RECOMMENDATIONS

311 mm - Surface Hole - AQUAGEL Mud - 0 to 240 m

Conclusions:

Drilled this interval according to program without difficulty. High viscosity sweeps and trips served to clean and condition the hole for running casing. The 219.1-mm casing was run and cemented without difficulty.

Recommendations:

Highly reactive clays associated with mud rings and bit balling should be expected and pretreated for in this area. When spudding with water is not a viable option, spud with a low viscosity AQUAGEL slurry, and control ROP through the first 150-m of surface hole. Consider using concentrated BARAFOS / Detergent pills in whole mud or water, but avoid over treatment with BARAFOS (SAPP), which can promote wellbore washout, or Detergent which can cause foaming. Over treatment with either BARAFOS or Detergent may cause failure of environmental tests for disposal. As another alternative, consider using WALL-NUT pills in whole mud to mechanically erode reactive clays from the bit and string.

200 mm - Main Hole - AQUAGEL Mud - 240 to 824 m

Conclusions:

No problems with drilling fluid properties were reported and the interval was drilled according to program, and or the drilling foreman's direction. TD was achieved at 824 m and the 139.7-mm casing was run and cemented without difficulty.

Recommendations:

Continue to employ PAC and CARBONOX to maintain a tight, slick filter cake from spud to TD. Maintain solids content as low as possible with all available solids control equipment, the use of BARAZAN D PLUS to provide better low end hole cleaning ability and better particle suspension for tripping and running casing.

Well : ACC Arrowhead River J-74

Operator: Anadarko

Interval Summary

Interval #	01	Bit Size	311 mm	Hole Size Maximum	311.00 mm

Interval Start Date		Mar/09/2003	Planned Cost	$	0.00
Interval End Date		Mar/11/2003	Total Interval Cost	$	4,000.00
Interval TD Date		Mar/11/2003	Programmed Variance	$	4,000.00
Drilling Days		1.00	Total Products Cost	$	1,385.00
Rotating / Drilling Hours		17.75 / 16.75	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	0.0/	Total Charges Cost	$	2,615.00
End of Int. MD/TVD	m	240.0/ 240.0	Total Cementing Cost	$	0.00
Footage	m	240.0	Fluid Cos per Vol unit	$/m3	67.50
Average ROP	m/hr	14.3	Fluid Cost / Hole Drilled	$/m	16.67
Max. Hole Angle	degrees		Fluid Cost / Vol Drilled	$/m3	218.01
Casing Size	mm	219	Total Fluid Volume	m3	58.80
Casing Shoe MD	m	240.0	Vol Fluid / Vol Drilled	m3/m3	3.23
Casing Length	m	240.0	Vol Fluid / Hole Drilled	m3/m	0.25
Bottom Hole Temp	Deg C	-18	Fluid Loss / Vol Drilled	m3/m3	0.88
Max. Fluid Density	kg/m3	1,125	Fluid Loss / Hole Drilled	m3/m	0.07

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used	Product Cost	
Alkalinity Control					
caustic soda	25 Kg bag	Spud Mud	1.00	$	44.09
			Total	$	44.09
Thinner/Deflocculant					
BARAFOS	23 Kg bag	Spud Mud	3.00	$	272.70
			Total	$	272.70
Viscosifier/Suspension Agent					
BARAZAN D PLUS	25 lb bag	Spud Mud	1.00	$	249.54
AQUAGEL	45 Kg bag	Spud Mud	96.00	$	781.44
			Total	$	1,030.98
Detergent/Surfactanct					
BAROID DETERGENT	20 l pail	Spud Mud	1.00	$	37.23
			Total	$	37.23

Total Products and Base Fluids Cost $ 1,385.00

Interval Summary

Well: ACC Arrowhead River J-74
Operator: Anadarko

Interval #	02	Bit Size	311 mm	Hole Size Maximum	311.00 mm

Interval Start Date		Mar/16/2003	Planned Cost	$	0.00
Interval End Date		Mar/16/2003	Total Interval Cost	$	3,293.35
Interval TD Date		Mar/16/2003	Programmed Variance	$	3,293.35
Drilling Days		1.00	Total Products Cost	$	3,293.35
Rotating / Drilling Hours		80.00 / 80.00	Total Fluids Cost	$	0.00
Top of Int. MD/TVD	m	240.0 / 240.0	Total Charges Cost	$	0.00
End of Int. MD/TVD	m	824.0 / 824.0	Total Cementing Cost	$	0.00
Footage	m	584.0	Fluid Cost per Vol unit	$/m3	111.31
Average ROP	m/hr	10.3	Fluid Cost / Hole Drilled	$/m	5.64
Max. Hole Angle	degrees		Fluid Cost / Vol Drilled	$/m3	73.77
Casing Size	mm	219	Total Fluid Volume	m3	29.40
Casing Shoe MD	m	240.0	Vol Fluid / Vol Drilled	m3/m3	0.66
Casing Length	m	240.0	Vol Fluid / Hole Drilled	m3/m	0.05
Bottom Hole Temp.	Deg C	-18	Fluid Loss / Vol Drilled	m3/m3	0.00
Max. Fluid Density	kg/m3	0	Fluid Loss / Hole Drilled	m3/m	0.00

Interval Products and Base Fluids Usage and Cost

Product Function / Name	Packaging	Drilling Fluid	Total Used	Product Cost	
Alkalinity Control					
caustic soda	25 Kg bag	AQUAGEL Mud	2.00	$	88.18
bicarbonate of soda	50 lb bag	AQUAGEL Mud	2.00	$	56.90
			Total	$	145.08
Filtration Control					
CARBONOX	50 lb bag	AQUAGEL Mud	3.00	$	22.38
			Total	$	22.38
Thinner/Deflocculant					
Desco CF	25 lb bag	AQUAGEL Mud	3.00	$	216.99
			Total	$	216.99
Viscosifier/Suspension Agent					
BARAZAN D PLUS	25 lb bag	AQUAGEL Mud	5.00	$	1,247.70
AQUAGEL	45 Kg bag	AQUAGEL Mud	119.00	$	968.66
			Total	$	2,216.36
Weighting Material					
barite	40 Kg bag	AQUAGEL Mud	62.00	$	692.54
			Total	$	692.54

Total Products and Base Fluids Cost $ 3,293.35

Interval Discussion

Interval No: 1

Top of Interval: m
Bottom of Interval: 240.0 m

INTERVAL DISCUSSION

311 mm Surface Hole to 240 m

From: Mar 10 **To:** Mar 11

Drilling Fluid: AQUAGEL Caustic

Formations: Ground water

Objectives:

Drill to 219.1 mm casing point at approx. 205 m
Achieve optimum ROP
Improve hole cleaning practices and capabilities
Maintain wellbore stability
Be prepared for possible water influx, mud rings, or losses
Drill the interval without incident and as planned within cost and time estimates

Summary:

Spudded the 311-mm hole on March 10, 2003. Drilled with bit 1 to 212 m. Drilled with bit 2 to casing point at 240 m. Ran casing and cemented without difficulty.

Issues Discussion:

Hole cleaning problems were encountered at casing point. A couple of high viscosity sweeps proved sufficient to clean the hole and large volumes of 5 to 10 mm gravel were observed at the shaker.

Fluid Properties Summary:

No problems with fluid properties were reported. Interval was drilled according to program.

Maintenance Treatments:

AQUAGEL was mixed to build and maintain viscosity. Caustic Soda was mixed for alkalinity. PAC R was mixed to help lower filtration rate. BARAFOS (SAPP) and BAROID Drilling Detergent were mixed to treat and avoid mud rings. CARBONOX was mixed to tighten the filtercake and

Interval Discussion

control the filtration rate.

Interval Discussion

Interval No: 2

Top of Interval: 240.0 m
Bottom of Interval: 824.0 m

INTERVAL DISCUSSION

200 mm Main Hole - From: 240 m **To:** 824 m

From: Mar 11 **To:** Mar 16

Drilling Fluid: AQUAGEL Caustic

Formations: Scatter Sand, Garbutt, Chinkeh, and Debolt

Objectives:

Drill to 139.7 mm casing point at approx. 800 m
Achieve optimum ROP
Improve hole cleaning practices and capabilities
Maintain wellbore stability
Be prepared for possible water influx, mud rings, or losses
Drill the interval without incident and as planned within cost and time estimates

Summary:

Drilled 200-mm hole from drillout at 240 m to 702 m. Trip for bit 2. Drill to TD at 824 m. Required to ream and pump out on trips. Conditioned hole for logging by raising viscosity with AQUAGEL and BARAZAN and wiper trips. Logs to bottom. Ran casing and cemented with Sanjel.

Fluid Properties Summary:

No problems with fluid properties were reported. Interval was drilled according to program.

Maintenance Treatments:

AQUAGEL was mixed to build and maintain viscosity. Caustic Soda was mixed for alkalinity. PAC R was mixed to help lower filtration rate. BARAFOS (SAPP) and BAROID Drilling Detergent were mixed to tr[illegible] avoid mud rings. CARBONOX was mixed to tighten the filtercake and control the filtrat[illegible] BARAZAN was mixed to condition the mud for logging and running casing.

Interval Inventory Report

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval #	01	From Report Date	3/9/2003	Top of Interval	0.0	m	
Hole Size	311 mm	To Report Date	3/11/2003	Bottom of Interval	240.0	m	

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
AQUAGEL	45 Kg bag		220.00	96.00		124.00	5,579.9
BARAFOS	23 Kg bag		4.00	3.00		1.00	23.0
BARAZAN D PLUS	25 lb bag		16.00	1.00		15.00	170.1
barite	40 Kg bag		533.00				
BAROID DETERGENT	20 l pail		15.00	1.00		14.00	279.8
BARO-SEAL MEDIUM	16 Kg bag		116.00				
bicarbonate of soda	50 lb bag		2.00				
CARBONOX	50 lb bag		49.00				
caustic soda	25 Kg bag		24.00	1.00		23.00	575.0
Cellophane (Cellophane)	11 Kg bag		99.00				
Desco CF	25 lb bag		12.00				
PAC-R	50 lb bag		33.00				
sawdust	20 lb bag		190.00				
soda ash	25 Kg bag		18.00				
						Total Weight of Products in Stock, kg	6,627.6
						Total Weight of Products in Stock, Metric Tons	6.63

Interval Inventory Report

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval #	02	From Report Date	3/16/2003	Top of Interval	240.0	m	
Hole Size	311 mm	To Report Date	3/16/2003	Bottom of Interval	824.0	m	

Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight kg
AQUAGEL	45 Kg bag	124.00	55.00	119.00		60.00	2,700.0
BARAZAN D PLUS	25 lb bag	15.00		5.00		10.00	113.4
barite	40 Kg bag	533.00		62.00		471.00	18,839.8
bicarbonate of soda	50 lb bag	2.00		2.00			
CARBONOX	50 lb bag	49.00		3.00		46.00	1,043.3
caustic soda	25 Kg bag	23.00		2.00		21.00	525.0
Desco CF	25 lb bag	12.00		3.00		9.00	102.1
						Total Weight of Products In Stock, kg	23,323.6
						Total Weight of Products In Stock, Metric Tons	23.32

Interval Chemical Concentrations

Well : ACC Arrowhead J74
Operator: Anadarko

Interval #	01	From Report Date	3/9/2003	Top of Interval	0.0 m
Hole Size	311 mm	To Report Date	3/11/2003	Bottom of Interval	240.0 m

Fluid Name: Spud Mud

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL	73.36	73.36	73.36
BARAFOS	1.17	1.17	1.17
BARAZAN D PLUS	0.19	0.19	0.19
BAROID DETERGENT	0.34	0.34	0.34
caustic soda	0.42	0.42	0.42

Interval Chemical Concentrations

Well : ACC Arrowhead J74
Operator: Anadarko

Interval #	02	From Report Date	3/16/2003	Top of Interval	240.0 m
Hole Size	311 mm	To Report Date	3/16/2003	Bottom of Interval	824.0 m

Fluid Name: AQUAGEL Mud

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL	117.61	117.61	117.61
BARAFOS	0.70	0.70	0.70
BARAZAN D PLUS	0.90	0.90	0.90
barite	34.31	34.31	34.31
BAROID DETERGENT	1.21	1.21	1.21
bicarbonate of soda	0.63	0.63	0.63
CARBONOX	0.94	0.94	0.94
caustic soda	0.94	0.94	0.94
Desco CF	0.47	0.47	0.47
soda ash	0.25	0.25	0.25

Fluid Name: Spud Mud

Material	Average kg/m3	Minimum kg/m3	Maximum kg/m3
AQUAGEL	73.36	73.36	73.36
BARAFOS	1.17	1.17	1.17
BARAZAN D PLUS	0.19	0.19	0.19
BAROID DETERGENT	2.04	2.04	2.04
caustic soda	0.42	0.42	0.42
soda ash	0.42	0.42	0.42

Interval Cost Breakdown

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval #	01	From Report Date	3/9/2003	Top of Interval	0.0 m
Hole Size	311 m	To Report Date	3/11/2003	Bottom of Interval	240.0 m

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	2.00	$ 1,100.00
		Subtotal	$ 1,100.00
Equipment			
Trailers	each	6.00	$ 330.00
		Subtotal	$ 330.00
Prod/Fluids : Drilling			
AQUAGEL	45 Kg bag	96.00	$ 781.44
BARAFOS	23 Kg bag	3.00	$ 272.70
BARAZAN D PLUS	25 lb bag	1.00	$ 249.54
BAROID DETERGENT	20 l pail	1.00	$ 37.23
caustic soda	25 Kg bag	1.00	$ 44.09
		Subtotal	$ 1,385.00
		Interval Cost	$ 2,815.00
		Programmed Cost	$ 0.00
		Programmed Variance	$ 2,815.00

Interval Cost Breakdown

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval #	02	From Report Date	3/16/2003	Top of Interval	240.0 m
Hole Size	311 m	To Report Date	3/16/2003	Bottom of Interval	824.0 m

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	Day(s)	1.00	$ 525.00
		Subtotal	$ 525.00
Equipment			
Trailers	each	12.00	$ 660.00
		Subtotal	$ 660.00
Prod/Fluids : Drilling			
AQUAGEL	45 Kg bag	119.00	$ 968.66
BARAZAN D PLUS	25 lb bag	5.00	$ 1,247.70
barite	40 Kg bag	62.00	$ 692.54
bicarbonate of soda	50 lb bag	2.00	$ 56.90
CARBONOX	50 lb bag	3.00	$ 22.38
caustic soda	25 Kg bag	2.00	$ 88.18
Desco CF	25 lb bag	3.00	$ 210.39
		Subtotal	$ 3,293.35
		Interval Cost	$ 4,478.35
		Programmed Cost	$ 0.00
		Programmed Variance	$ 4,478.35

Fluid Volume Record

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval # 01

		m3	ADDITIONS				m3			LOSSES			m3		VOLUMES		m3	
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume

Fluid Name: Spud Mud

002	3/11/2003			57.07		1.82		58.89	9.00		7.00		16.00	15.89	27.00		42.89
	Cummulative Volumes:			57.10		1.80		58.90	9.00		7.00		16.00				

Fluid Volume Record

Well : ACC Arrowhead River J-74
Operator: Anadarko

Interval # 02

		m3	ADDITIONS m3							LOSSES m3					VOLUMES m3			
Rpt #	Rpt Date	Initial Volume	Received & Mixed	Base	Water	Barite	Chem	Influx	Daily Total	SCE	Down Hole	Misc	Returned & Mixed	Daily Total	Hole Volume	Active Pits Volume	Reserve Pits Volume	Final Volume

Fluid Name: Spud Mud

003	3/16/2003	42.89											42.89	42.89				
	Cummulative Volumes:												42.90	42.90				

Fluid Name: AQUAGEL Mud

003	3/16/2003		42.89	26.49	0.59	2.32		72.29							52.29	20.00		72.29
	Cummulative Volumes:		42.90	26.50	0.60	2.30		72.30										

Fluid Property Recap:Water-Based Fluid

Well : ACC Arrowhead River J-74
Operator: Anadarko

Date	Depth	FL Temp	Density	Fun Visc	Rheology @ 48.89C					Filtration				Filtrate Analysis							Retort Analysis				MBT	Rheometer Dial Reading					
					PV	YP	Gels Pa			API ml/30 min	HTHP ml/30 min	Cake API/HTHP mm	Temp	pH	Pm ml	Pf ml	Mf ml	Cl mg/l	Total Hard mg/l	Sand % by Vol	Corr Sol % by Vol	LGS % by Vol	Oil % by Vol	Water % by Vol							
	m	Deg C	kg/m3	sec/l	mPa.		10s	10m	30m				Deg C												kg/m3 E	600	300	200	100	6	3
03/11/03	240.0	29	1125	57	23	8	3	13	17	8.0				10.00	0.70	0.30	0.50	300	60	0.25	7.70	7.4		92.1	91.00	63	40	30	19	7.0	4.0

Fluid Program Exceptions Report

Well : ACC Arrowhead River J-74
Operator: Anadarko

Report No	Date	Time	Depth m	Property Name	Units	Actual Value	Exception	Program Min	Program Max
002	03/11/03	16:00	240	Yield Point	Pa	8.1	High	5.0	8.0
002	03/11/03	16:00	240	Plastic Viscosity	mPa.s	23	High	10	16
002	03/11/03	16:00	240	Density	kg/m3	1,125	High	1,040	1,100

Well: ACC Arrowhead River J-74
Operator: Anadarko

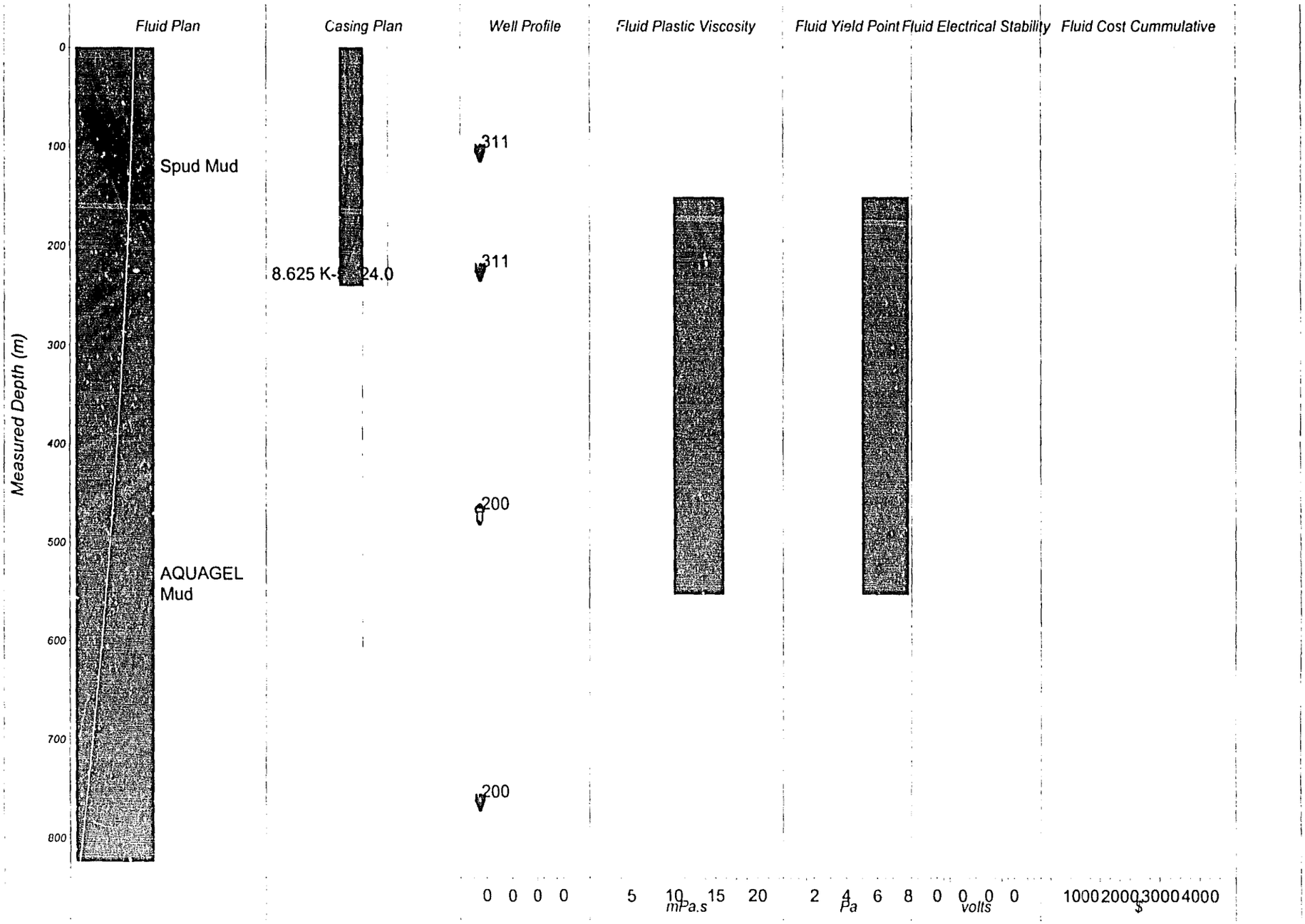
Operations Log Recap

For report #001A on 3/9/2003	Operation at depth(m) 0
Activity	Rig up and rig down
Rig Activity	4) DENSITY, ALAP with water additions, at a rate necessary for volume & mud condition, and SCE. Keep the skimmers as high as volume allows.Increase the DENSITY of the mud with Barite additions should water flows are encountered. 5) Raise the FV to 70+ sec/l with AQUAGEL & BARAZAN D+ @ 5:1 ratio, to clean & condition the hole for casing. 6) With casing on bottom circulate the hole clean, shorten the system to a partial suction then reduce the FV to <45 sec/l with additions of water @ 40+/- l/min & Desco CF @ 20+ min/sx, prior to cementing.
Fluid Treatments	SPUD REPORT, Fill the tanks 3/4 full of water & mix 1 sx of Soda Ash. Adjust the pH to 8.5-9.0 with Caustic Soda. Mix AQUAGEL @ 5-7 min/sx for a 40+/- sec/l FV. Adjust the FV as required to clean the hole. 2) Add 1-3 pails of Drilling Detergent/100 m of hole to prevent mud rings. Should mud rings form mix 1/2-1 of BARAFOS into 3-5 m3 of water in the pill tank & slug the hole. Try to catch the pill in the pill tank for reuse, as required. 3) If LOSS OF CIRCULATION occurs, raise the FV to 80+ sec/l with AQUAGEL & add Sawdust for returns. Should losses be severe mix BARO-SEAL (m) & Sawdust @ 8:1 ratio & spot across the loss zone or pump as a sweep.
For report #002A on 3/11/2003	**Operation at depth(m) 240**
Activity	Wiper Tripping
Rig Activity	Drilled 311 mm surface hole to 212 m. Tripped for bit 2. Drilled to casing point at 240 m. Problems POOH on wiper trip. RIH at report time. Curtis Scoville (403) 852-0317. Room A-14 in the 1st sleeper at Rig 5 camp.
Fluid Treatments	FOR RUNNING CASING: Raise viscosity for running casing to 80+ sec/L with AQUAGEL and BARAZAN in a 10:1 ratio. Try to use less detergent and SAPP on surface hole as this will cause problems raising and maintaining viscosity for casing point. Mix 1 sx of CARBONOX for every 20 sx of AQUAGEL mixed for spud mud. WHILE CIRCULATING THE CASING: Lower viscosity for cementing the casing to 45 sec/L with 2 sx of Desco CF and water as directed.
For report #003A on 3/16/2003	**Operation at depth(m) 824**
Activity	Circulating Casing
Rig Activity	Drilled 200 mm hole from 240 m to 702 m. Bit trip at 702 m. Required to pump out and ream in on most wiper and bit trips. Drilled to casing point at 824 m. Wiper tripped, reamed and raised viscosity with AQUAGEL and BARAZAN. Logs to bottom. Ran casing and rigged to cement with Sanjel. Working tight hole and raising viscosity allowed logs to go to bottom and casing to be run successfully. Curtis Scoville (403) 852-0317.
Fluid Treatments	FOR CEMENTING: Lower viscosity to 40 to 45 sec/L with Desco and water as required.

Well Profile vs Properties and Cost

Well : ACC Arrowhead River J-74

Operator : Anadarko



Baroid Drilling Fluids

Printed On 5/16/2003

Bit Record

Well : ACC Arrowhead River J-74

Operator: Anadarko

Run No	Bit No	Bit Size mm	Bit Manufacturer	Bit Type	Bit Style	IADC Code	Serial No	Jet or TFA	Depth Out m	Run Length m	ROP m / hr	WOB kg	Bit RPM	Pump Pres kPa	Pump Output m3/min	Fluid Type	Fluid Density kg/m3	Dev Angle	Bit Grading	Reason Pulled
1	1	311	SMITH	XGGC	MT		RR0276	2x14.3|1x15.	212.0	212.0	0.0	0.0	0	0	0.000	Spud Mud	1,120	0.75		
2	2	311	WESTERN	X1CXP	MT		J26052	3x15.9	240.0	28.0	0.0	0.0	0	0	0.000	Spud Mud	1,130	1.00		
3	1	200	GEO DIAMON	MA74YPX	FC		JS7381	4x7.1	702.0	462.0	0.0	0.0	0	0	0.000	AQUAGEL Mud	1,130	1.50		
4	2RP	200	SMITH	F12YGP	IN		MK4350	3x11.1	824.0	122.0	0.0	0.0	0	0	0.000	AQUAGEL Mud	1,130	1.50		

Personnel Register

Baroid Field Service Representatives: Curtis Scoville and John Heppleston.

Baroid Technical Service Representative: Al Toney.

Deviation Actual

Well : ACC Arrowhead River J-74
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
3/11/2003	90.0	90.0	0.75	0.0	
3/11/2003	145.0	145.0	0.25	0.0	
3/11/2003	192.0	192.0	0.25	0.0	
3/11/2003	229.0	229.0	0.75	0.0	
3/16/2003	812.0	812.0	1.50	0.0	

gyro/data

ANADARKO CANADA CORPORATION

ARROWHEAD RIVER
J-74

gyrodata

A Gyrodata Directional Survey

for

ANADARKO CANADA CORPORATION

Well Name: **ARROWHEAD RIVER,**
Surface Location: **J-74,**

Job Number: **C0303GDM089**

Run Date: 03/18/2003 11:41:55 AM

Surveyor: Blane Hoddow

Calculation Method: MINIMUM CURVATURE

Survey Latitude: **60.333540 ° N** Longitude: **122.585310 ° W**

Azimuth Correction:
Gyro: Bearings are Relative to True North

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

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A Gyrodata Directional Survey

ANADARKO CANADA CORPORATION
Well Name: **ARROWHEAD RIVER**
Surface Location: **J-74**
Job Number: **C0303GDM089**

MEASURED DEPTH meters	INCL deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES meters		DOGLEG SEVERITY deg/30m
0.0	0.00	0.00	0.0	0.0	0.0	0.00 N	0.00 E	0.00

ALL SURVEY DEPTHS ARE REFERENCED TO AN R.K.B. OF 4.9 METERS.

44.8	0.27	82.68	44.8	0.1	82.7	0.01 N	0.10 E	0.18
63.6	0.44	174.26	63.6	0.2	109.0	0.05 S	0.15 E	0.83
78.0	0.19	181.02	78.0	0.2	129.7	0.13 S	0.16 E	0.52
96.0	0.25	271.91	96.0	0.2	143.5	0.16 S	0.12 E	0.53
114.3	0.12	291.39	114.3	0.2	158.0	0.15 S	0.06 E	0.24
132.8	0.26	294.59	132.8	0.1	177.5	0.13 S	0.01 E	0.22
151.5	0.91	260.61	151.5	0.2	233.2	0.13 S	0.18 W	1.14
169.9	0.89	271.29	169.9	0.5	251.6	0.16 S	0.47 W	0.28
179.4	0.57	264.79	179.4	0.6	255.0	0.16 S	0.59 W	1.05
198.2	0.35	258.69	198.2	0.8	256.5	0.18 S	0.74 W	0.36
217.1	0.27	276.35	217.1	0.9	257.6	0.18 S	0.84 W	0.20
236.1	0.29	255.56	236.1	1.0	258.4	0.19 S	0.93 W	0.17
255.0	0.32	244.70	255.0	1.1	257.6	0.23 S	1.03 W	0.10
274.1	0.25	244.18	274.1	1.1	256.5	0.27 S	1.11 W	0.12
293.4	0.30	255.90	293.3	1.2	256.0	0.30 S	1.20 W	0.12
312.3	0.29	257.98	312.3	1.3	256.1	0.32 S	1.30 W	0.03
331.6	0.41	255.23	331.5	1.5	256.1	0.35 S	1.41 W	0.18
350.6	0.44	254.89	350.6	1.6	256.0	0.39 S	1.55 W	0.05
369.6	0.43	258.68	369.6	1.7	256.1	0.42 S	1.69 W	0.05
388.3	0.36	277.40	388.3	1.9	256.8	0.42 S	1.82 W	0.23
407.4	0.43	299.85	407.4	2.0	258.9	0.38 S	1.94 W	0.26
426.0	0.58	305.43	426.0	2.1	262.0	0.29 S	2.08 W	0.26
444.9	0.64	303.47	444.9	2.2	265.5	0.18 S	2.24 W	0.10
464.2	0.67	302.14	464.2	2.4	268.6	0.06 S	2.43 W	0.05
482.8	0.63	300.04	482.8	2.6	271.1	0.05 N	2.61 W	0.07
502.1	0.70	298.81	502.1	2.8	273.3	0.16 N	2.80 W	0.10
521.1	0.61	294.89	521.1	3.0	275.0	0.26 N	3.00 W	0.16
540.4	0.61	298.65	540.4	3.2	276.3	0.35 N	3.18 W	0.06
559.7	0.71	294.61	559.7	3.4	277.6	0.45 N	3.38 W	0.17
579.1	0.76	297.94	579.1	3.6	278.9	0.56 N	3.60 W	0.10
598.3	0.79	303.76	598.3	3.9	280.3	0.69 N	3.82 W	0.13
617.0	0.92	306.78	617.0	4.1	281.9	0.86 N	4.05 W	0.22
636.1	0.83	305.38	636.1	4.4	283.5	1.03 N	4.29 W	0.14
655.4	0.93	306.47	655.3	4.7	284.9	1.20 N	4.53 W	0.16
674.6	1.14	310.22	674.6	5.0	286.5	1.42 N	4.80 W	0.34
693.9	1.32	315.79	693.8	5.4	288.5	1.70 N	5.10 W	0.35

gyrodata

A Gyrodata Directional Survey

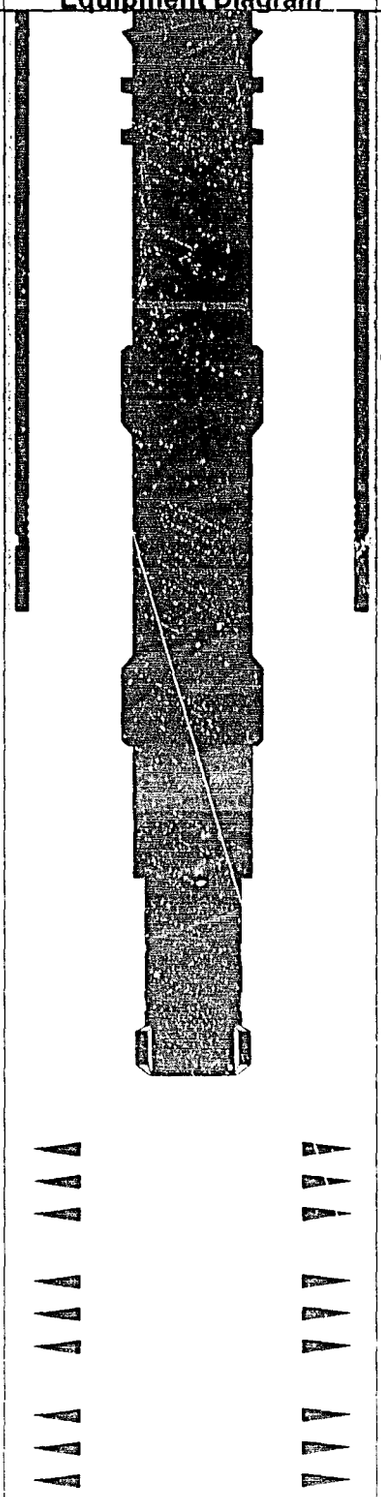
ANADARKO CANADA CORPORATION
Well Name: **ARROWHEAD RIVER**
Surface Location: **J-74**
Job Number: **C0303GDM089**

MEASURED DEPTH meters	INCL deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES meters		DOGLEG SEVERITY deg/30m
703.5	1.25	317.23	703.5	5.6	289.5	1.86 N	5.25 W	0.26
722.7	1.31	309.98	722.7	6.0	291.2	2.16 N	5.56 W	0.27
742.0	1.72	275.72	741.9	6.5	291.1	2.33 N	6.02 W	1.52
761.2	2.41	270.94	761.2	7.1	289.4	2.36 N	6.71 W	1.11
780.4	3.84	284.95	780.3	8.1	288.1	2.53 N	7.73 W	2.52
799.3	4.50	293.18	799.1	9.5	288.3	2.99 N	9.03 W	1.42
808.8	5.06	303.12	808.7	10.3	289.1	3.37 N	9.72 W	3.12

Final Station Closure: Distance: **10.29 m** Az: **289.10 °**

Casing and Cementing Report

Well Name	ANADARKO ARROWHEAD RIVER J-74		**Well License Number**	1987	
Event	ORIG COMPLETION	18/03/03	**Well License Date**	20/02/03	
Objectives	DEVELOPMENT COMPLETION		**Field**	CHINKEH	
Rig Name & No.	CONCORD	4	**Event Final TMD / TVD**	824.00 m	/ 0.00 m
KB Elev.	517.00 m		**Sidetrack KO Depth / PB Depth**	0.00 m	/ 0.00 m
KB to GL	4.78 m	**Deviation** V	**Event Final Well Plug Back Depth/PBTVD**	0.00 m	/ 0.00 m

Component Information	Depth	Equipment Diagram	Cement Interval
19 - CASING JOINT(S) - IPSCO - 225.730 m			
	0.23 m		
	9.60 m		
	11.48 m		
	13.91 m		
	17.00 m		0.00 m - 240.00 m
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.370 m	225.73 m		
1 - CASING JOINT(S) - IPSCO - 13.450 m	226.10 m		
1 - CASING FLOAT SHOE - WEATHERFORD - 0.450 m	239.55 m		
	240.00 m		
	677.18 m		0.00 m - 824.00 m
	677.75 m		
	678.98 m		
	682.04 m		
	682.30 m		
	682.45 m		
	824.00 m		

String Details

ANADARKO ARROWHEAD RIVER J-74 **ORIG COMPLETION10/03/03** **<no data>**

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	11/03/03	INSTALLED	240.0 m	240.0 m		0.0 m
PACKER ASSEMBL	27/03/03	INSTALLED	682.5 m	682.5 m	SURFACE EQUIPME	0.0 m

SURFACE CASING **Status:** INSTALLED **Install Date:** 11/03/03 **String Length:** 240.0 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
19	CASING JOINT(S)	225.730 m	202.49 mm	219.08 mm	K55	35.72 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.370 m	202.49 mm	219.08 mm	K55	35.72 kg/m	225.73 m
1	CASING JOINT(S)	13.450 m	202.49 mm	219.08 mm	K55	35.72 kg/m	226.10 m
1	CASING FLOAT SHOE	0.450 m	0.00 mm	19.05 mm	K55	35.72 kg/m	239.55 m

PACKER ASSEMBLY **Status:** INSTALLED **Install Date:** 27/03/03 **String Length:** 682.5 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
1	TUBING HANGER	0.230 m	59.61 mm	73.00 mm	J55	9.67 kg/m	0.00 m
1	TUBING JOINT(S)	9.370 m	59.61 mm	73.00 mm	J55	9.67 kg/m	0.23 m
1	PUP JOINT	1.880 m	59.61 mm	73.00 mm	J55	9.67 kg/m	9.60 m
1	PUP JOINT	2.430 m	59.61 mm	73.00 mm	J55	9.67 kg/m	11.48 m
1	PUP JOINT	3.090 m	59.61 mm	73.00 mm	J55	9.67 kg/m	13.91 m
70	TUBING JOINT(S)	660.180 m	59.61 mm	73.00 mm	J55	9.67 kg/m	17.00 m
1	ON-OFF TOOL	0.570 m	59.61 mm	73.00 mm	J55	9.67 kg/m	677.18 m
1	PACKER	1.230 m	59.61 mm	73.00 mm	J55	9.67 kg/m	677.75 m
1	PUP JOINT	3.060 m	48.29 mm	60.33 mm	J55	6.99 kg/m	678.98 m
1	NO GO NIPPLE	0.260 m	48.29 mm	60.33 mm	J55	6.99 kg/m	682.04 m
1	RE-ENTRY GUIDE	0.150 m	48.29 mm	60.33 mm	J55	6.99 kg/m	682.30 m

Cement Data

ANADARKO ARROWHEAD RIVER J-74 | ORIG COMPLETION | 10/03/03 | <no data>

Job Type: Primary | Date: 12/03/03 | Contractor: SAMUEL

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
STAGE 1	TAIL	NEAT + 3% CAC	CLASS G	0.00 m	240.00 m	15.5 m^3

Job Type: Primary | Date: 10/03/03 | Contractor: SAMUEL

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	LEAD	THIXMIX II	CLASS G	0.00 m	824.00 m	17.1 m^3

Anadarko Arrowhead River

J-74

Well Summary

Initial Completion

March 19/03 To March 27/03

Supervisor: Joe Graves

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 3/10/2003
Event Name: ORIG COMPLETION Start: 3/18/2003 End: 3/27/2003
Contractor Name: Rig Release: Group:
Rig Name: Rig Number:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/19/2003	08:00 - 08:15	0.25	48		EVALPR	HOLD SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.
	08:15 - 10:00	1.75	30	A	EVALPR	MOVE IN AND RIG UP CONCORD WELL SERVICING, HI TECH ANCHORS AND COOPER CAMERON, RIG UP SERVICE RIG TO ACC AND BCOGC SPECS. DRILL AND PULL TEST 4 ANCHORS. INSTALL TUBING HANGER SPOOL AND PRESSURE TEST TO 16, 500 KPA
	10:00 - 11:00	1.00	30	F	EVALPR	FUCTION AND PRESSURE TEST BOP TO A LOW OF 1.4 KPA AND A HIGH OF 21,000 KPA, ON THE BOTTOM ELEMENTS. PRESSURE TEST THE ANNULUR TO A LOW OF 1.4 KPA AND A HIGH TO 10,000 KPA. ALL TESTS LOOK GOOD.
	11:00 - 11:30	0.50	39	A	EVALPR	MOVE IN AND RIG UP IPS EWL UNIT, MAKE UP AND RUN IN THE HOLE WITH THE GUAGE RING AND JUNK BASKET, TAG PLUG BACK AT 797.5 MKB. PULL OUT OF THE HOLE. RUN IN THE HOLE WITH LOGGING TOOLS, LOG GR/CCL/CBL/VDL FROM 797.5 MKB TO 225.0 MKB, CEMENT BOND LOOKS GOOD. PULL OUT OF THE HOLE.
	11:30 - 15:00	3.50	31	K	EVALPR	MAKE UP AND RUN IN THE HOLE WITH A 139.7 MM CASING SCRAPER, COMPLETE WITH A 120.6 MM TOOTH BIT ON DRIFTED TUBING, TAG PBTD AT 797.5 MKB. CIRCULATE HOLE TO 3 % KCL WATER (10M3) SWAB BACK 5 M3 OF FLUID.
	15:00 - 17:00	2.00	31	K	EVALPR	POOH WITH TUBING, BIT AND SCRAPER AT 1630 HRS. SDFN AT 1700 HRS.
3/20/2003	08:00 - 09:20	1.33	35	C	EVALPR	RIG IN IPS AND PERFORATE CHINKEH FORMATION WITH 101 ERHSC, 17 SPM, 32 GRAM, 60 DEGREE PHASING 690 - 692 MKB, 695.5 - 697 MKB AND 698 - 700 MK B. TWO RUNS, NO SIGN OF GAS.
	09:20 - 11:30	2.17	31	C	EVALPR	RUN IN HOLE WITH TAIL PIPE, RE-ENTRY GUIDE, 45.97 MM "R" NIPPLE, 3 M X 60.3 MM PUP JOINT, HALLIBURTON PLS PACKER, ON-OFF TOOL WITH 47.49 MM "F" PROFILE, 71 JOINTS 73 MM TUBING, THREE 73 MM PUPS (2.43 M, 1.88 M & 3.09 M), CIRCULATE HOLE TO 3% KCL WATER (10M3), SET PACKER AT 676.86 MKB, BOTTOM OF TAIL PIPE 681.09 MKB, 46.02 MM NIPPLE AT 680.68 MKB, ON-OFF TOOL WITH 47.63 MM F PROFILE AT 675.56 MKB.PACKER IN 5000 DAN COMPRESSION, 1130 HRS.
	11:30 - 12:30	1.00	47		EVALPR	PRESSURE TEST PACKER TO 18,000 KPA FOR FIFTEEN MINUTES, TEST GOOD. BLEED OFF , REMOVE BOP'S AND INSTAL WELL HEAD
	12:30 - 18:00	5.50	47		EVALPR	SWAB TUBING DRY, RECOVERED 2 M3 OF KCL WATER, LAST FIVE SWABS DRY, NO SIGN OF GAS, RIG OUT SERVICE RIG 1800 HRS
3/23/2003	07:15 - 07:30	0.25	47		EVALPR	HOLD PREJOB SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.
	07:30 - 12:10	4.67	34	B	EVALPR	MOVE IN CAL FRAC AND ALL SUPPORT SERVICES, PREHEAT METHANOL TO 12 C AS INSTRUCTED BY WAYNE BUTLAR WITH CAL FRAC. SITP = 1200.0 KPA, RIG IN TSI WELLHEAD ISOLATION TOOL. MIX CHEMICALS IN 30.0 M3 75% MeOH / 25% POTABLE WATER, CHECK GEL QUALITY. MOVE IN D&G HOT OILER, PRESSURE TEST THE PACKER TO 21,000 KPA AND SET THE ANNULUS RELIEF VALVE AT 21,000 KPA. PRESSURE UP ON THE ANNULUS TO 18,000 KPA WITH THE HOT OILER TO HOLD BACK PRESSURE FOR THE FRAC. PRESSURE TEST TREATMENT LINES TO 65,000 KPA. START PUMPING PAD AT A RATE OF .75 M3 AND CO2 AT 1.35 SCM/MIN FOR .80 M3, HOLE FULL. COMBINED 2.2 M3 AWAY, BREAKDOWN 23.5 MPA, PAD AWAY. START PROPANT

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 3/10/2003
Event Name: ORIG COMPLETION Start: 3/18/2003 End: 3/27/2003
Contractor Name: Rig Release: Group:
Rig Name: Rig Number:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/23/2003	07:30 - 12:10	4.67	34	B	EVALPR	30/50 VALUE PROP, INCREASE RATE TO 4.2 COMBINED, TREATMENT PRESSURE 41.1 MPA, PROPANT AWAY 74.4 COMBINED AWAY, GO TO FLUSH. FLUSH AWAY AND STOP PUMPS. ISIP = 9500.0 KPA, AVAERAGE TREATMENT PRESSURE 41,000 KPA, TOTAL SAND TO FORMATION 9.85 TONNE, 332 SAND CONCENTRATION AT THE PERFS. TOTAL FLUID PUMPED 25.0 M3, TOTAL CO2 = 51.8 SCM, AFTER 5 MINUTE SHUT IN PERIOD = 8.800 MPA. RIG OUT FRAC CREW, TSI REPRESENITIVE REPORTS THAT THE SEALING RUBBER OFF OF THE STINGER WAS MISSING FROM THE TOOL.
	12:10 - 18:00	5.83	32	A	EVALPR	SITP = 6900.0 KPA, SICP = 8100.0 KPA. OPEN UP THE WELL TO CLEANUP ON A 12.7 MM CHOKE, TUBING PRESSURE FELL TO 5500.0 KPA. CONTINUE TO FLOW FOR 30 MINUTES, FTHP = 5500.0 KPA. INCREASE CHOKE TO A 19.05 MM, TUBING PRESSURE CONTINUES TO FALL. FLUID SAMPLES ARE SHOWING A SALINITY OF 80,000 PPM WITH A PH = 7. FLUID CUTS ARE ALSO SHOWING SAND CUTS RANGING FROM 40% TO 2%, NO BURNABLE GAS TO SURFACE. AFTER FLOWING THE WELL FOR 6 HRS, FTHP = 375.0 KPA, SICP = 7250.0 KPA. FLUID SAMPLES ARE SHOWING A TRACE OF SAND, SALINITY = 40,000 PPM WITH A PH = 7, NO BURNABLE GAS TO SURFACE. TOTAL FLUID RECOVERD TODAY 9.0 M3, TOTAL FLUID LEFT TO RECOVER 16.0 M3. WELL SHUT IN TO STOP COCK, REFER TO ARCTIC ENERGY FIELD NOTES FOR FURTHER DETAILS, SDFN AT 1800 HRS.
3/25/2003	00:00 - 03:00	3.00	32	A	EVALPR	RECORD PRESSURES FOR THREE HRS, FINAL TUBING SHUT IN TUBING PRESSURE 3920 KPA
	03:00 - 04:00	1.00	32	A	EVALPR	OPEN WELL ON 38.10 MM CHOKE FOR ONE HR, NO SIGN OF BURNABLE GAS.
	04:00 - 08:00	4.00	32	D	EVALPR	SHUT IN WELL FOR 4 HR BUILD UP, FINAL TUBING SHUT IN PRESSURE 3890 KPA.
	08:00 - 11:00	3.00	41	B	EVALPR	PULL FOUR SWABS IN FOUR HRS. WITH NO FLUID RECOVERED, NO BURNABLE GAS, SHUT IN FOR BUILD UP.
	11:00 - 14:00	3.00	32	D	EVALPR	THREE HR SHUT IN , TUBING PRESSURE 3150 KPA
	14:00 - 17:00	3.00	32	D	EVALPR	OPEN WELL ON 19.05 MM CHOKE AT 1400 HRS, GAS RATE AT 1500 HRS 3.164 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 35 KPA., RATE 2.523 10/3-M/3 AT 1630 HRS AND PRESSURE DOWN TO 20 KPA. SHUT IN WELL AT 1700 HRS
	17:00 - 23:59	6.98	33		EVALPR	RIG IN RAPID WIRELINE AND RUN TANDEM RECORDERS, SET ON DART IN "R" NIPPLE AT 676 MCF AT 2127 HRS. SHUT IN FOR TWO HRS, OPEN WELL ON TWO HR CLEAN UP THEN START 36 HR TEST.
3/26/2003	00:00 - 01:30	1.50	32	D	EVALPR	SHUT IN CLEAN UP FLOW TEST AT 0130 FOR 12 HRS. GAS RATE 3.285 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE DOWN TO 3 KPA, NO FLUID RECOVERED
	01:30 - 13:30	12.00	32	D	EVALPR	FINAL TUBING SHUT IN PRESSURE 3716 KPA AFTER 12 HRS.
	13:30 - 16:00	2.50	32	D	EVALPR	OPEN WELL ON 19.05 MM CHOKE WITH 25.4 MM ORFICE PLATE IN PLACE AT 1330 HRS. GAS RATE AT 3.226 10/3-M/3 PER DAY WITH TUBING FLOWING PRESSURE OF 21 KPA. NO FLUID RECOVERED TO 1600 HRS
	16:00 - 19:00	3.00	32	D	EVALPR	GAS RATE 1.991 10/3-M/3 AT 1900 HRS AND TUBING FLOWING PRESSURE 10 KPA. NO FLUID RECOVERED.
3/27/2003	08:00 - 08:15	0.25	48		EVALPR	HOLD PREJOB SAFETY MEETING WITH ALL PERSONNEL, FILL OUT THE ACC SAFE WORK PERMIT.

Anadarko Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74 Spud Date: 3/10/2003
Event Name: ORIG COMPLETION Start: 3/18/2003 End: 3/27/2003
Contractor Name: Rig Release: Group:
Rig Name: Rig Number:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/27/2003	08:15 - 01:00	16.75	32	D	EVALPR	AT 08:00 AM, THE CHINKEH FORMATION IS FLOWING ON A 19.05 MM CHOKE, FTHP = 10.0 KPA, GAS RATE = 1.343 E3M3/D, WATER PRODUCTION = 0. AS THE WELL CONTINUES TO FLOW, GAS PRODUCTION IS SLOWLY DECREASING, AT 12:00 AM, FTHP = 10.0 KPA, GAS RATE = 1.227 E3M3/D, WATER PRODUCTION = 0. AT 15:00 FTHP = 103 KPA, GAS RATE = 1.024 E3M3/D, WATER PRODUCTION = 0. AT 18:00 FTHP = 103 KPA, GAS RATE = 0.971 E3M3/D, WATER PRODUCTION = 0. TESTERS OBTAINED 2 GAS SAMPLES AND 2 WATER SAMPLES FOR THE LAB, CONTINUE TO FLOW THE WELL AS INSTRUCTED. AT 01:00 AM THE WELL WAS SHUT-IN, FTHP = 103.0 KPA, GAS RATE = 0.868 E3M3/D, WATER PRODUCTION = 0. THROUGHT THE SINGLE POINT TEST, TOTAL GAS PRODUCED = 3.230 E3M3/D, TOTAL WATER PRODUCED = 9.58 M3. TESTERS TO RIG OUT AS INSTRUCTED, TESTING EQUIPMENT TO BE RACKED AT THE ANADARKO STAGING AREA IN FORT LIARD, TO WAIT ON TRUCKS

Anadarko Canada Corporation

Wellbore Equipment Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74
Common Well Name: ARROWHEAD RIVER J-74
Event Name: ORIG COMPLETION

Report #: 1
Start: 18/03/2003

Spud Date: 10/03/2003
Report Date: 27/03/2003
End: 27/03/2003

Assembly Name: PACKER ASSEMBLY
Suspended From: SURFACE EQUIPMENT @ (m)
TMD Correction: (m)
Landed TMD: 682.45 (m)

Install Date: 27/03/2003
Pull Date:
Final String Weight: (daN)
Landed Weight: (daN)

Nom. Size (mm)	Component	Description	# Jts	I.D. (mm)	O.D. (mm)	Weight (kg/m)	Grade	Length (m)	Top Set (m)	Manufacturer	Model #	Connection	Comments
73.00	TUBING HANGER	139.7 MM X 73.0 MM C/W BPV THRDS	1	59.61	73.03	9.67	J55	0.23		IPSCO		EUE	
73.00	TUBING JOINT(S)	IPSCO	1	59.61	73.03	9.67	J55	9.37	0.23	IPSCO		EUE	
73.00	PUP JOINT	IPSCO	1	59.61	73.03	9.67	J55	1.88	9.60	IPSCO		EUE	
73.00	PUP JOINT	IPSCO	1	59.61	73.03	9.67	J55	2.43	11.48	IPSCO		EUE	
73.00	PUP JOINT	IPSCO	1	59.61	73.03	9.67	J55	3.09	13.91	IPSCO		EUE	
73.00	TUBING JOINT(S)	IPSCO	70	59.61	73.03	9.67	J55	660.18	17.00	IPSCO		EUE	
73.00	ON-OFF TOOL	HALLIBURTON ON/OFF C/W 47.63 MM BAKER F	1	59.61	73.03	9.67	J55	0.57	677.18	IPSCO		EUE	
73.00	PACKER	139.7 MM HALLIBURTON PLS 10K	1	59.61	73.03	9.67	J55	1.23	677.75			EUE	
60.33	PUP JOINT	IPSCO	1	48.29	60.33	6.99	J55	3.06	678.98	IPSCO		EUE	
60.33	NO GO NIPPLE	48.02 MM BAKER R PROFILE C/W 44.70 NO/GO	1	48.29	60.33	6.99	J55	0.28	682.04	BAKER		EUE	
60.33	RE-ENTRY GUIDE	IPSCO	1	48.29	60.33	6.99	J55	0.15	682.30	IPSCO		EUE	

Anadarko Canada Corporation

Final Pipe Tally Report

Legal Well Name: ANADARKO ARROWHEAD RIVER J-74 Spud Date: 10/03/2003
Common Well Name: ARROWHEAD RIVER J-74 Report #: 1 Report Date: 26/02/2003
Event Name: ORIG COMPLETION Start: 18/03/2003 End: 27/03/2003

Date Run: 26/02/2003 Proposed Setting TMD: (m)
Buoyancy Factor: Block Weight: (daN)

Pipe Information

Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct	Run #	Jnt #	Description	Jnt Length (m)	Cum Lgth. (m)	Ct
1			9.37	9.37		37			9.57	347.73	
2			9.57	18.94		38			9.64	357.37	
3			9.58	28.52		39			9.25	366.62	
4			9.62	38.14		40			9.26	375.88	
5			9.58	47.72		41			9.49	385.37	
6			9.58	57.30		42			9.37	394.74	
7			9.57	66.87		43			9.57	404.31	
8			9.56	76.43		44			9.26	413.57	
9			9.58	86.01		45			9.33	422.90	
10			9.30	95.31		46			9.57	432.47	
11			9.56	104.87		47			8.55	441.02	
12			9.25	114.12		48			9.30	450.32	
13			9.56	123.68		49			9.58	459.90	
14			9.48	133.16		50			9.30	469.20	
15			9.31	142.47		51			9.26	478.46	
16			9.30	151.77		52			9.28	487.74	
17			9.25	161.02		53			9.50	497.24	
18			9.27	170.29		54			9.60	506.84	
19			9.31	179.60		55			9.27	516.11	
20			9.45	189.05		56			9.47	525.58	
21			8.99	198.04		57			9.24	534.82	
22			9.20	207.24		58			9.60	544.42	
23			9.35	216.59		59			9.35	553.77	
24			9.18	225.77		60			9.57	563.34	
25			8.95	234.72		61			9.26	572.60	
26			9.54	244.26		62			9.58	582.18	
27			9.29	253.55		63			9.55	591.73	
28			9.50	263.05		64			9.55	601.28	
29			9.27	272.32		65			9.39	610.67	
30			9.28	281.60		66			9.56	620.23	
31			9.56	291.16		67			9.87	630.10	
32			9.25	300.41		68			9.24	639.34	
33			9.22	309.63		69			9.25	648.59	
34			9.58	319.21		70			9.51	658.10	
35			9.58	328.79		71			9.48	667.58	
36			9.37	338.16							

Anadarko Canada Corporation

Perforating Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER J-74			Spud Date:	10/03/2003
Common Well Name:	ARROWHEAD RIVER J-74	Report #:	1	Report Date:	20/03/2003
Event Name:	ORIG COMPLETION	Start:	18/03/2003	End:	27/03/2003

General

Contractor:	IPS WIRELINE	Supervisor:	JOE GRAVES 250-261-0
Job Method:	PERFORATE	Conveyed Method:	WIRELINE
Perforated Assembly:	PRODUCTION CASING		

Initial Conditions

Fluid Type:	KCL WATER	Fluid Density:	(kg/m³)
Surf. Pressure:	(kPa)	Res. Pressure:	(kPa) @ (m)
Fluid Level TVD:	(m)	Fluid Head TVD:	(m)
Hydro Pressure:	(kPa)	Pressure Diff.:	(kPa)
Condition:			

Summary

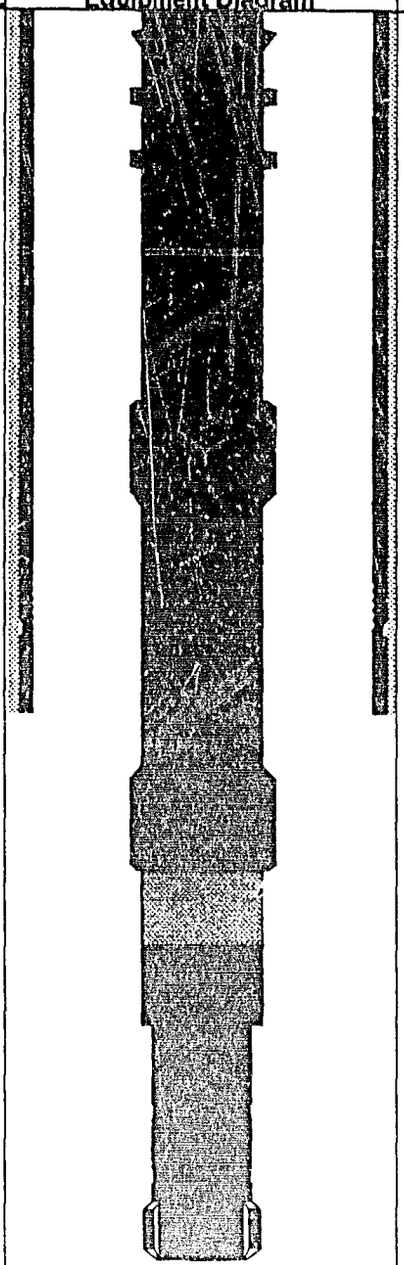
Gross Int.:	690.00 to 700.00 (m)	Start Date:		Time:	08:00
# of Int.:	1	End Date:		Time:	09:00
Total Shots:	94	Net Shot:	5.5 (m)		
AV Shot Dens.:	17.00 (/m)	Final Surface Pressure:	(kPa)		
		Final Surf. Pres. Date:		Time:	:

Perforated Intervals

Date/ Time	Formation / Pool Name	CCL @ (m)	CCL-TS (m)	TS-BS (m)	Top (m)	Base (m)	S/(/m)	Add Shot/ Misfires	Diam. (mm)	Carr. Type / Carr. Manuf.	Cr. Size (mm)	Phasing (°)	Charge Desc. / Charge Manuf.	Cg. Size (g)	Type / Reason	Misrun
20/03/2003 08:00	CHINKEH /	697.00	1.00	2.00	698.00	700.00	17.00	/		EHC / GRISS		60.000	/	32.00	/	
20/03/2003 08:30	CHINKEH /	694.50	1.00	1.50	695.50	697.00	17.00	/		EHC / GRISS		60.000	/	32.00	/	
20/03/2003 09:00	CHINKEH /	689.00	1.00	2.00	690.00	692.00	17.00	/		EHC / GRISS		60.000	/	32.00	/	

Summary Information

Well Name	ANADARKO ARROWHEAD RIVER J-74	**Well License #**	1987
Event	ORIG COMPLETION 18/03/2003	**Spud Date**	10/03/2003
Event 2nd Obj	COMPLETION - GAS	**Rig Name**	CONCORD 4
Field	CHINKEH	**TMD**	824.00 m
Lahee	OUT	**TVD**	0.00 m
KB Elev.	517.00 m	**AFE Cost**	0

PERF INTVL	Equipment Diagram	TMD
139.7 MM X 73.0 MM C/W BPV THRDS - IPSCO -		
IPSCO - IPSCO -		0.23 m
IPSCO - IPSCO -		9.60 m
IPSCO - IPSCO -		11.48 m
IPSCO - IPSCO -		13.91 m
IPSCO - IPSCO -		17.00 m
		240.00 m
HALLIBURTON ON/OFF C/W 47.63 MM BAKER F - IPSCO -		677.18 m
139.7 MM HALLIBURTON PLS 10K - -		677.75 m
IPSCO - IPSCO -		678.98 m
46.02 MM BAKER R PROFILE C/W 44.70 NO/GO - BAKER -		682.04 m
IPSCO - IPSCO -		682.30 m
		682.45 m
		824.00 m

Anadarko Canada Corporation

Stimulation Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER J-74			Spud Date:	3/10/2003
Common Well Name:	ARROWHEAD RIVER J-74	Report #:	1	Report Date:	3/23/2003
Event Name:	ORIG COMPLETION	Start:	3/18/2003	End:	

Summary

Contractor:	CAL FRAC	Job Type:	FRACTURE TREATMENT	CTU Used:	N
Supervisor:	MIKE TKACHANKO 250-2	Stimulation Type:	ENERGIZED SAND FRAC	Zone:	CHINKEH
Start/End Time:	10:33 / 10:53	Gross Interval:	690.00 / 700.00 (m)	Net Stim:	(m)

Rates and Pressure

Initial Rate:	0.08 (m³/min) @ 1,200 (kPa)	Net Pressure Trend:	FLAT
Final Rate:	4.40 (m³/min) @ 41 (kPa)	ISIP:	9,500
Min. Rate:	0.08 (m³/min) @ 1,200 (kPa)	FSIP:	8,800 (kPa) @ 5 (min)
Max. Rate:	4.40 (m³/min) @ 44 (kPa)	Max/Min Job Pressure:	44,000 (kPa) / 41,000 (kPa)
Average Rate:	4.40 (m³/min) @ 41,000 (kPa)	Break Pressure:	23,500

Tubing Data

Pumped Down:	TUBING	Bridge Plug TMD:	(m)
Tubing TMD:	681.09 (m)	Packer TMD:	676.86 (m)
Tubing Weight:	9.67 (kg/m)	Tool Description:	
Tubing Size:	73.00 (mm)		

Volume Summary

Total CO2 Used:	58.8 (SCM)	Proppant In Formation:	9.90 (tonne)	Pad:	8.20 (m³)
Total N2 Used:	(SCM)	Proppant Remaining:	(tonne)	Main Body:	15.40 (m³)
Max Gas Rate:	14 (SCM)	Screened Out:	N	Flush:	0.60 (m³)
Total Gas Used:	58 (M3)			Total Pumped:	24.20 (m³)

Stage 1

Stage:	PUMP PAD	Packer TMD:	(m)
Interval:	690.00 - 700.00 (m)	Frac Grade Init/Fin:	/
Time Start/End:	: / :	Friction Pressure:	
TBG Press Start/End:	1,200 / 24,000 (kPa)	Friction Factor (CSG):	
TBG TMD:	(m)	Friction Factor (OH):	
CSG Press. Start/End:	14,000 / 17,500 (kPa)	Diversion Methond:	
Rate Start/End:	0.800 / 0.800 (m³/min)	Element Spacing:	
Proppant:		Ball Sealers Used/Rtnd:	/
Proppant Used:	(tonne)	Gas Volume:	
Proppant Size:	()	Gas Type:	
Proppant Conc:	(kg/m³)	AVG Rate:	
CTU Press Start/End:	/ (kPa)		
CTU TMD:	(m)		

Anadarko Canada Corporation

Stimulation Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER J-74			Spud Date:	3/10/2003
Common Well Name:	ARROWHEAD RIVER J-74	Report #:	1	Report Date:	3/23/2003
Event Name:	ORIG COMPLETION	Start:	3/18/2003	End:	

Stage 2

Stage:	RAMP 1	Packer TMD:	(m)
Interval:	690.00 - 700.00 (m)	Frac Grade Init/Fin:	/
Time Start/End:	: / :	Friction Pressure:	
TBG Press Start/End:	38,000 / 43,000 (kPa)	Friction Factor (CSG):	
TBG TMD:	(m)	Friction Factor (OH):	
CSG Press. Start/End:	17,000 / 17,100 (kPa)	Diversion Methond:	
Rate Start/End:	4.200 / 4.200 (m^3/min)	Element Spacing:	
Proppant:		Ball Sealers Used/Rtnd:	/
Proppant Used:	(tonne)	Gas Volume:	
Proppant Size:	()	Gas Type:	
Proppant Conc:	(kg/m^3)	AVG Rate:	
CTU Press Start/End:	/ (kPa)		
CTU TMD:	(m)		

Stage 3

Stage:	FLUSH	Packer TMD:	(m)
Interval:	690.00 - 700.00 (m)	Frac Grade Init/Fin:	/
Time Start/End:	: / :	Friction Pressure:	
TBG Press Start/End:	42,000 / 44,000 (kPa)	Friction Factor (CSG):	
TBG TMD:	(m)	Friction Factor (OH):	
CSG Press. Start/End:	17,000 / 16,200 (kPa)	Diversion Methond:	
Rate Start/End:	4.200 / 4.200 (m^3/min)	Element Spacing:	
Proppant:		Ball Sealers Used/Rtnd:	/
Proppant Used:	(tonne)	Gas Volume:	
Proppant Size:	()	Gas Type:	
Proppant Conc:	(kg/m^3)	AVG Rate:	
CTU Press Start/End:	/ (kPa)		
CTU TMD:	(m)		

Work Fluid: 1

Name:	FRESH WATER	Volume Pumped:	7.00 ()
Type:	WATER	Volume Circulated.:	
Kill Fluid:		Volume Squeezed:	7.00
Units:	M3	Density:	-100.0

Work Fluid: 2

Name:	CARBON DIOXIDE	Volume Pumped:	58.80 ()
Type:	GAS	Volume Circulated.:	
Kill Fluid:		Volume Squeezed:	58.80
Units:	M3	Density:	

Anadarko Canada Corporation

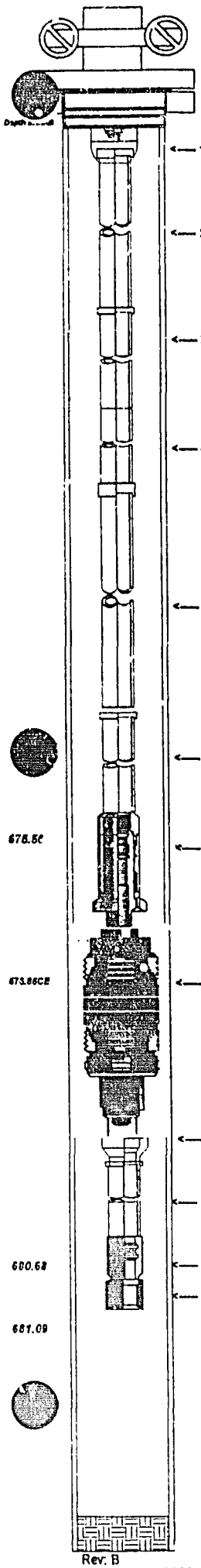
Stimulation Report

Legal Well Name:	ANADARKO ARROWHEAD RIVER J-74			Spud Date:	3/10/2003
Common Well Name:	ARROWHEAD RIVER J-74	Report #:	1	Report Date:	3/23/2003
Event Name:	ORIG COMPLETION	Start:	3/18/2003	End:	

Work Fluid: 3

Name:	METHANOL	Volume Pumped:	23.00 ()
Type:	WATER	Volume Circulated.:	
Kill Fluid:		Volume Squeezed:	23.00
Units:	M3	Density:	

HALLIBURTON



			S.O. #	2349300	
ANADARKO CANADA ENERGY		Joe Graves	(250) 261-4889	3/19/2003	
Arrowhead		J-74	B.C.	Packer	
Tubular	Size mm	Weight & Grade kg/m	Thread	Depth mKB	I.D. mm	Drift I.D. mm
Casing	139.70	20.80	LT&C		127.70	124.10
Liner	0.00	0.00				
Tubing	73.00	9.67 J-55	EUE	681.09	62.00	59.61
Tubing	0.00	0.00				
Weights	Initial String WT	Transfer Weight	Slackoff WT	Hole Drag		
DaN	5500.00	5000.00	500.00			
Fluids	Fluid Type	Fluid WT kg/m3	Spec. Grav.	Pressure tested		Hydrostatic
Tubing	3% KCL	1017.00	1.02			6800.00
Annulus	3% KCL	1017.00	1.02			6800.00
Data	Kickoff Depth	Deviation Angle	H2S	Co2	BHT	BHP
Perfs	690 - 692	695.5 - 697	698 - 700			
Collars	672.7	685.2				

Item	Description	I.D. mm	O.D. mm	Length m	Top depth mKB
					0.00
					0.00
					0.00
	Compression 5000 DaN				0.00
	K.B. -T.H.F.			3.94	-0.15
1.	Tubing Hanger			0.23	3.79
2.	1 Jt. 73.0mm, 9.67kg/m EUE J-55 Tubing / No Collar	62.00	73.00	9.09	4.02
3.	73.0mm x 2.4m EUE J-55 Pup Jt.	62.00	73.00	2.43	13.11
4.	73.0mm x 1.8m EUE J-55 Pup Jt.	62.00	73.00	1.88	15.54
5.	70 Jts. 73.0mm, 9.67kg/m EUE J-55 Tubing	62.00	73.00	655.08	17.42
6.	73.0mm x 3.0m EUE J-55 Pup Jt.	62.00	73.00	3.06	672.50
7.	139.7mm Halliburton "HD" On/Off Connector c/w 47.63mm Baker "F" Profile / 73.0mm EU / Auto On / Lt.Hd. Release	47.63	111.40	0.57	675.56
8.	139.7mm Halliburton "PLS" 10K Ret. Packer /73.0mm EU/ 0.73m To COE / Rt.Hd.Set / Rt.Hd. Release	62.00	119.08	1.23	676.13
9.	73.0mm EUE Box x 60.3mm EUE Pin J-55 X-Over	50.60	93.00	0.23	677.36
10.	60.3mm x 3.0m EUE J-55 Pup Jt.	50.60	60.30	3.09	677.59
11.	60.3mm " R " Nipple c/w 46.02mm Profile & 44.7mm No-Go	44.70	76.60	0.26	680.68
12.	60.3mm EUE Wireline Re-Entry Guide	50.60	82.20	0.15	680.94
					681.09
					681.09
	Packer Set @ 676.86 M.K.B. C.O.E.				681.09
	Tailpipe landed @ 681.09 M.K.B.				681.09
					681.09
	72,000 Lb. Shear Release				681.09
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COMMENTS:

Rev: B
Date: 24-Jan-2002

CALFRAC WELL SERVICES LTD.

FRAC TREATMENT REPORT

OWNER	Anadarko Canada Corp.
ADDRESS	425 - 1 st Street S.W.
CITY	Calgary, Alberta T2P-4V4

	O.D.	WT.	Depth	Vol.	Max.
Tubing	73.0	9.67	681.1	2.06	50.0
Casing	139.7	20.83	8.9	0.11	29.4
Total Volume				2.17	

Treatment Mode: 73 mm Tubing

Packer 676.0 m PBTD 797.5 m

Formation Treated: Chinkeh(Gas)

PERFORATIONS	From	To	Zone Treated	SPM
INTERVALS	690.0	692.0	X	17
	695.5	697.0	X	17
	698.0	700.0	X	17

FLUSH FLUID DENSITY	960	kg/m³
ESTIMATED SAND TOP:	785	Meters
FRACTURE GRADIENT:	23.2	kPa/m
BREAKDOWN PRESSURE:	23.5	MPa
Instantaneous Shut In Pressure:	9.5	MPa
ONE Minute Shut In Pressure:	9.2	MPa
5 Minute Shut In Pressure:	8.8	MPa

	MIN.	MAX.	AVE.	UNITS
PRESSURE	38.0	46.5	41.0	MPa
FLUID RATE	0.8	1.5	1.5	m3/min
KILOWATTS	475	1163	1025	kW
TOTAL AVAILABLE KW		4500	3	Units

SERVICE ORDER NO:	32757	DATE:	March 23, 2003
JOB TYPE:	10 Tonne CWS-300 Frac.		
WELL NAME AND NO.:	Anadarko SW Arrowhead		
LOCATION:	J-74		
FLUID TYPE:	Water/Methonal/ Co2	PROGRAM:	FTC209JE

TREATING MATERIALS MIXED ON THE FLY:

Stage Volumes With chemical addition	Hole Fill Volume	Pad Volume	Prop. Volume	Flush Volume	Total m³
	0.8	8.2	15.4	0.6 m³	25.0

Chemical Description	Hole Fill Conc.	Pad Conc.	Prop. Conc.	Flush Conc.		Total Chemical For Job	Chemical Line Fill & Losses
DWP-301 Gellant	12.0	12.0	12.0		L/m³	292.8 L	7.2 L
DWP-302 Activator	6.0	6.0	6.0		L/m³	146.4 L	3.6 L
DWP-981 Breaker	1.3	1.3	1.3		L/m³	31.7 L	18.3 L

Amount of Fluid in Tanks Pre-Job: 30.0 m³

Amount of Fluid in Tanks Post-Job: 4.0 m³

FLUID TEMPERATURE: 15.0 °C

PROPPANT DATA

PROPPANT AGENTS	PUMPED kgs	MESH	CONC. START kg/m³	CONC. END kg/m³	IN FORM. kgs	CONC @ PERFS	TOTAL PROP (t) USED	TOTAL PROP (t) IN FORM.
30/50 ValueProp	10,105	30/50	52	332	9,850	332	10.1	9.9

CO_2 RATE:	2.7	m³/min
CO_2 RATIO:	64	%
CO_2 COOLDOWN & LOSSES:	7.0	m³
CO_2 TOTAL USED:	58.8	m³

TOTAL COMMINGLED FLUID IN FORMATION: 24.2 m³

TIME	PRESS. MPa Casing	PRESS. MPa Tubing	STAGE VOLUMES m³ CO2	Fluid	Fluid Total	RATE m³/min Blender	Downhole	Blender Sand Conc	Downhole Sand Conc.	REMARKS
10:33:47	14.0	1.2				0-0.75	0-2.1			Start hole fill . (CWS-300 & C02)
10:34:58	17.5	23.5	1.4	0.8	0.8	0.75-1.5	2.1-4.2			Hole full, start pad.
10:40:30	18.2	41.1	14.8	8.2	9.0	1.5	4.2	150	52	Pad away, start Proppant.
10:44:05	17.7	38.4	9.5	5.0	14.0	1.5	4.2	150-2200	52-332	Start proppant ramp.
10:48:52	17.1	42.7	13.6	6.0	20.0	1.5	4.2	2200	332	Ramp away ,start hold stage.
10:52:44	16.9	41.9	11.5	4.4	24.4	1.5	4.2	2200-0	332-0	Hold stage away, start flush.(CWS-300 &CO2)
10:53:10	16.2	44.9	1.1	0.6	25.0	1.5-0	4.2-0			Flush away, stop pumps.

Arrived on location 7:30 Hours

Left Location at 11:30 Hours

REMARKS:

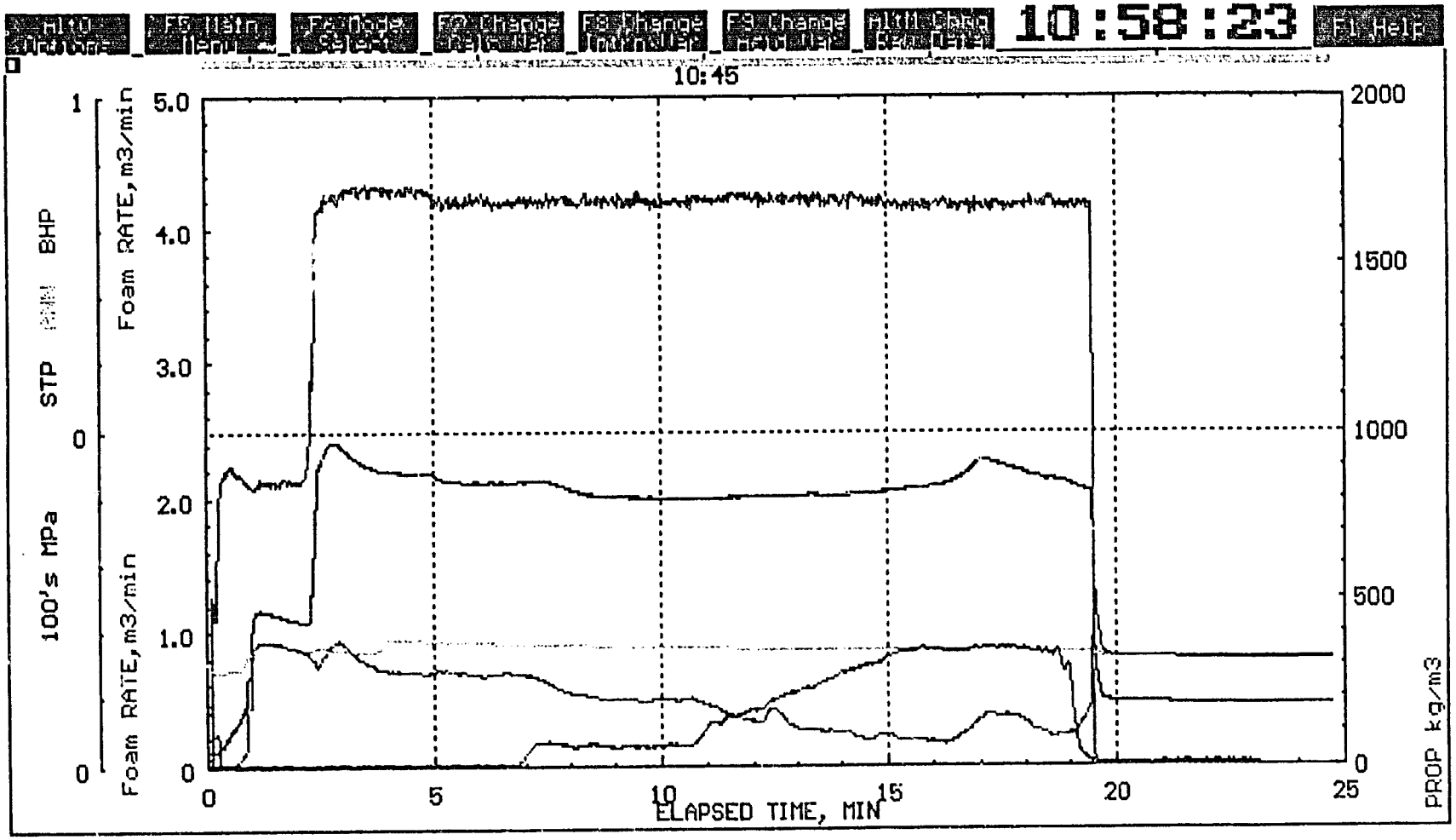
VOLUME PUMPED	51.8	25.0	m³
VOLUME IN FORMATION	50.5	24.2	m³

Pressure test surface lines to: 65.0 MPa Annular Relief: 21.0 MPa

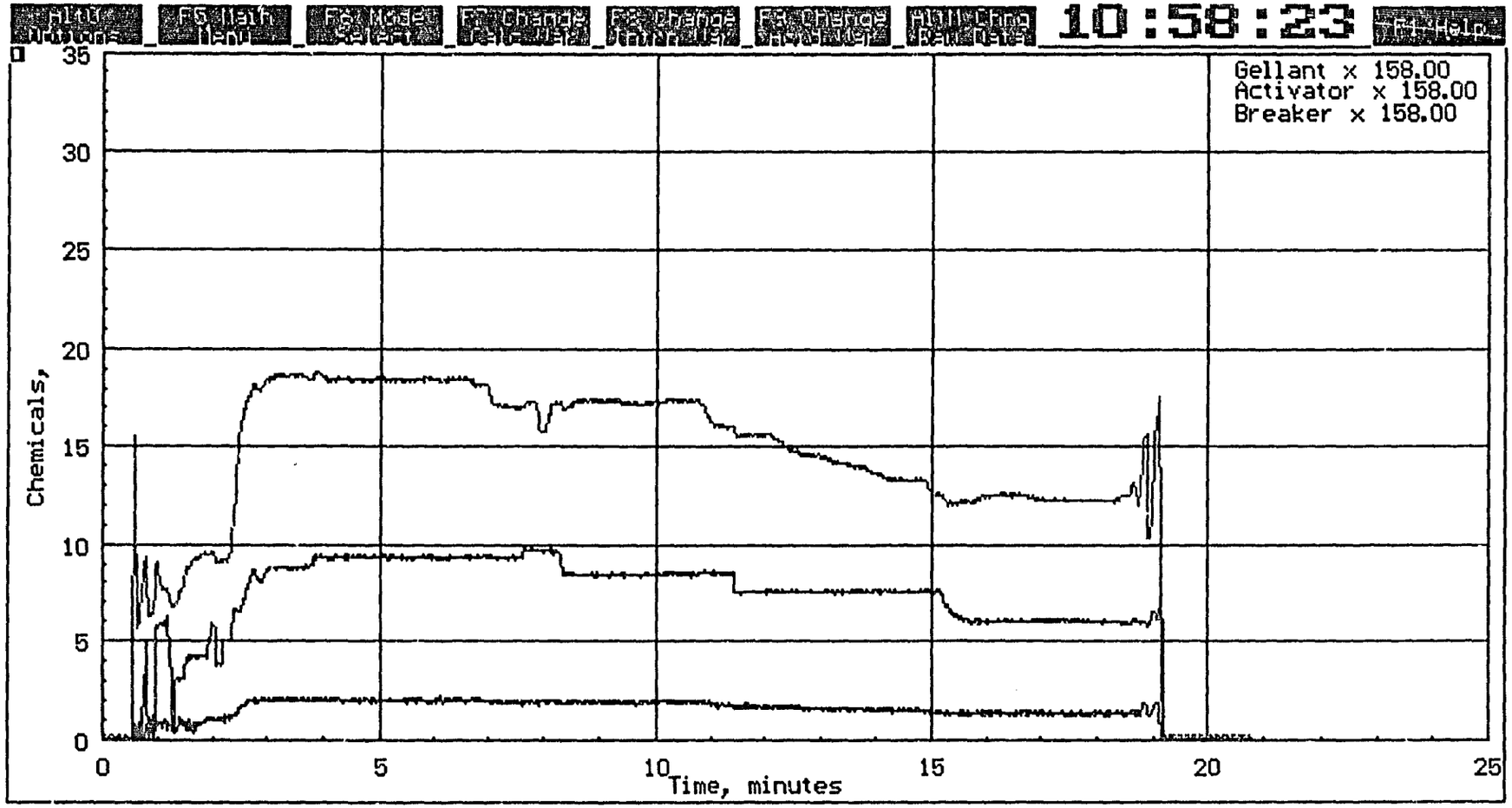
Maximum treating pressure: 58.0 MPa Hold annulus at: 18.0 MPa

CALFRAC REPRESENTATIVES: Wayne Butler, John Rodrigues

CUSTOMER REPRESENTATIVE: Joe Graves/Mike Dasanko



Keyboard commands are active. Type 'Q' to quit.



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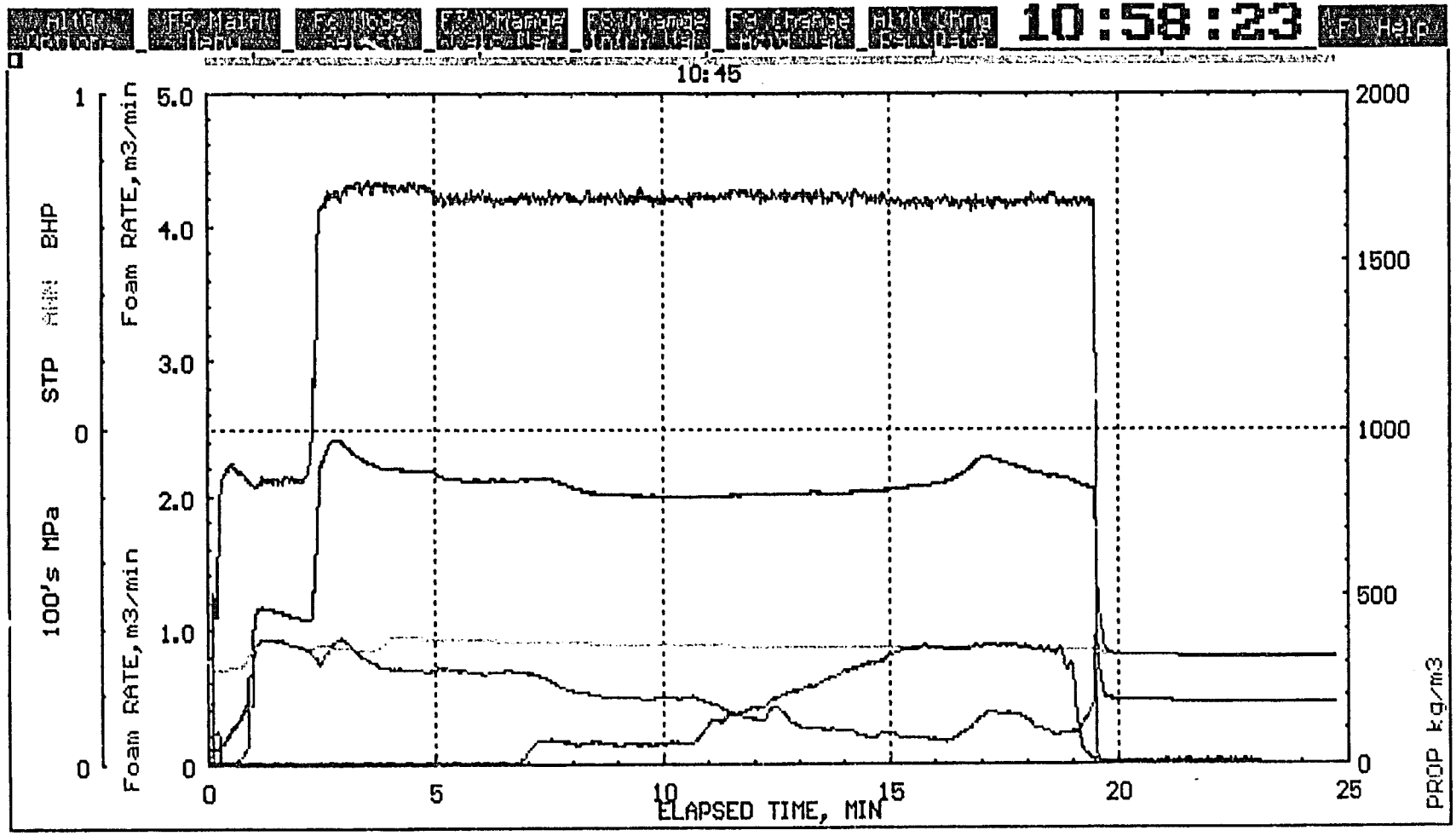

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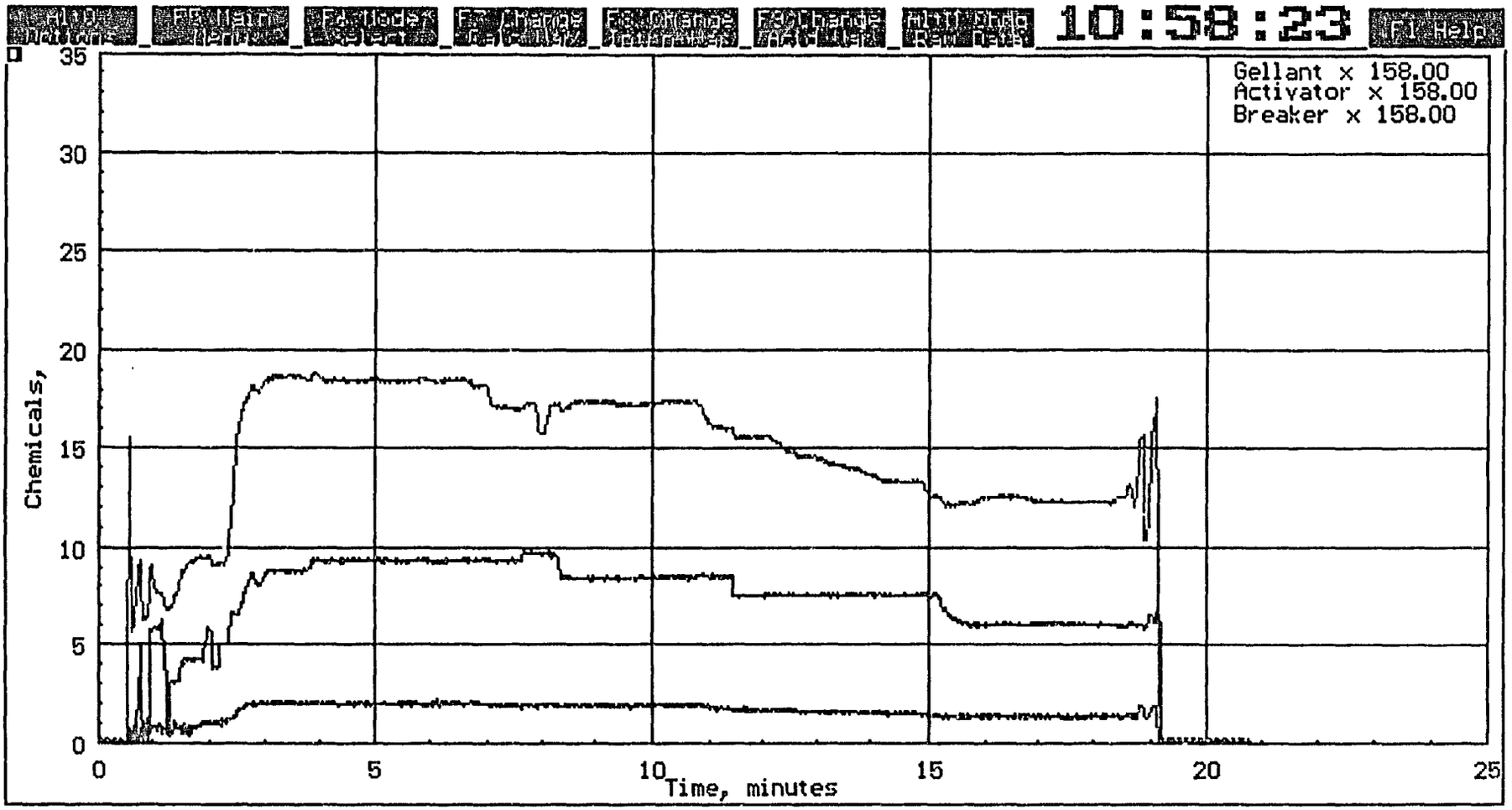

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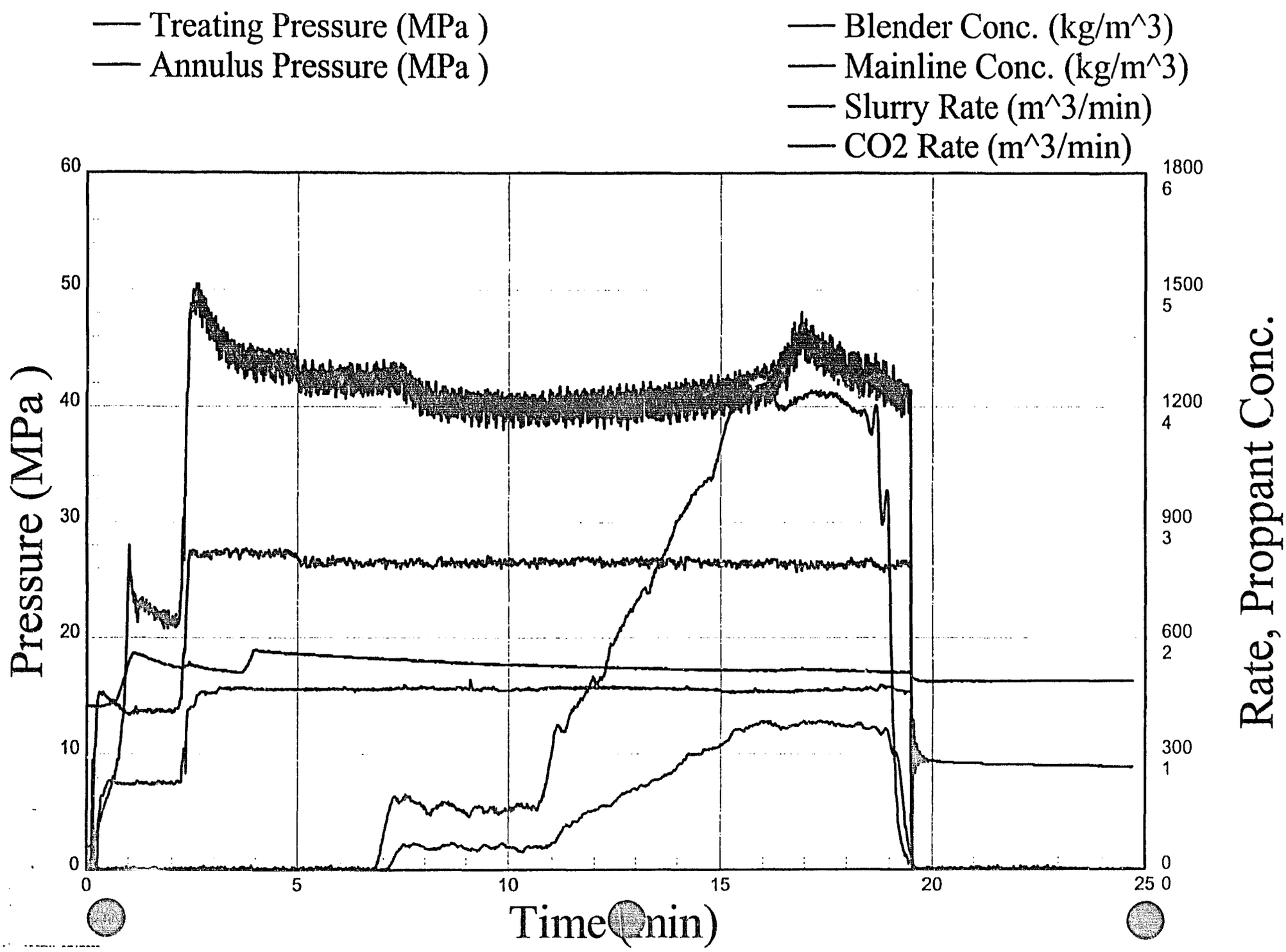
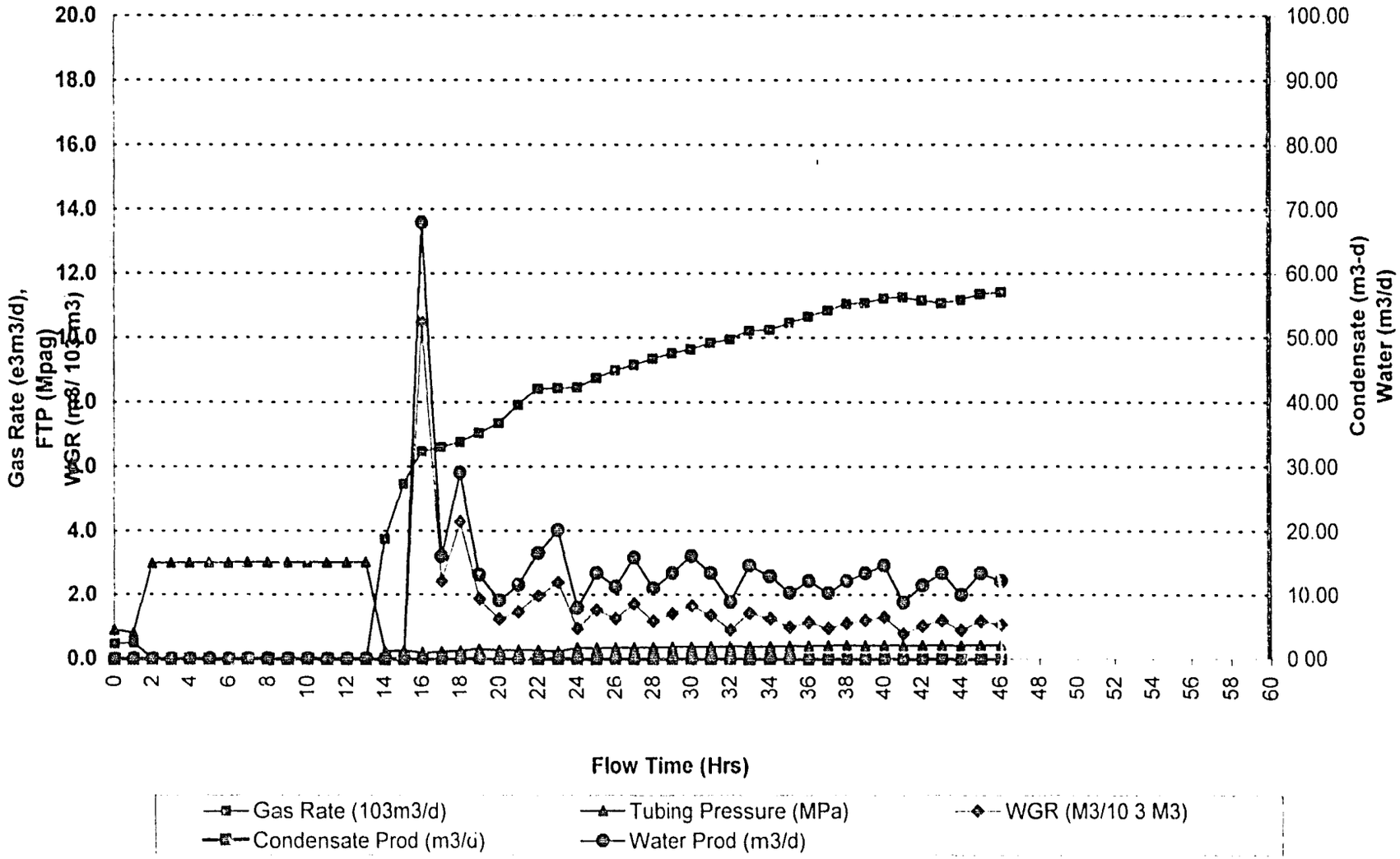
Anadarko J-74



Anadarko Arrowhead M-35 Metric
Chinkeh Formation



WELLTEST SPECIALISTS

eREPORT

ARCTIC ENERGY SYSTEMS INC. PRODUCTION TESTING

Prepared for:

Mike Varga

Anadarko Canada Corporation

#1, 875–100th Avenue sw

Fort St John, BC, V1J 1W9

Anadarko Arrowhead

J-74

Chinkeh

Single Point Test

March 23–28, 2003

WELLTEST SPECIALISTS

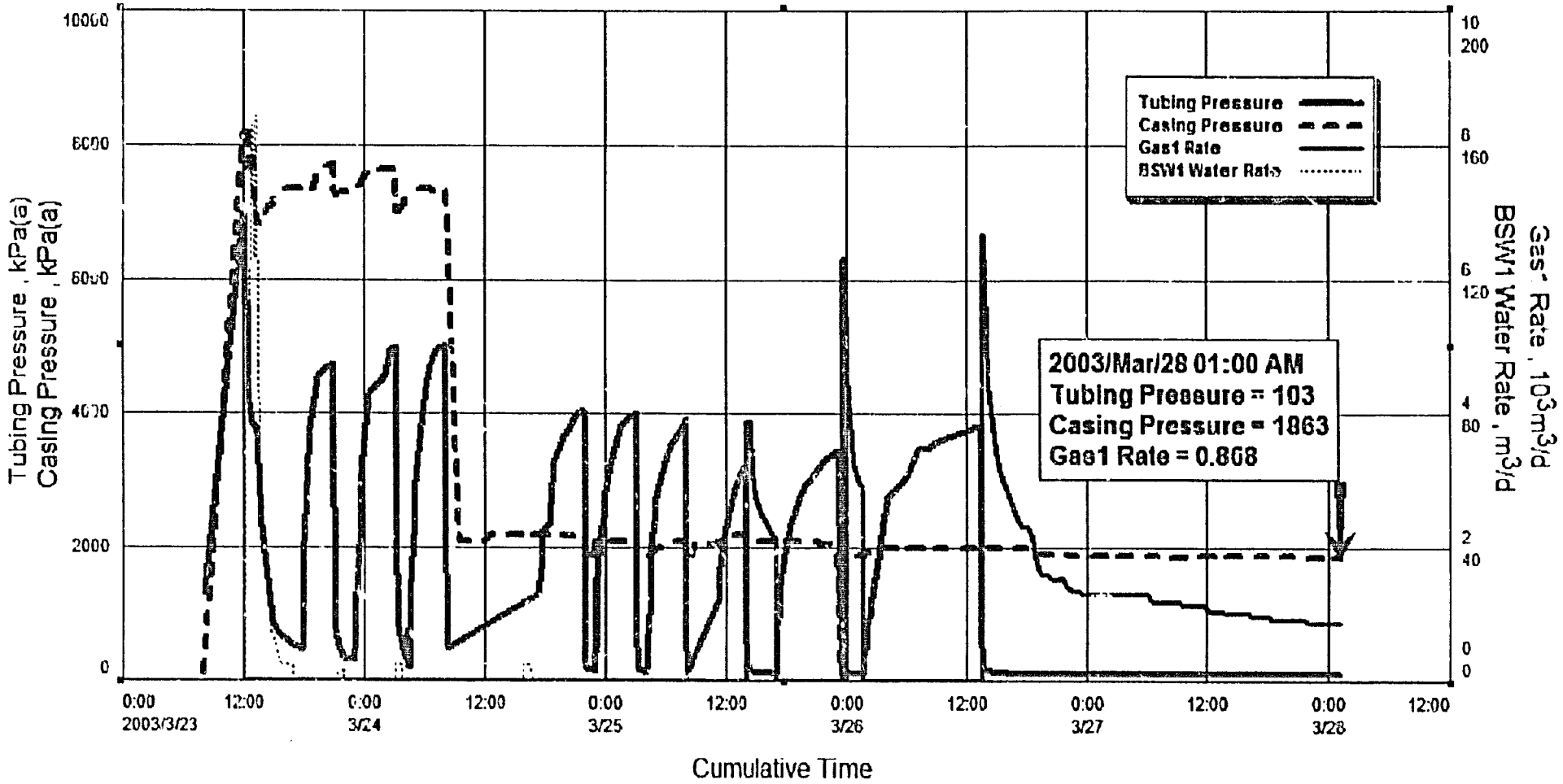
Data Validation

ARCTIC ENERGY SYSTEMS INC. PRODUCTION TESTING

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

Production Validation



GENERAL INFORMATION

Client information

Company:	Anadarko Canada Corporation		
Street Address:	#1, 875 - 100th Avenue		
City:	Fort St John	Province/State:	British Columbia
Country:	Canada	Postal Code:	V1J 1W9
Contact:	Mike Varga	Phone:	250-785-8509
E-Mail:	mike_varga@anadarko.com	Fax:	250-785-9183

Site Information

Contact:	Mike Tkachanko	Phone:	
E-Mail:		Fax:	

Well Information

Well Name:	Anadarko Arrowhead
Operator:	Anadarko Canada Corporation
Surface Location:	
Downhole Location:	J-74

Test Information

Company:	Arctic Energy Systems Inc.		
Test Rep:	Cory Young	Supervisor:	Peter Duhan
Test Type:	Single Point Test	Test Unit:	PT-03
Start Date:	2003/03/23	Start Time:	07:30:00
End Date:	2003/03/28	End Time:	01:00:00
Report Date:	2003/04/03	Job Number:	1368
Prepared By:	Lizzy Davies	Qualified By:	David Leech

Remarks:

WELL INFORMATION

Well Information

Well Name:	Anadarko Arrowhead
Operator:	Anadarko Canada Corporation
Well Location:	J-74
Surface Location:	
Field:	Arrowhead
Well Type:	Vertical
Pool:	690.0 - 700.0 mKB
Formation:	Chinkeh

Perforation Type:				
Pool Datum:		m		
Datum Depth:		mm		
Producing Through:		Size:		mm
Elevation Referenced From:	512.51	m	GL	
Elevation Referenced To:	517.00	m	KB	
Offset:	4.49	m		

Remarks:

Production Intervals

Production Interval & MPP Reference To: KB

MPP Pressure Reference:

	From - m	To - m
1	690.00	692.00
2	695.00	697.00
3	698.00	700.00

	Depth - m	Pressure - kPa
1	691.00	

Anadarko Canada Corporation
J-74
2003/03/23
2003/03/28

FieldNotes
METER REPORT

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

Orifice Meter 1

Meter Type:	Orifice	Gas Gravity(G):	0.836
Meter Size:	97.33 mm	CO2:	25.41 %
Previous Gas Production:	0.000 10^3m^3	H2S:	0.00 %
Tap Type:	F	N2:	0.84 %
Tap Location:	D	Critical Temperature (Tc):	224.50 K
		Critical Pressure (PC):	5284.00 kPa

Orifice Meter 2

Meter Type:	Orifice	Gas Gravity(G):	0.836
Meter Size:	mm	CO2:	25.41 %
Previous Gas Production:	0.000 10^3m^3	H2S:	0.00 %
Tap Type:	F	N2:	0.84 %
Tap Location:	D	Critical Temperature (Tc):	224.50 K
		Critical Pressure (PC):	5284.00 kPa

Produced Volume 1

Meter Type:	Produced Volume
Measurement Type:	C
Previous Oil Production:	0.000 m^3
Previous Water Production:	0.000 m^3
Oil Gravity:	

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
1	2003/03/23	07:30:00	0.0000		Arrive on location, Wait on calfrac to frac.																	
2		08:00:00	0.5000		1293	93																
3		10:00:00	2.5000		Attend safety meeting.																	
4		11:30:00	4.0000		Frac complete, Rig out Calfrac, 25m³ of load fluid to recover.																	
5		12:00:00	4.5000		6993	8193																
6		12:00:00	4.5000		Pressure test flowline.																	
7		12:10:00	4.6667		6593	8193			93						0.00	0.00		0.00	0.00	0.00	0.00	0.00
8		12:10:00	4.6667	0.0000	Open well on 12.7mm Choke, Fluid at surface.																	
9		12:15:00	4.7500	0.0833	5593	8193	0	12.70														
10		12:15:00	4.7500	0.0833	20% sand, Salinity - 60,000ppm, Ph - 6.																	
11		12:20:00	4.8333	0.1667	5593	8193	2	12.70														
12		12:25:00	4.9167	0.2500	5593	8193	4	12.70														
13		12:30:00	5.0000	0.3333	5593	8193	4	12.70														
14		12:30:00	5.0000	0.3333	No sign of burnable gas, 80% Sand, Salinity - 78,000ppm, Ph - 6, Increase choke size to 19.05mm.																	
15		12:45:00	5.2500	0.5833	4143	7593	4	19.05							2.01	2.01	100	2.01	2.01	0.00	0.00	2.01
16		12:45:00	5.2500	0.5833	40% Sand, Salinity - 78,000ppm, Ph - 6.																	
17		13:00:00	5.5000	0.8333	3843	7793	1	19.05							3.74	1.73	100	1.73	3.74	0.00	0.00	3.74
18		13:00:00	5.5000	0.8333	No sign of burnable gas, 40% Sand, Salinity - 78,000ppm, Ph - 6.																	
19		13:15:00	5.7500	1.0833	3818	7493	0	19.05							5.05	1.31	100	1.31	5.05	0.00	0.00	5.05
20		13:15:00	5.7500	1.0833	20% Sand, Salinity - 80,000ppm, Ph - 7.																	
21		13:30:00	6.0000	1.3333	3693	6893	2	19.05							6.80	1.75	100	1.75	6.80	0.00	0.00	6.80
22		13:30:00	6.0000	1.3333	No sign of burnable gas, 20% Sand, Salinity - 80,000ppm, Ph - 7.																	
23		14:00:00	6.5000	1.8333	2318	6793	3	19.05							7.66	0.86	100	0.86	7.66	0.00	0.00	7.66
24		14:00:00	6.5000	1.8333	No sign of burnable gas, 10% Sand, Salinity - 70,000ppm, Ph - 7.																	
25		14:30:00	7.0000	2.3333	1518	7068	4	19.05							8.23	0.57	100	0.57	8.23	0.00	0.00	8.23
26		14:30:00	7.0000	2.3333	No sign of burnable gas, 30% Sand, Salinity - 60,000ppm, Ph - 7.																	
27		14:45:00	7.2500	2.5833	Increase choke size to 38.1mm.																	
28		15:00:00	7.5000	2.8333	893	7093	4	38.10							8.52	0.29	100	0.29	8.52	0.00	0.00	8.52
29		15:00:00	7.5000	2.8333	No sign of burnable gas, 5% Sand, Salinity - 66,000ppm, Ph - 7.																	
30		15:30:00	8.0000	3.3333	743	7293	4	38.10							8.71	0.19	100	0.19	8.71	0.00	0.00	8.71
31		15:30:00	8.0000	3.3333	No sign of burnable gas, 2% sand, Salinity - 54,000ppm, Ph - 7.																	
32		16:00:00	8.5000	3.8333	643	7293	4	38.10							8.81	0.10	100	0.10	8.81	0.00	0.00	8.81
33		16:00:00	8.5000	3.8333	No sign of burnable gas, Trace of sand, Salinity - 48,000ppm, Ph - 7.																	
34		16:30:00	9.0000	4.3333	593	7343	4	38.10							8.90	0.10	100	0.10	8.90	0.00	0.00	8.90
35		[illegible]	9.0000	4.3333	No sign of burnable gas, Trace of sand, Salinity - 40,000ppm, Ph - 7.																	
[illegible]		[illegible]	9.5000	4.8333	543	7343	[illegible]								9.00	0.10	100	0.10	9.00	0.00	0.00	9.00
37		[illegible]	[illegible]		No sign of burnab[illegible] Salinity - 40,000ppm, Ph - 7.																	
38		17:[illegible]	[illegible]		518	7343	4	38.10							9.00	0.00		0.00	9.00	0.00	0.00	9.00
39		[illegible]	10.0000		No sign of burnable gas.																	

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
40	2003/03/23	18:00:00	10.5000		468	7343	3	38.10							9.00	0.00		0.00	9.00	0.00	0.00	9.00
41		18:00:00	10.5000		No sign of burnable gas, Shut in well to stop-cock.																	
42		18:00:00	10.5000					0.00														
43		18:05:00	10.5833		1493	7343																
44		18:10:00	10.6667		2093	7343																
45		18:15:00	10.7500		2493	7343																
46		18:30:00	11.0000		3393	7343																
47		18:45:00	11.2500		3793	7343																
48		19:00:00	11.5000		4093	7343																
49		19:30:00	12.0000		4543	7593																
50		20:00:00	12.5000		4643	7668																
51		20:30:00	13.0000		4693	7693																
52		21:00:00	13.5000		4733	7718									9.00	-0.00		-0.00	9.00	0.00	0.00	9.00
53		21:00:00	13.5000	4.8333	Open well on a 2.00" (38.1 mm) choke.																	
54		21:00:00	13.5000	4.8333				50.80														
55		21:05:00	13.5833	4.9167	2593	7293	-1															
56		21:10:00	13.6667	5.0000	1493	7293	0															
57		21:15:00	13.7500	5.0833	743	7243	0								9.10	0.10		0.10	9.10	0.00	0.00	9.10
58		21:15:00	13.7500	5.0833	No sign of burnable gas. 90% sand, salinity 48,000 ppm pH -7.																	
59		21:30:00	14.0000	5.3333	518	7293	0															
60		21:45:00	14.2500	5.5833	418	7293	-1															
61		22:00:00	14.5000	5.8333	333	7293	-1								9.19	0.09		0.09	9.19	0.00	0.00	9.19
62		22:00:00	14.5000		No sign of burnable gas. Trace of sand, salinity 42,000ppm, pH - 7.																	
63		22:30:00	15.0000		318	7293	-1															
64		23:00:00	15.5000		316	7293	-1								9.19	0.00		0.00	9.19	0.00	0.00	9.19
65		23:00:00	15.5000		Shut in wing valve to stop-cock.																	
66		23:05:00	15.5833		493	7293																
67		23:10:00	15.6667		693	7293																
68		23:15:00	15.7500		1343	7373																
69		23:30:00	16.0000		2068	7393																
70		23:45:00	16.2500		3093	7433																
71		23:59:00	16.4833		3593	7543																
72	2003/03/24	00:30:00	17.0000		4293	7593																
73		01:00:00	17.5000		4393	7643																
74		01:30:00	18.0000		4473	7643																
75		02:00:00	18.5000		4593	7643																
76		02:30:00	19.0000		4943	7643																
77		03:00:00	19.5000		4993	7643									9.19	0.00		0.00	9.19	0.00	0.00	9.19
78		03:00:00	19.5000	5.8333	Open well on a 2.00" (38.1 mm) choke.																	

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
79	2003/03/24	03:05:00	19.5833	5.9167	1593	6993	-1															
80		03:10:00	19.6667	6.0000	843	6993	-4															
81		03:15:00	19.7500	6.0833	793	6993	-5															
82		03:30:00	20.0000	6.3333	583	7093	-5								9.29	0.10		0.10	9.29	0.00	0.00	9.29
83		03:30:00	20.0000		No sign of burnable gas, 85% sand, salinity - 46,000 ppm, Ph- 7.																	
84		03:45:00	20.2500		468	7093	-4															
85		04:00:00	20.5000		318	7193	-4								9.29	0.00		0.00	9.29	0.00	0.00	9.29
86		04:00:00	20.5000		Shut in well to stop-cock.																	
87		04:05:00	20.5833		468	7193																
88		04:10:00	20.6667		743	7243																
89		04:15:00	20.7500		193	7243																
90		04:30:00	21.0000		1493	7293																
91		04:45:00	21.2500		2193	7293																
92		05:00:00	21.5000		2993	7293																
93		05:30:00	22.0000		3843	7343																
94		06:00.00	22.5000		4393	7343									9.29	0.00		0.00	9.29	0.00	0.00	9.29
95		06:00:00	22.5000		Total cumm fluid recovered (22 hrs) = 9.29 m^3																	
96					Total load fluid left to recover = 15.71 m^3.																	
97		06:30:00	23.0000		4743	7343																
98		07:00:00	23.5000		4893	7293																
99		07:30:00	24.0000		4993	7293																
100		08:00:00	24.5000		4993	7293																
101		08:00:00	24.5000		Open well on 2" Gutline. (38.1mm)																	
102		08:05:00	24.5833		1593	7293	-4															
103		08:10:00	24.6667		593	7093	-3															
104		08:15:00	24.7500		493	7093	4								9.29	0.00		0.00	9.29	0.00	0.00	9.29
105		08:15:00	24.7500		No sign of fluid, No sign of burnable gas, Shut in well, Rig up rapid to tag fluid / sand.																	
106		08:30:00	25.0000		Bleed off lubricator, Rig out rapid. Bleed down csg.																	
107		08:45:00	25.2500		Rig up Twylight to swab.																	
108		09:30:00	26.0000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
109		09:30:00	26.0000		Swab #1, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
110		10:00:00	26.5000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
111		10:00:00	26.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
112		10:30:00	27.0000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
113		10:30:00	27.0000		Swab #2, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
114		11:00:00	27.5000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
115		11:00:00	27.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
116		11:30:00	28.0000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
117		11:30:00	28.0000		Swab #3, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
118	2003/03/24	12:00:00	28.5000			2093	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
119		12:00:00	28.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
120		12:30:00	29.0000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
121		12:30:00	29.0000		Swab #4, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
122		13:00:00	29.5000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
123		13:00:00	29.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
124		13:30:00	30.0000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
125		13:30:00	30.0000		Swab #5, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
126		14:00:00	30.5000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
127		14:00:00	30.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
128		14:30:00	31.0000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
129		14:30:00	31.0000		Swab #6, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
130		15:00:00	31.5000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
131		15:00:00	31.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
132		15:30:00	32.0000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
133		15:30:00	32.0000		Swab #7, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
134		16:00:00	32.5000			2193	4	38.10							9.29	0.00		0.00	9.29	0.00	0.00	9.29
135		16:00:00	32.5000	6.3333	Tbg - tstm, No sign of burnable gas, No fluid.																	
136		16:30:00	33.0000	6.8333		2193	4	38.10							9.39	0.10	100	0.10	9.39	0.00	0.00	9.39
137		16:30:00	33.0000	6.8333	Swab #8, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Trace of sand, Salinity - 42,000ppm, Ph - 7, No sign of burnable gas.																	
138		17:00:00	33.5000	7.3333		2193	4	38.10							9.39	0.00		0.00	9.39	0.00	0.00	9.39
139		17:00:00	33.5000		Tbg - tstm, No sign of burnable gas, No fluid.																	
140		17:15:00	33.7500		Shut in well, Rig off swab tee, Begin to stopcock.																	
141		17:30:00	34.0000		1293	2193																
142		17:45:00	34.2500		1693	2193																
143		18:00:00	34.5000		2268	2193																
144		18:30:00	35.0000		2343	2193																
145		19:00:00	35.5000		3293	2193																
146		19:30:00	36.0000		3443	2193																
147		20:00:00	36.5000		3643	2193																
148		20:30:00	37.0000		3793	2168																
149		21:00:00	37.5000		3943	2168																
150		21:30:00	38.0000		4043	2168																
151		22:00:00	38.5000		4043	2193									9.39	0.00		0.00	9.39	0.00	0.00	9.39
152		22:00:00	38.5000		Open well on 2.00" (38.10 mm) choke.																	
153		22:00:00	38.5000					38.10														
154		22:05:00	38.5833		443	1893	-1															
155		22:10:00	38.6667		253	1893	-1															
156		22:10:00	38.6667		Burnable gas to surface. No fluid																	

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
157	2003/03/24	22:15:00	38.7500		168	1893	-1															
158		22:30:00	39.0000		168	1893	-1															
159		22:45:00	39.2500		168	1893	-1															
160		22:45:00	39.2500		No signs of burnable gas. No fluid.																	
161		23:00:00	39.5000		143	1993	-1								9.39	0.00		0.00	9.39	0.00	0.00	9.39
162		23:00:00	39.5000		No signs of burnable gas . No fluid																	
163		23:00:00	39.5000		Shut in well to stop-cock																	
164		23:05:00	39.5833		443	2093		0.00														
165		23:10:00	39.6667		873	2093																
166		23:15:00	39.7500		1573	2093																
167		23:30:00	40.0000		2168	2093																
168		23:45:00	40.2500		2443	2093																
169		23:59:00	40.4833		2843	2093																
170	2003/03/25	00:30:00	41.0000		3243	2093																
171		01:00:00	41.5000		3593	2093																
172		01:30:00	42.0000		3843	2093																
173		02:00:00	42.5000		3893	2093																
174		02:30:00	43.0000		3953	2093																
175		03:00:00	43.5000		4013	2093																
176		03:00:00	43.5000		Open well on a 2.00" (38.10 mm) choke.																	
177		03:00:00	43.5000					38.10														
178		03:05:00	43.5833		493	1893																
179		03:10:00	43.6667		253	1893																
180		03:10:00	43.6667		Burnable gas to surface. No fluid																	
181		03:15:00	43.7500		163	1893																
182		03:30:00	44.0000		153	1893																
183		03:45:00	44.2500		143	1893																
184		03:45:00	44.2500		No signs of burnable gas. No fluid																	
185		04:00:00	44.5000		113	1893									9.39	0.00		0.00	9.39	0.00	0.00	9.39
186		04:00:00	44.5000		Shut well in to stop-cock.																	
187		04:00:00	44.5000					0.00														
188		04:05:00	44.5833		418	1893																
189		04:10:00	44.6667		693	1893																
190		04:15:00	44.7500		993	1893																
191		04:30:00	45.0000		2043	1943																
192		04:45:00	45.2500		2393	1968																
193		05:00:00	45.5000		2743	1993																
194		05:30:00	46.0000		3123	1993																
195		06:00:00	46.5000		3363	1993		0.00							9.39	0.00		0.00	9.39	0.00	0.00	9.39

Anadarko Canada Corporation
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Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
196	2003/03/25	06:00:00	46.5000		Cumm fluid recovered past (24 hrs) = 0.10 m³, Total cumm fluid (46 hrs) = 9.39 m³.																	
197		06:00:00	46.5000		Total load fluid left to recover = 15.61 m³.																	
198		06:30:00	47.0000		3543	2043																
199		07:00:00	47.5000		3643	2093																
200		07:30:00	48.0000		3793	2093																
201		08:00:00	48.5000		3943	2043									9.39	0.00		0.00	9.39	0.00	0.00	9.39
202		08:00:00	48.5000	7.3333	Open well on 38.1mm Choke, (2" Gutline)																	
203		08:05:00	48.5833	7.4167	443	1893	2															
204		08:10:00	48.6667	7.5000	143	1893									9.48	0.09	100	0.09	9.48	0.00	0.00	9.48
205		08:10:00	48.6667		Rig up to swab, Trace of sand, Salinity - 42,000ppm, Ph - 7																	
206		08:30:00	49.0000			1893		38.10														
207		08:30:00	49.0000		Swab #1, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
208		09:00:00	49.5000			2043	1	38.10							9.48	0.00		0.00	9.48	0.00	0.00	9.48
209		09:00:00	49.5000		Swab #2, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
210		09:30:00	50.0000			2043	2	38.10							9.48	0.00		0.00	9.48	0.00	0.00	9.48
211		09:30:00	50.0000		Tbg - tstm, No sign of burnable gas, No fluid.																	
212		10:00:00	50.5000			2093	2	38.10							9.48	0.00		0.00	9.48	0.00	0.00	9.48
213		10:00:00	50.5000		Swab #3, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas.																	
214		10:30:00	51.0000			2043	2	38.10							9.48	0.00		0.00	9.48	0.00	0.00	9.48
215		10:30:00	51.0000		Tbg - tstm, No sign of burnable gas, No fluid.																	
216		11:00:00	51.5000			2043	2	38.10							9.48	0.00		0.00	9.48	0.00	0.00	9.48
217		11:00:00	51.5000		Swab #4, Tbg - tstm, Tag - no tag, Pull - 665m (nipple), Dry swab, No sign of burnable gas, Rig out swab equipment.																	
218		11:15:00	51.7500		1218	2093																
219		11:30:00	52.0000		1718	2093																
220		11:45:00	52.2500		2068	2093																
221		12:00:00	52.5000		2318	2143																
222		12:30:00	53.0000		2643	2143																
223		13:00:00	53.5000		2893	2193																
224		13:30:00	54.0000		3093	2193																
225		14:00:00	54.5000		3243	2193									9.48	-0.00		-0.00	9.48	0.00	0.00	9.48
226		14:00:00	54.5000	7.5000	Pressure test flowline, Open well on 19.05mm Choke. Trace of burnable gas.																	
227		14:05:00	54.5833	7.5833	543	2093	6	19.05														
228		14:10:00	54.6667	7.6667	293	2093	6	19.05														
229		14:15:00	54.7500	7.7500	243	2093	6	19.05							9.58	0.10	100	0.10	9.58	0.00	0.00	9.58
230		14:15:00	54.7500	7.7500	7% sand, Salinity - 60,000ppm, Ph - 7. Meter in service on 12.7mm Orifice.																	
231		14:25:00	54.9167	7.9167	Increase orifice size to 19.05mm.																	
232		14:30:00	55.0000	8.0000	148	2093	6	19.05	98	32.59	14	19.05	3.880	0.081	9.58	0.00		0.00	9.58	0.00	0.00	9.58
233		14:45:00	55.2500	8.2500	133	2093	6	19.05	98	21.65	15	19.05	3.094	0.117								
234		15:00:00	55.5000	8.5000	128	2093	6	19.05	98	17.91	16	19.05	2.789	0.148	9.58	0.00		0.00	9.58	0.00	0.00	9.58

Anadarko Canada Corporation
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Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH °C	Choke Size	Static Pres	Diff Pres	MR °C	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
235	2003/03/25	15:00:00	55.5000	8.5000	No fluid, Trace of burnable gas.																	
236		15:30:00	56.0000	9.0000	123	2093	7	19.05	98	14.93	17	19.05	2.529	0.203	9.58	0.00		0.00	9.58	0.00	0.00	9.58
237		16:00:00	56.5000	9.5000	113	2093	8	19.05	98	13.19	17	19.05	2.369	0.254	9.58	0.00		0.00	9.58	0.00	0.00	9.58
238		16:00:00	56.5000	9.5000	No fluid, Estimated 50% burnable gas.																	
239		16:30:00	57.0000	10.0000	113	2093	8		98	11.69	17		2.224	0.302	9.58	0.00		0.00	9.58	0.00	0.00	9.58
240		17:00:00	57.5000	10.5000	108	2093	8	19.05	98	10.95	17	19.05	2.150	0.348	9.58	0.00		0.00	9.58	0.00	0.00	9.58
241		17:00:00	57.5000		Shut in well, Monitor build-ups																	
242		17:05:00	57.5833		543	2093																
243		17:10:00	57.6667		743	2093																
244		17:15:00	57.7500		943	2093																
245		17:30:00	58.0000		1443	2093																
246		17:45:00	58.2500		1768	2093																
247		18:00:00	58.5000		2018	2093																
248		18:30:00	59.0000		2368	2093																
249		19:00:00	59.5000		2568	2093																
250		19:30:00	60.0000		2783	2093																
251		20:00:00	60.5000		2933	2093																
252		20:30:00	61.0000		3043	2093																
253		20:45:00	61.2500		Rapid wire line arrives on location to run recorders.																	
254		21:00:00	61.5000		3143	2093																
255		21:10:00	61.6667		Anchor truck arrives on location to remove anchors.																	
256		21:30:00	62.0000		3243	2043																
257		21:31:00	62.0167		Landed recorders @ 676 mcf. Record build-ups for 2 hrs.																	
258		21:45:00	62.2500		Anchor truck departs locaton.																	
259		22:00:00	62.5000		3343	2043																
260		22:01:00	62.5167		Rapid departs location.																	
261		22:30:00	63.0000		3393	2068																
262		23:00:00	63.5000		3453	2068									9.58	0.00		0.00	9.58	0.00	0.00	9.58
263		23:30:00	64.0000		93	93	0	0.00	93	0.00	0	0.00	0.000	0.348	9.58	0.00		0.00	9.58	0.00	0.00	9.58
264		23:30:00	64.0000	10.5000																		
265		23:30:00	64.0000	10.5000	Open well on a 19.05 mm choke																	
266		23:35:00	64.0833	10.5833	693	1893		19.05														
267		23:36:00	64.1000	10.6000	Burnable gas to surface. No fluid.																	
268		23:40:00	64.1667	10.6667	203	1893																
269		23:43:00	64.2167	10.7167	Meter in service with a 19.05 mm orfice plate.																	
270		23:45:00	64.2500	10.7500	173	1893	-1	19.05	98	71.65	1	19.05	6.312	0.413	9.58	0.00		0.00	9.58	0.00	0.00	9.58
271		23:59:00	64.4833	10.9833	118	1893	-1		98	42.30	2		4.597	0.466								
272		23:59:00	64.4833	10.9833	No fluid.																	
273	2003/03/26	00:30:00	65.0000	11.5000	98	1893	-1		98	22.89	2		3.263	0.551								

Anadarko Canada Corporation
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Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
274	2003/03/26	01:00:00	65.5000	12.0000	96	1893	-1	19.05	98	19.90	3	19.05	3.020	0.616	9.58	0.00		0.00	9.58	0.00	0.00	9.58
275		01:30:00	66.0000	12.5000	96	1893	-1		98	18.41	3		2.897	0.678								
276		01:30:00	66.0000		Shut in well to monitor build-ups. Meter out of service.																	
277		01:30:00	66.0000		95	1893		0.00				0.00										
278		01:35:00	66.0833		273	1893																
279		01:40:00	66.1667		393	1943																
280		01:45:00	66.2500		493	1943																
281		02:00:00	66.5000		873	1943																
282		02:15:00	66.7500		993	1943																
283		02:30:00	67.0000		1253	1993																
284		03:00:00	67.5000		1843	1993																
285		03:30:00	68.0000		2393	1993																
286		04:00:00	68.5000		2773	1993																
287		05:00:00	69.5000		2913	1993																
288		06:00:00	70.5000		3093	1993		0.00				0.00			9.58	0.00		0.00	9.58	0.00	0.00	9.58
289		07:00:00	71.5000		3468	1993																
290		08:00:00	72.5000		3468	1993																
291		09:00:00	73.5000		3568	1993																
292		10:00:00	74.5000		3643	1993																
293		11:00:00	75.5000		3703	1993																
294		12:00:00	76.5000		3754	1993																
295		13:00:00	77.5000		3809	1993																
296		13:28:00	77.9667		Pressure test flowline.																	
297		13:30:00	78.0000		3768	1993									9.58	0.00		0.00	9.58	0.00	0.00	9.58
298		13:30:00	78.0000		Open well on 19.05mm choke.																	
299		13:35:00	78.0833	12.5833	493	1993																
300		13:40:00	78.1667	12.6667	286	1993																
301		13:40:00	78.1667	12.6667	Meter in service on 25.4mm Orifice.																	
302		13:45:00	78.2500	12.7500	217	1943	-2	19.05	103	27.87	0	25.40	6.662	0.747	9.58	0.00		0.00	9.58	0.00	0.00	9.58
303		13:45:00	78.2500	12.7500	Trace of burnable gas, No fluid.																	
304		14:00:00	78.5000	13.0000	162	1993	-2	19.05	103	17.91	0	25.40	5.248	0.810	9.58	0.00		0.00	9.58	0.00	0.00	9.58
305		14:00:00	78.5000	13.0000	Trace of burnable gas, No fluid.																	
306		14:15:00	78.7500	13.2500	155	1993	0	19.05	103	13.19	3	25.40	4.442	0.860	9.58	0.00		0.00	9.58	0.00	0.00	9.58
307		14:30:00	79.0000	13.5000	141	1993	2	19.05	98	11.69	6	25.40	4.050	0.904	9.58	0.00		0.00	9.58	0.00	0.00	9.58
308		14:30:00	79.0000	13.5000	Estimated 50% burnable gas, No fluid.																	
309		15:00:00	79.5000	14.0000	128	1993	2	19.05	98	8.71	10	25.40	3.453	0.982	9.58	0.00		0.00	9.58	0.00	0.00	9.58
310		15:00:00	79.5000	14.0000	Estimated 50% burnable gas, No fluid.																	
311		15:30:00	80.0000	14.5000	121	1993	0	19.05	98	7.00	10	25.40	3.086	1.050	9.58	0.00		0.00	9.58	0.00	0.00	9.58
312		16:00:00	80.5000	15.0000	114	1993	2	19.05	98	5.97	10	25.40	2.845	1.112	9.58	0.00		0.00	9.58	0.00	0.00	9.58

Anadarko Canada Corporation
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Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
313	2003/03/26	16:00:00	80.5000	15.0000	Estimated 50% burnable gas, No fluid.																	
314		16:30:00	81.0000	15.5000	107	1993	3	19.05	98	5.23	10	25.40	2.659	1.170	9.58	0.00		0.00	9.58	0.00	0.00	9.58
315		17:00:00	81.5000	16.0000	107	1993	2	19.05	98	4.48	9	25.40	2.463	1.223	9.58	0.00		0.00	9.58	0.00	0.00	9.58
316		17:00:00	81.5000	16.0000	Estimated 75% burnable gas, No fluid.																	
317		17:30:00	82.0000	16.5000	107	1993	2	19.05	98	3.98	10	25.40	2.315	1.273	9.58	0.00		0.00	9.58	0.00	0.00	9.58
318		18:00:00	82.5000	17.0000	107	1993	0	19.05	98	3.98	10	25.40	2.315	1.321	9.58	0.00		0.00	9.58	0.00	0.00	9.58
319		18:00:00	82.5000	17.0000	Estimated 75% burnable gas, No fluid.																	
320		18:30:00	83.0000	17.5000	103	1943	0	19.05	98	3.48	10	25.40	2.163	1.368	9.58	0.00		0.00	9.58	0.00	0.00	9.58
321		18:40:00	83.1667	17.6667	Decrease choke size to 19.05mm.																	
322		19:00:00	83.5000	18.0000	103	1943	0	19.05	98	7.22	10	19.05	1.756	1.408	9.58	0.00		0.00	9.58	0.00	0.00	9.58
323		19:00:00	83.5000	18.0000	Estimated 75% burnable gas, No fluid.																	
324		19:30:00	84.0000	18.5000	103	1918	0	19.05	98	5.97	10		1.593	1.443	9.58	0.00		0.00	9.58	0.00	0.00	9.58
325		20:00:00	84.5000	19.0000	103	1918	0	19.05	98	5.97	10	19.05	1.593	1.476	9.58	0.00		0.00	9.58	0.00	0.00	9.58
326		20:00:00	84.5000	19.0000	Estimated 75% burnable gas, No fluid.																	
327		20:30:00	85.0000	19.5000	107	1918	0		98	5.47	7		1.532	1.509								
328		21:00:00	85.5000	20.0000	107	1918	0	19.05	98	5.47	7	19.05	1.532	1.541	9.58	0.00		0.00	9.58	0.00	0.00	9.58
329		21:00:00	85.5000	20.0000	Estimated 75% burnable gas, No fluid.																	
330		21:30:00	86.0000	20.5000	107	1903	-2		98	5.47	5		1.537	1.573								
331		22:00:00	86.5000	21.0000	103	1903	-2	19.05	98	4.48	5	19.05	1.389	1.603	9.58	0.00		0.00	9.58	0.00	0.00	9.58
332		22:00:00	86.5000	21.0000	Estimated 75% burnable gas, No fluid.																	
333		22:30:00	87.0000	21.5000	107	1893	-5		98	4.23	6		1.347	1.632								
334		23:00:00	87.5000	22.0000	103	1893	-5	19.05	98	4.23	5	19.05	1.349	1.660	9.58	0.00		0.00	9.58	0.00	0.00	9.58
335		23:00:00	87.5000	22.0000	Estimated 80% burnable gas, No fluid.																	
336		23:30:00	88.0000	22.5000	103	1893	-5		98	3.98	5		1.308	1.688								
337		23:59:00	88.4833	22.9833	103	1893	-5	19.05	98	3.98	5	19.05	1.308	1.714	9.58	0.00		0.00	9.58	0.00	0.00	9.58
338		23:59:00	88.4833	22.9833	Estimated 80 % burnable gas, No fluid.																	
339	2003/03/27	00:30:00	89.0000	23.5000	103	1893	-5		98	3.98	5		1.308	1.742								
340		01:00:00	89.5000	24.0000	103	1893	5	19.05	98	3.98	5	19.05	1.308	1.769	9.58	0.00		0.00	9.58	0.00	0.00	9.58
341		01:00:00	89.5000	24.0000	Estimated 80 % burnable gas, No fluid.																	
342		01:30:00	90.0000	24.5000	107	1893	-6		98	3.98	5		1.308	1.797								
343		02:00:00	90.5000	25.0000	107	1893	-6	19.05	98	3.98	5	19.05	1.308	1.824	9.58	0.00		0.00	9.58	0.00	0.00	9.58
344		02:00:00	90.5000	25.0000	Estimated 95 % burnable gas, No fluid.																	
345		02:30:00	91.0000	25.5000	107	1893	-6		98	3.98	4		1.311	1.851								
346		03:00:00	91.5000	26.0000	107	1893	-6	19.05	98	3.98	4	19.05	1.311	1.879	9.58	0.00		0.00	9.58	0.00	0.00	9.58
347		03:00:00	91.5000	26.0000	Estimated 95 % burnable gas, No fluid.																	
348		03:30:00	92.0000	26.5000	107	1893	-6		98	3.98	4		1.311	1.906								
349		04:00:00	92.5000	27.0000	107	1893	-7	19.05	98	3.98	3	19.05	1.313	1.933	9.58	0.00		0.00	9.58	0.00	0.00	9.58
350		04:00:00	92.5000	27.0000	Estimated 95 % burnable gas, No fluid.																	
351		04:30:00	93.0000	27.5000	107	1893	-7		98	3.98	3		1.313	1.961								

Anadarko Canada Corporation
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Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkeh
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
352	2003/03/27	05:00:00	93.5000	28.0000	107	1893	-7	19.05	98	3.98	3	19.05	1.313	1.988	9.58	0.00		0.00	9.58	0.00	0.00	9.58
353		05:00:00	93.5000	28.0000	Estimated 95 % burnable gas, No fluid.																	
354		05:30:00	94.0000	28.5000	107	1893	-7		98	3.98	3		1.313	2.015								
355		06:00:00	94.5000	29.0000	107	1893	-7	19.05	98	3.98	3	19.05	1.313	2.043	9.58	0.00		0.00	9.58	0.00	0.00	9.58
356		06:00:00	94.5000	29.0000	Estimated 95 % burnable gas, No fluid.																	
357					Cumm gas produced past (24 hrs) = 1.548 10^3m^3, Total cumm gas produced = 2.317 10^3m^3.																	
358					Cumm fluid produced past (24 hrs) = 0.00 m^3, Total cumm fluid produced = 9.58 m^3.																	
359		06:30:00	95.0000	29.5000	103	1893	-7		98	3.23	2		1.184	2.069								
360		07:00:00	95.5000	30.0000																		
361		07:00:00	95.5000	30.0000	100% burnable gas, No fluid.																	
362		07:30:00	96.0000	30.5000	103	1868	-8		98	3.23	2		1.184	2.118								
363		08:00:00	96.5000	31.0000	103	1868	-6	19.05	98	3.23	2	19.05	1.184	2.143	9.58	0.00		0.00	9.58	0.00	0.00	9.58
364		08:00:00	96.5000	31.0000	No fluid.																	
365		08:30:00	97.0000	31.5000	103	1868	-4		98	3.23	2		1.184	2.167								
366		09:00:00	97.5000	32.0000	103	1868	-3	19.05	98	3.23	2	19.05	1.184	2.192	9.58	0.00		0.00	9.58	0.00	0.00	9.58
367		09:00:00	97.5000	32.0000	No fluid.																	
368		09:30:00	98.0000	32.5000	103	1868	-2		98	2.99	2		1.139	2.216								
369		10:00:00	98.5000	33.0000	103	1893	-3	19.05	98	2.99	2	19.05	1.139	2.240	9.58	0.00		0.00	9.58	0.00	0.00	9.58
370		10:00:00	98.5000	33.0000	No fluid.																	
371		10:30:00	99.0000	33.5000	103	1893	0		98	2.99	2		1.139	2.264								
372		11:00:00	99.5000	34.0000	103	1893	0	19.05	98	2.99	4	19.05	1.134	2.287	9.58	0.00		0.00	9.58	0.00	0.00	9.58
373		11:00:00	99.5000	34.0000	No fluid.																	
374		11:30:00	100.0000	34.5000	103	1893	0		98	2.99	5		1.132	2.311								
375		12:00:00	100.5000	35.0000	103	1893	0	19.05	98	2.74	6	19.05	1.082	2.334	9.58	0.00		0.00	9.58	0.00	0.00	9.58
376		12:00:00	100.5000	35.0000	No fluid.																	
377		12:30:00	101.0000	35.5000	103	1893	0		98	2.49	7		1.029	2.356								
378		13:00:00	101.5000	36.0000	103	1893	0	19.05	98	2.49	7	19.05	1.029	2.377	9.58	0.00		0.00	9.58	0.00	0.00	9.58
379		13:00:00	101.5000	36.0000	No fluid.																	
380		13:30:00	102.0000	36.5000	103	1893	0		98	2.49	8		1.027	2.399								
381		14:00:00	102.5000	37.0000	103	1893	0	19.05	98	2.49	9	19.05	1.026	2.420	9.58	0.00		0.00	9.58	0.00	0.00	9.58
382		14:00:00	102.5000	37.0000	No fluid.																	
383		14:30:00	103.0000	37.5000	103	1893	0		98	2.49	10		1.024	2.441								
384		15:00:00	103.5000	38.0000	103	1893	0	19.05	98	2.49	10	19.05	1.024	2.463	9.58	0.00		0.00	9.58	0.00	.00	9.58
385		15:00:00	103.5000	38.0000	No fluid.																	
386		15:30:00	104.0000	38.5000	103	1893	0		98	2.49	10		1.024	2.484								
387		16:00:00	104.5000	39.0000	103	1893	0	19.05	98	2.49	10	19.05	1.024	2.505	9.58	0.00		0.00	9.58	0.00	0.00	9.58
388		16:00:00	104.5000	39.0000	No fluid.																	
389		16:30:00	105.0000	39.5000	103	1893	0		98	2.24	10		0.971	2.526								
390		17:00:00	105.5000	40.0000	103	1893	0	19.05	98	2.24	10	19.05	0.971	2.546	9.58	0.00		0.00	9.58	0.00	0.00	9.58

Anadarko Canada Corporation
J-74
Start Test Date: 2003/03/23
Final Test Date: 2003/03/28

FieldNotes
Field Measurements

Anadarko Arrowhead
Formation: Chinkch
Pool: 690.0 - 700.0 mKB
Job Number: 1368

	Date	Clock Time	Cum Time	Cum Flow Time	C TBG Pres	CSG Pres	WH	Choke Size	Static Pres	Diff Pres	MR	Orifice Size	Gas Rate	Gas Cum	fld lev	Inc Fld	BS	Inc BSW	Cum. BSW	Inc Oil	Cum. Oil	Cum. Fluid
	yyyy/mm/dd	hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	$10^3m^3/d$	10^3m^3	m^3	m^3	%	m^3	m^3	m^3	m^3	m^3
391	2003/03/27	17:00:00	105.5000	40.0000	No fluid.																	
392		17:30:00	106.0000	40.5000	103	1893	0		98	2.24	10		0.971	2.567								
393		18:00:00	106.5000	41.0000	103	1893	0	19.05	98	2.24	10	19.05	0.971	2.587	9.58	0.00		0.00	9.58	0.00	0.00	9.58
394		18:00:00	106.5000	41.0000	No fluid. 2 Gas samples taken, 2 H2O samples taken.																	
395		18:30:00	107.0000	41.5000	103	1893	0		98	1.99	10		0.915	2.607								
396		19:00:00	107.5000	42.0000	103	1893	-2	19.05	99	1.99	10	19.05	0.919	2.626	9.58	0.00		0.00	9.58	0.00	0.00	9.58
397		19:00:00	107.5000	42.0000	No fluid.																	
398		19:30:00	108.0000	42.5000	103	1893	-4		98	1.99	8		0.918	2.645								
399		20:00:00	108.5000	43.0000	103	1893	-4	19.05	98	1.99	8	19.05	0.918	2.664	9.58	0.00		0.00	9.58	0.00	0.00	9.58
400		20:00:00	108.5000	43.0000	No fluid.																	
401		20:30:00	109.0000	43.5000	103	1868	-5		98	1.99	8		0.918	2.683								
402		21:00:00	109.5000	44.0000	103	1863	-5	19.05	98	1.99	7	19.05	0.920	2.702	9.58	0.00		0.00	9.58	0.00	0.00	9.58
403		21:00:00	109.5000	44.0000	No fluid.																	
404		21:30:00	110.0000	44.5000	103	1863	-5		98	1.99	7		0.920	2.721								
405		22:00:00	110.5000	45.0000	103	1863	-5	19.05	98	1.74	6	19.05	0.861	2.740	9.58	0.00		0.00	9.58	0.00	0.00	9.58
406		22:00:00	110.5000	45.0000	No fluid.																	
407		22:30:00	111.0000	45.5000	103	1863	-5		98	1.74	4		0.864	2.758								
408		23:00:00	111.5000	46.0000	103	1863	-5	19.05	98	1.74	4	19.05	0.864	2.776	9.58	0.00		0.00	9.58	0.00	0.00	9.58
409		23:00:00	111.5000	46.0000	No fluid.																	
410		23:30:00	112.0000	46.5000	103	1863	-6		98	1.74	4		0.864	2.794								
411		23:59:00	112.4833	46.9833	103	1863	-6	19.05	98	1.74	3	19.05	0.866	2.811	9.58	0.00		0.00	9.58	0.00	0.00	9.58
412		23:59:00	112.4833	46.9833	No fluid.																	
413	2003/03/28	00:30:00	113.0000	47.5000	103	1863	-6		98	1.74	3		0.866	2.830								
414		01:00:00	113.5000	48.0000	103	1863	7	19.05	98	1.74	2	19.05	0.868	2.848	9.58	0.00		0.00	9.58	0.00	0.00	9.58
415		01:00:00	113.5000		No fluid.																	
416		01:00:00	113.5000		Shut in well begin rigging out																	
417		01:00:00	113.5000		Cumm gas produced past (19 hrs) = 0.913 10^3m^3, Total cumm gas produced = 3.230 10^3m^3.																	
418		01:00:00	113.5000		Cumm fluid produced past (19 hrs) = 0.00 m^3, Total fluid produced = 9.58 m^3.																	
419																						
420																						
421																						
422																						
423																						
424																						
425																						
426																						

NORWEST LABS

Energy Resource Group

9958 - 67 Avenue, Edmonton, Alberta T6E 0P5
Phone (780) 438-5522

F03-05969-01
Laboratory Report Number

GAS ANALYSIS

Anadarko Canada Corporation — Operator

4942/2939 — Container Identity

J-74 — Location

Anadarko Arrowhead J-74 — Well Name

KB Elev, m | GR Elev, m

Arrowhead — Field/Area

Chikah — Pool / Zone

Sampler

Arctic Energy — Company

Test Type | No

Multiple Recovery

Test Recovery:

Test Interval, m

Perforations, m

Flow Line — Sample Point

Meter # / Sample ID

Type of Production: Pumping ___ Flowing ___ Gas Lift ___ Swab ___

Production Rates: Water ___ m³/d Oil ___ m³/d Gas ___ 10³ m³/d

	Separator	Treater	Reservoir	Source	Sampled	Received
Gauge Pressure, kPa				10		10
Temperature, °C				-4		18

2003-03-27 — Date Sampled (Y-M-D)

2003-03-31 — Date Received (Y-M-D)

2003-04-02 — Date Reported (Y-M-D)

C. Jorven — Analyst

Other Information

Comp.	Mole Fraction (Air Free) As Received	Mole Fraction (Air Free) Acid Gas Free	Petroleum Liquid Content mL/m³
H2	0.0002	0.0003	
He	0.0003	0.0004	
N2	0.0084	0.0113	
CO2	0.2541	0.0000	
H2S	0.0000	0.0000	
C1	0.7026	0.9419	
C2	0.0167	0.0224	59.3
C3	0.0095	0.0127	34.9
iC4	0.0019	0.0025	8.3
nC4	0.0030	0.0040	12.6
iC5	0.0011	0.0015	5.4
nC5	0.0008	0.0011	3.9
C6	0.0007	0.0009	3.8
C7	0.0005	0.0007	3.1
C8	0.0002	0.0003	1.4
C9	Trace	Trace	0.0
C10+	0.0000	0.0000	0.0
Total	1.0000	1.0000	132.7

Gross Heating Value - Moisture Free
MJ/m³ @ 15°C, 101.325 kPa

AGA #5 As Received	AGA #5 Acid Gas Free	GPA #2172 As Received
29.73	39.84	29.72

Pseudocritical Properties

Pressure, kPa	Temperature, K
5284	224.5

Density - Moisture Free, As Sampled

Ideal Gas Absolute, kg/m³	Ideal Gas Relative	Real Gas (GPA 2172) Absolute, kg/m³	Real Gas (GPA 2172) Relative
1.022	0.834	1.024	0.836

Relative Molecular Mass

Total Gas	C7+
24.17	104.21

Hydrogen Sulphide g/m³	Vapour Pressure Pentanes Plus, kPa
0.00	83

Note: Physical constants used in calculations from GPA Standard 2145-00

Supervisor R. Peters

Approved S. Montgomery

Accredited by the Standards Council of Canada for specific tests registered with the council

NORWEST LABS
Energy Resource Group
9958 - 67 Avenue, Edmonton, Alberta T6E 0P5
Phone (780) 438-5522

WATER ANALYSIS

F03-05969-02
Laboratory Report Number

Operator: Anadarko Canada Corporation
Container Identity: PLASTIC
Location: J-74
Well Name: Anadarko Arrowhead J-74
KB Elev, m:
GR Elev, m:
Field/Area: Arrowhead
Pool / Zone: Chikah
Sampler:
Company: Arctic Energy

Test Type:
Multiple Recovery: No

Test Recovery:

Test Interval, m:

Perforations, m:

Sample Point: Separator
Meter # / Sample ID:

Type of Production: Pumping ___ Flowing ___ Gas Lift ___ Swab ___

Production Rates: Water ___ m³/d Oil ___ m³/d Gas ___ 10³ m³/d

Gauge Pressure, kPa
Temperature, °C
Separator Treater Reservoir Source Sampled Received

Date Sampled (Y-M-D): 2003-03-27
Date Received (Y-M-D): 2003-03-31
Date Reported (Y-M-D): 2003-04-02
Analyst: C. Jorven
Other Information:

Ion	mg/L	Mass Fraction	meq/L	Ion	mg/L	Mass Fraction	meq/L
Na	1 600	0.2394	69.60	Cl	1 855	0.2776	52.31
K	260	0.0389	6.66	Br			
Ca	100	0.0150	4.99	I			
Mg	97	0.0145	7.98	HCO3	2 721	0.4072	44.62
Ba				SO4	49	0.0074	1.03
Sr				CO3	0	0.0000	0.00
Fe	Present			OH	0	0.0000	0.00
				H2S	Nil		

Total Dissolved Solids, mg/L

Evaporated @ 110°C	Evaporated @ 180°C
7 820	

At Ignition	Calculated
4 060	6 682

Organic Matter: Nil

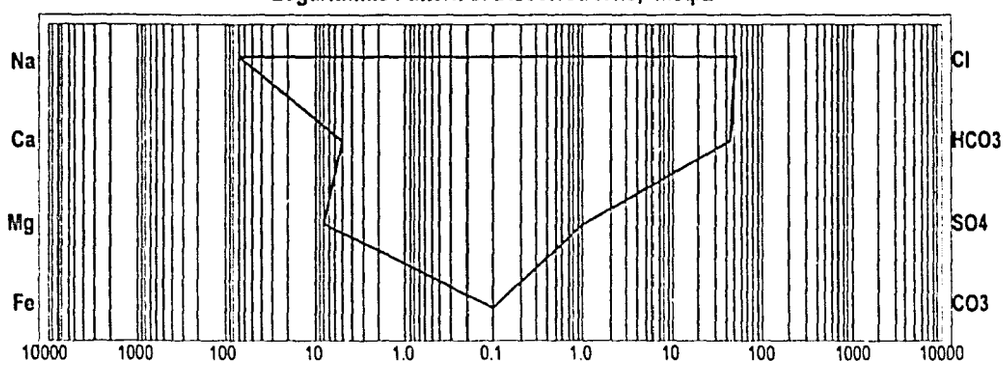
Relative Density	Refractive Index
0.989 @ 25°C	1.3440 @ 25°C

Observed pH	Resistivity ohm.m
7.8 @ 18 °C	2.64 @ 25°C

Remarks

Analysis performed on pale yellow filtrate recovered from water.

Logarithmic Pattern of Dissolved Ions, meq/L



Supervisor: P. Lambert
Approved: S. Montgomery

Accredited by the Standards Council of Canada for specific tests registered with the council

Logs from this section can be found in the log section of the fiche

GEOLOGICAL REPORT

K.C. WAUNCH PETROLEUM CONSULTANTS LTD.

WELLSITE GEOLOGICAL SERVICES

CALGARY, ALBERTA

N.E.B. COPY

Geological Report

on

316766

Anadarko Arrowhead River J-74

Arrowhead River

Well Reached Total Depth on
Mar 15, 2003 @ 04:00

for

Anadarko Canada Corporaion

Prepared For: Mike Fawcett/Ben Urlwin
Anadarko Canada Corporation

Prepared By: Erika Lange
K.C. Waunch Petroleum Consultants L

Erika Lange

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Well Summary

Storage Units: Metric

Well Information

Operator:	Anadarko Canada Corporaion
Well Name:	Anadarko Arrowhead River J-74
Location:	Arrowhead River
UWI:	300J746040122450
Pool:	Chinkeh
Field:	Arrowhead
State / Province:	NWT
Country:	Canada
License Number:	1987
Well Status:	Cased

Surface Co-ordinates

Hole Type: Fault Indicator:
Latitude: Longitude:

N / S: 69 33 35 4 N
E / W: 122 58 53 1 W

Bottom Hole Co-ordinates

Latitude: Longitude:

N / S: 69 33 35 4 N
E / W: 122 58 53 1 W

Elevations

		Reference:	512.51
Ground Elevation:	512.51	Kelly Bushing to Ground:	4.78
Kelly Bushing Elevation:	517.29	Cut (-):	
Casing Flange Elevation:	517.31	Fill (+):	

Total Depth

	Measured Depth	True Vertical Depth
Total Depth Driller (Tally) :	824.00	824.00
Total Depth Driller (Strap or SLM):		
Total Depth Logger:	821.00	821.00

Miscellaneous Depths

Plugback Depth: Water Depth Reference: 100
Sidetrack Depth: Water Depth:

Well Summary

Drilling Contractor: Akita # 15 Spud Date: Mar 10, 2003 @ 04:00
Rig Release Date: Mar 17, 2003 @ 08:00 Total Depth Date: Mar 15, 2003 @ 04:00

Cores

#	Formation	Interval	Cut	Recovered	%

Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Surface	219.1	240.00	311.0
Production	139.7	824.00	200.0

Well Summary

Storage Units: Metric

Logging Summary

Company	Engineer	Total Depth (MD)	Logging tools
Tucker Wireline	Vladamir Iglesias	824.00	PIT/GRT/SP FTD-SC Linear Res: 0-50; Linear Cond: 1000-0 Log Scale: 0.2-2000 LDT-CNT/GRT/CALI FTD-SC Bulk Density 2000-3000; Sst Neut.Por. 1:240 0.45 to -0.15 CST/XACT-GRT FTD-SC 500-100

Daily Drilling Summary

Storage Units: Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Costs	Formation	Operational Status @ Report Time
Mar 10, 03	42.00		2.00			Surface	Drilling Surface (fighting mud rings)
Mar 11, 03	212.00		21.00			Surface	Bit trip, to finish surface (TD = 240m)
Mar 12, 03	240.00		2.00			Surface	Wait on Cement
Mar 13, 03	347.00		4.70				Drilling Main Hole
Mar 14, 03	703.00		21.00			Garbutt	Going back in the hole after bit trip (00:30-8:00)
Mar 15, 03	824.00		16.20			Debolt (?)	Circulate and then trip for wiper
Mar 16, 03	824.00					Debolt	Rig up to & run Casing

Accumulated Daily Costs:

Casing Data Summary

Storage Units: Metric

Casing Type: Surface

Casing Size:	219.1	**Hole Size:**	311.0
Casing Landed @:	240.00	**Total Joints:**	20
Casing Date:	Mar 12, 2003 @ 01:20	**Plug Down Date:**	Mar 12, 2003 @ 03:49

# of Joints / Length / O.D. / Weight: 20; 12m; 219.1; 35.7 kg

Cementing Details: 0.5 m3 returns
K55 grade

Remarks:

Casing Type: Production

Casing Size:	139.7	**Hole Size:**	200.0
Casing Landed @:	824.00	**Total Joints:**	63
Casing Date:	Mar 16, 2003 @ 00:00	**Plug Down Date:**	

# of Joints / Length / O.D. / Weight:

Cementing Details:

Remarks:

Bit Record

Pump Data

Pump #1

Model:	F-650	**Size:**	650	**Type:**	triplex
Pump Rod Diameter:		**Liner Size:**	152.0	**Stroke Length:**	203
Efficiency Rating (%):	90				

Pump #2

Model:		**Size:**		**Type:**	
Pump Rod Diameter:		**Liner Size:**		**Stroke Length:**	
Efficiency Rating (%):					

Bit Data

Storage Units: Metric

Bit #: 1A **Make:** Smith **Type:** XGGC **IADC Series / Type:** /
Serial #: RR0276 **Size:** 311.2 **Jets / Nozzles:** 14.30 / 14.30 / 15.90 / 19.20 **T.F.A.:**
Depth In: 0.00 **Depth Out:** 212.00 **Made:** 212.00 **Rotating Hours:** 26.00
Average Drill Rate: 8.15 **Total Rotating Hours:** 26.00
Bit Grade / Condition I.A.D.C.: 7 / 7 / FC / A 3 / / 1 / NO / PR / PR **T / B / G:** 7 / 7 / 1
Remarks:
Formations Drilled:
Drilling Parameters

	Min		Max		Min		Max
Force on Bit:	0	/	10	**R.P.M.:**	90	/	193
Pump 1 S.P.M. / Volume:	110	/	1,094	**Pump 2 S.P.M. / Volume:**		/	
S.P.P.:	2,100	/	6,200	**Fluid Density:**	1,010	/	1,125
Drift Angle:	0.000	/	1.000	**Funnel Viscosity:**	39	/	64

Annular Velocity **Drill Collars:** 37.0 **HeavyWeight Drill Pipe:** **Drill Pipe:** 30.0
Bottoms Up **Depth:** 100.00 **Theoretical:** 3 **Actual:** 3

Bit #: 2A **Make:** Smith **Type:** XGGC **IADC Series / Type:** /
Serial #: RR0276 **Size:** 311.0 **Jets / Nozzles:** 14.30 / 14.30 / 15.90 / **T.F.A.:**
Depth In: 212.00 **Depth Out:** 240.00 **Made:** 28.00 **Rotating Hours:** 2.00
Average Drill Rate: 14.00 **Total Rotating Hours:** 28.00
Bit Grade / Condition I.A.D.C.: 1 / 1 / NO / A 3 / / I / NO / TD / TD **T / B / G:** 1 / 1 / I
Remarks:
Formations Drilled:
Drilling Parameters

	Min		Max		Min		Max
Force on Bit:	8	/	10	**R.P.M.:**	170	/	200
Pump 1 S.P.M. / Volume:	109	/	1,084	**Pump 2 S.P.M. / Volume:**		/	
S.P.P.:	6,400	/	7,900	**Fluid Density:**	1,125	/	1,130
Drift Angle:	0.000	/	0.750	**Funnel Viscosity:**	55	/	75

Annular Velocity **Drill Collars:** 36.0 **HeavyWeight Drill Pipe:** **Drill Pipe:** 30.0
Bottoms Up **Depth:** 220.00 **Theoretical:** 6 **Actual:** 6

Bit Data

Storage Units: Metric

Bit #: 1 **Make:** ɔoDiamond **Type:** MA74YPX **IADC Series / Type:** /
Serial #: JS7381 **Size:** 200.0 **Jets / Nozzles:** 7.10 / 7.10 / 7.10 / 7.10 **T.F.A.:**
Depth In: 240.00 **Depth Out:** 702.60 **Made:** 462.60 **Rotating Hours:** 21.00
Average Drill Rate: 22.03 **Total Rotating Hours:** 49.00
Bit Grade / Condition **I.A.D.C.:** / / / / / / / / **T / B / G:** / /
Remarks: 8 chipped/broken cutters on heel & gauge
Formations Drilled: Scatter; Garbutt
Drilling Parameters

	Min		Max		Min		Max
Force on Bit:	3	/	6	R.P.M.:	80	/	120
Pump 1 S.P.M. / Volume:	110	/	1,094	Pump 2 S.P.M. / Volume:		/	
S.P.P.:	1,830	/	7,500	Fluid Density:	1,010	/	1,110
Drift Angle:	0.250	/	0.500	Funnel Viscosity:	35	/	61

Annular Velocity **Drill Collars:** **HeavyWeight Drill Pipe:** **Drill Pipe:**
Bottoms Up **Depth:** **Theoretical:** **Actual:**

Bit #: 2RR **Make:** SMITH **Type:** F12YGP **IADC Series / Type:** /
Serial #: MK4350 **Size:** 200.0 **Jets / Nozzles:** 11.10 / 11.10 / 11.10 / 11.10 **T.F.A.:**
Depth In: 702.60 **Depth Out:** 824.00 **Made:** 121.40 **Rotating Hours:** 16.25
Average Drill Rate: 7.47 **Total Rotating Hours:** 65.25
Bit Grade / Condition **I.A.D.C.:** 2 / 3 / WT / A 3 / E / I / BT / TD / TD **T / B / G:** 2 / 3 / I
Remarks:
Formations Drilled:
Drilling Parameters

	Min		Max		Min		Max
Force on Bit:		/		R.P.M.:		/	
Pump 1 S.P.M. / Volume:		/		Pump 2 S.P.M. / Volume:		/	
S.P.P.:		/		Fluid Density:		/	
Drift Angle:		/		Funnel Viscosity:		/	

Annular Velocity **Drill Collars:** **HeavyWeight Drill Pipe:** **Drill Pipe:**
Bottoms Up **Depth:** **Theoretical:** **Actual:**

Wireline Logging Summary

Storage Units: Metric

Logging Suite Number: 1
Wireline Logging Company: Tucker Wireline
District: Grande Prairie
Witness: Erika Lange

Engineer: Vladamir Iglesias
Unit Number: 118

Was Pressure Control Equipment Utilized: No
Was the Logging Job Mechanically Assisted: No

Maximum Deviation: 1.700 °
Hole Size: 200.0

Total Lost Time:
Loggers' Total Down Time:
Total Job Time (From Rig up to Rig down): 2.00

	Measured Depth	True Vertical Depth
Casing Depth Driller	240.00	240.00
Casing Depth Logger	240.00	821.00
Total Depth Driller (Tally)	824.00	824.00
Total Depth Driller (Strap or SLM)		

General Remarks: Called for noon on Friday; called at 7am, at Ft. Nelson; arrived at: noon. Then we didn't need them until noon Saturday, so they stayed at camp and waited on us. Good, quick, well done job.

Logging Run #: 1
Date: Mar 15, 2003

Drilling Fluid Data

Drilling Fluid Type: Gelchem
Fluid Density: 1130.0 **Viscosity:** 85 **pH:** 10.0 **Fluid Loss:** 6.0

Mud Resistivity (Rm): 4.00 @ 12.0 °
Mud Resistivity (Rm) @ BHT: 2.55 @ 31 0 °
Mud Filtrate Resistivity (Rmf): 2.20 @ 31.0 °
Mud Cake Resistivity (Rmc): 3.15 @ 31.0 °

Maximum Temperature: 31.0 °
Source (Rmf): Press
Source (Rmc): Press

Logging Run Information

Date on Bottom: Mar 15, 2003
Total Depth Logger: 821.00 (MD) 821.00 (TVD)

Logging Tools:
PIT/GRT/SP FTD-SC Linear Res: 0-50; Linear Cond: 1000-0 Log Scale: 0.2-2000
LDT-CNT/GRT/CALI FTD-SC Bulk Density 2000-3000; Sst Neut.Por. 1:240 0.45 to -0.15
CST/XACT-GRT FTD-SC 500-100

Remarks: good run

Hole Conditions: tight

Deviation / Directional Survey Report

Directional Drilling Company:	Gyrodata
Directional Drillers:	Blane Haddow
Measured While Drilling (MWD) Hands:	
Survey Type:	gyroscopic
Survey Mode:	wireline
Survey Date:	Mar 15, 2003
Survey Calculation Method:	minimum curvature
Target Azimuth:	°
Dog Leg Severity Characteristic:	30.00

Survey Tie-In Information

Tie-In Co-Ordinantes

Latitude:

Longitude:

N / S:

E / W:

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity

Kick-Off (Whipstock) Information

Kick-Off Co-Ordinantes

Latitude: 60.3335400

Longitude: 122.5853100

N / S: 60.333540

E / W: 122.585310

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
808.80	808.70	5.060	303.38	3.39	9.72		3.12

Remarks:

Drilling Fluid Summary

Storage Units: Metric

Drilling Fluid Type:	Gelchem	From:	240	To:	824

Formation Top Summary

Storage Units: Metric

Kelly Bushing Elevation: 517.29 **Casing Flange Elevation:** 517.31
Ground Elevation: 512.51

***** All Depths measured from Kelly Bushing Elevation *****

Group *Formation* Member	Prognosis (TVD)	Sample Top (MD)	Sample Top (TVD)	Log Top (MD)	Log Top (TVD)	Subsea	Thickness
Samples start at	240.00	240.00	240.00	240.00	240.00	277.29	330.00
Scatter	580.00	570.00	570.00	580.00	580.00	-62.71	46.00
Garbutt	626.00	616.00	616.00	617.00	617.00	-99.71	73.00
Chinkeh	722.00	689.00	689.00	689.00	689.00	-171.71	57.00
Debolt	742.00	746.00	746.00	746.00	746.00	-228.71	78.00
Total Depth	824.00	824.00	824.00	821.00	821.00	-303.71	

Samples start at: 240.00 MD, 240.00 TVD, 277.29 SSL

240.00 to 280.00 (40.00)	100%	**Shale** light gray, slightly friable, earthy; trace calcite, quartz
280.00 to 285.00 (5.00)	70%	**Shale** medium gray, slightly friable, earthy; trace calcite
	30%	**Sandstone** light gray, mostly quartz, trace shale, very fine grains, subangular, well sorted, 30% calcite cement, consolidated, moderate relief, tight
285.00 to 290.00 (5.00)	80%	**Shale** medium gray, slightly micromicaceous, slightly friable, earthy; trace calcite
	20%	**Sandstone** white gray, mostly quartz, very fine grains, subangular, well sorted, 20% calcite cement, consolidated, moderate relief, tight
290.00 to 300.00 (10.00)	80%	**Sandstone** white, mostly quartz, trace shale, trace glauconite, very fine grains, subangular, well sorted, silica cement, consolidated, moderate relief, tight
	20%	**Shale** dark gray, slightly micromicaceous, harder; trace calcite
300.00 to 305.00 (5.00)	70%	**Sandstone** white, mostly quartz, trace shale, trace glauconite, very fine grains, subangular, well sorted, silica cement, consolidated, moderate relief, tight
	30%	**Shale** dark gray, slightly micromicaceous, hard
305.00 to 310.00 (5.00)	80%	**Shale** medium and dark gray, slightly micromicaceous, occasionally friable, slightly earthy; trace calcite
	20%	**Sandstone** white, mostly quartz, trace glauconite, very fine grains, subangular, well sorted, silica cement, consolidated, moderate relief, tight
310.00 to 315.00 (5.00)	100%	**Shale** dark gray, slightly micromicaceous, slightly earthy, occasionally friable; trace calcite, unconsolidated quartz sandstone as above
315.00 to 325.00 (10.00)	70%	**Sandstone** brown gr ıy, mostly quartz, glauconite, trace shale, very fine to fine grains, subangular, moderately sorted, 15% silica cement, consolidated, moderate relief. tight

315.00 to 325.00 (10.00)	30%	**Shale** medium gray, micromicaceous, hard; trace calcite
325.00 to 340.00 (15.00)	90%	**Sandstone** white, mostly quartz, glauconite, fine grains, subangular, well sorted, 10% silica cement, consolidated, moderate relief, tight
	10%	**Shale** medium gray, micromicaceous, hard
340.00 to 355.00 (15.00)	80%	**Sandstone** light gray, mostly quartz, trace glauconite, fine to very fine grains, subangular, well sorted, silty silica cement, consolidated, poor to moderate relief, tight
	20%	**Shale** dy and dark gray, micromicaceous, trace earthy, occasionally friable
355.00 to 375.00 (20.00)	60%	**Sandstone** gray, mostly quartz, trace glauconite, fine to very fine grains, subangular, well sorted, silty silica cement, consolidated, poor relief, tight
	40%	**Shale** light and dark gray, micromicaceous, hard
375.00 to 390.00 (15.00)	80%	**Shale** dark gray, black, micromicaceous, hard, occasionally platy
	20%	**Sandstone** as above
390.00 to 400.00 (10.00)	85%	**Shale** black, dark gray, micromicaceous, occasionally earthy, platy, hard
	15%	**Sandstone** dark gray, mostly quartz, glauconite, fine to very fine grains, subangular, moderately sorted, silica cement, well consolidated, poor relief, tight
400.00 to 425.00 (25.00)	75%	**Shale** black, micromicaceous, platy, slightly friable
	25%	**Siltstone** gray, quartz, very very fine grains, subangular, well sorted, occasional 10% cal cement, well consolidated, poor relief
425.00 to 435.00 (10.00)	90%	**Shale** black, micromicaceous, blocky, and platy, hard

425.00 to 435.00 (10.00)	10%	**Siltstone** dark gray, quartz, very very fine grains, subangular. well sorted, well consolidated, tight
435.00 to 465.00 (30.00)	80%	**Shale** dark gray, occasional black, micromicaceous, mostly blocky, occasionally platy, mostly hard
	20%	**Sandstone** light gray, mostly quartz, trace glauconite, very fine grains, subangular, well to moderately sorted, 10% calcite cement, trace silica cement, well consolidated, poor relief, tight
465.00 to 490.00 (25.00)	90%	**Shale** dark gray, micromicaceous, earthy, hard, silty
	10%	**Siltstone** gray, quartz, trace shale, trace glauconite, very very fine grains, subangular, moderately sorted, calcite cement, well consolidated
490.00 to 500.00 (10.00)	90%	**Shale** dark gray, micromicaceous, earthy, silty, hard, trace glauconite
	10%	**Sandstone** light gray, mostly quartz, trace glauconite, very fine grains, subangular, moderately sorted, trace calcite cement, well consolidated, poor relief, tight
500.00 to 530.00 (30.00)	90%	**Shale** black, dark gray, micromicaceous, slightly earthy, hard, trace glauconite
	10%	**Siltstone** gray, quartz, trace glauconite, very very fine grains. subangular, well cemented, moderately sorted, consolidated
530.00 to 535.00 (5.00)	100%	**Shale** black, micromicaceous, blocky, occasionally platy, hard
535.00 to 540.00 (5.00)	70%	**Shale** black, dark gray, micromicaceous, occasionally platy. blocky, moderately hard
	30%	**Sandstone** white gray, mostly quartz, glauconite. shale, mica (?). very fine grains, subangular, well sorted, 30% calcite cement, trace quartz overgrowth cement, well consolidated, poor relief, tight
540.00 to 550.00 (10.00)	60%	**Sandstone** white gray, occasionally brown, mostly quartz, glauconite, shale, vf-f grains, subangular, well sorted, 20% calcite cement, poor relief

540.00 to 550.00 (10.00)	40%	**Shale** dark gray, occasionally black, micromicaceous, hard, platy
550.00 to 560.00 (10.00)	60%	**Sandstone** gray, few brown, mostly quartz, glauconite, shale, mostly very fine grains, subangular, well sorted, 30% calcite cement, poor relief, tight
	40%	**Shale** dark gray, brown, black, micromicaceous, blocky, hard
560.00 to 570.00 (10.00)	60%	**Shale** dark gray, micromicaceous, mostly blocky, occasionally platy, moderately hard; trace pyrite
	40%	**Sandstone** gray, few brown, quartz, glauconite, shale, mostly very fine grains, few fine grains, subangular, well sorted, 10% calcite cement, moderately poor relief, tight

Scatter: 570.00 MD, 570.00 TVD, -62.71 SSL

570.00 to 580.00 (10.00)	50%	**Sandstone** gray, more brown, quartz, glauconite, shale, very fine to fine grains, subangular, well sorted, trace calcite cement, poor relief, tight
	50%	**Shale** dark gray, micromicaceous, slightly earthy, occasionally platy, mostly blocky and hard; trace pyrite
580.00 to 590.00 (10.00)	75%	**Sandstone** dark brown (oil stained), mostly quartz, glauconite, very fine to fine grains, subangular, moderately well sorted, silty cement, poor relief
	25%	**Shale** black, slightly micromicaceous, platy, hard; trace pyrite
590.00 to 595.00 (5.00)	65%	**Shale** dark brown gray, slightly earthy, micromicaceous, moderately hard
	35%	**Siltstone** dark brown, quartz, very very fine grains, subrounded, well sorted, poor relief, tight
595.00 to 600.00 (5.00)	80%	**Shale** dark gray to black, micromicaceous, platy, hard
	20%	**Siltstone** light and dark brown, quartz, very very fine grains, subrounded, well sorted, poor relief, tight

600.00 to 615.00 (15.00)	90%	**Shale** dark gray and occasionally black, platy, blocky, occasionally fissile, mostly hard, few are micromicaceous
	10%	**Siltstone** as above

Garbutt: 616.00 MD, 616.00 TVD, -99.71 SSL

615.00 to 635.00 (20.00)	90%	**Shale** black, occasionally dark brown, slightly micromicaceous, fairly massive, slightly platy, mostly hard
	10%	**Siltstone** gray, quartz, very very fine grains, subangular, well sorted, poor relief, tight
635.00 to 645.00 (10.00)	90%	**Shale** black, more micromicaceous, platy, hard; trace pyrite
	10%	**Siltstone** gray, brown, quartz, very very fine grains, subangular, well sorted, tight
645.00 to 665.00 (20.00)	85%	**Shale** dark gray and black, micromicaceous, hard, slightly platy; trace pyrite, quartz, calcite
	15%	**Sandstone** gray, quartz, glauconite, mostly very fine grains, subangular, moderately well sorted, 10% calcite cement, poor relief, tight
665.00 to 680.00 (15.00)	90%	**Shale** dark gray and black, micromicaceous, occasionally platy, mostly hard, fairly massive
	10%	**Sandstone** gray, quartz, trace glauconite, very fine grains, subangular, well sorted, trace calcite cement, poor relief, tight

Chinkeh: 689.00 MD, 689.00 TVD, -171.71 SSL

680.00 to 690.00 (10.00)	95%	**Shale** dark gray and black, massive, platy, hard, occasionally micromicaceous, trace glauconite, trace siderite nodules; trace pyrite, calcite, quartz
	5%	**Sandstone** gray, quartz, glauconite, mostly very very fine grains, subangular, well sorted, 10% calcite cement, poor relief, tight
690.00 to 695.00 (5.00)	90%	**Shale** dark gray and black, massive, platy, hard, siderite nodules; trace pyrite, coal , calcite

690.00 to 695.00 (5.00)	10%	**Sandstone** as above
695.00 to 710.00 (15.00)	100%	**Shale** dark gray and black, occasionally micromicaceous, platy, hard, occasional siderite nodules; trace pyrite, coal , calcite, chert pebbles
710.00 to 720.00 (10.00)	100%	**Shale** dark gray, black, occasionally micromicaceous, platy, hard; trace Limestone, calcite, chert pebbles, siderite
720.00 to 725.00 (5.00)	90%	**Shale** dark gray and black, occasionally micromicaceous, platy, hard; trace siderite, pyrite, coal, Limestone
	10%	**Sandstone** gray, quartz, trace glauconite, very fine grains, subangular, well sorted, 10% calcite cement, well consolidated, poor relief, tight
725.00 to 730.00 (5.00)	90%	**Shale** dark gray, black, occasionally micromicaceous, platy, moderately hard
	10%	**Sandstone** gray, quartz, trace glauconite, very fine grains, subangular, well sorted, 10% calcite cement, well consolidated, poor relief, tight
730.00 to 735.00 (5.00)	80%	**Shale** dark gray, black, micromicaceous, platy, moderately hard, trace pyrite
	20%	**Sandstone** white gray, quartz, glauconite, very fine grains, subangular, well sorted, 10% calcite cement, well consolidated, poor relief, tight
735.00 to 745.00 (10.00)	90%	**Shale** dark gray, occasional black, micromicaceous, platy. hard; trace pyrite, chert
	10%	**Sandstone** as above

Debolt: 746.00 MD, 746.00 TVD, -228.71 SSL

745.00 to 755.00 (10.00)	100%	**Shale** dark gray, black, calcareous, micromicaceous, platy, hard, trace pyrite; trace sandstone
755.00 to 760.00 (5.00)	100%	**Shale** dark gray, slightly micromicaceous, platy, calcareous, moderately hard; trace pyrite, calcite, Limestone

760.00 to 765.00 (5.00)	80%	**Shale** dark gray, occasionally micromicaceous, platy, moderately hard, trace pyrite; trace calcite
	20%	**Limestone** gray and light gray, cryptxl, mudstn, 10 to 30% calcite cement, C-C; trace amber calcite fracture fill; occasional fine grain grainstone
765.00 to 770.00 (5.00)	70%	**Shale** as above
	30%	**Limestone** gray, brown, cryptxl, mudstn, 10 to 30% calcite cement, C-C; trace amber calcite fracture fill; occasional fine grain grainstone
770.00 to 775.00 (5.00)	75%	**Shale** as above
	25%	**Sandstone** light gray, quartz, glauconite, trace shale, very fine grains, subangular, moderately well sorted, 30% calcite cement, poor relief, tight
775.00 to 780.00 (5.00)	80%	**Shale** black, dark gray, dark brown, platy, occasionally micromicaceous, moderately hard; trace pyrite, calcite
	20%	**Sandstone** dark brown, qz, very fine grains, subangular, well consolidated, silica cement, tight; trace Limestone as above
780.00 to 785.00 (5.00)	85%	**Shale** as above
	15%	**Sandstone** as above; trace calcareous material
785.00 to 790.00 (5.00)	70%	**Shale** black, dark gray, platy, occasionally micromicaceous, moderately hard: trace pyrite, calcite, sandstone as above
	30%	**Limestone** white gray, very fine grain grainstone, occasionally cryptxl mudstone, 30% calcite cement, C-C
790.00 to 795.00 (5.00)	50%	**Limestone** white, dark gray, fine grain grainstone, trace cryptxl mudstone, 30% calcite cement, C-C
	50%	**Shale** black, dark gray, platy, moderately hard, occasionally micromicaceous

795.00 to 800.00 (5.00)	70%	**Limestone** white gray, very fine grain grainstone, occasionally cryptxl mudstone, 30% calcite cement, C-C, poor relief, tight, trace crinoid, brach
	30%	**Shale** black, platy, slightly fissile
805.00 to 810.00 (5.00)	70%	**Shale** dark gray and black, platy, moderately hard, occasionally fissile
	30%	**Limestone** gray, very fine grain grainstone, occasionally cryptxl mudstone, 30% calcite cement, C-C, moderately poor relief, no porosity or permeability seem
810.00 to 815.00 (5.00)	70%	**Shale** mostly black, platy, fissile, trace coal (?)
	30%	**Limestone** light gray and dark brown, very fine grain grainstone, 10% calcite cement, C-C, moderately poor relief, no shows seen
815.00 to 820.00 (5.00)	70%	**Shale** dark gray, black, occasionally light brown, massive, platy, slightly fissile; trace pyrite
	30%	**Limestone** gray, brown, very fine grain grainstone, 10% calcite cement, C-C, moderately poor relief, looking tight
820.00 to 824.00 (4.00)	80%	**Shale** as above
	20%	**Limestone** gray, occasionally brown, very fine grain grainstone, 10 to 20% calcite cement, C-C; trace crinoid, pyrite

Total Depth: 824.00 MD, 824.00 TVD, -303.71 SSL

Well Name:	**Anadarko Arrowhead River J-74**
Location:	Arrowhead River
UWI:	300J746040122450
Pool:	Chinkeh
Field:	Arrowhead
Province / State:	NWT
Country:	Canada

Elevations

Reference:	512.51	Ground:	512.51 m
Cut(-) / Fill(+):		Kelly Bushing:	517.29 m
K.B. to Ground:	4.78 m	Casing Flange:	517.31 m

Total Depth

Measurement Type	Measured Depth	True Vertical Depth
Drillers TD (Tally)	824 m	824 m
Drillers TD (Strap or SLM)	m	m
Loggers TD	821 m	821 m

Surface Co - Ordinates

Well Type: Straight Longitude: Latitude:

N / S Co - Ordinates: 69 33 35 4 N

E / W Co - Ordinates: 122 58 53 1 W

Bottom Hole Co - Ordinates

Longitude: Latitude:

N / S Co - Ordinates: 69 33 35 4 N

E / W Co - Ordinates: 122 58 53 1 W

Drilling Fluid Summary

Fluid Type	From	To
Gelchem	240 m	824 m

Casing Summary

Type	Hole Size	Casing Size	Landed At
Surface	311 mm	219.1 mm	240 m
Production	200 mm	139.7 mm	824 m

Well Summary

Spud Date:	Mar 10, 2003 @ 04:00hrs	Contractor:	Akita # 15
TD Date:	Mar 15, 2003 @ 04:00hrs	Rig Release Date:	Mar 17, 2003 @ 08:00hrs

Work Schedule

Contractor	Geologist	Log Interval	Dates Logged

Remarks

Legend

Rock Types and Thin Beds

Whole Bed | Stringer | Nodule | Breccia | Clast | Pebble | Grain | Rock Type

Anhydrite - primary
Anhydrite - secondary
Argillite
Barite
Bentonite
Breccia
Calcareous
Cement
Conglomerate - mixed
Conglomerate - dark chert
Conglomerate - light chert
Conglomerate - varicolored chert
Chert - dark
Chert - fossiliferous
Chert - light
Chert - tripolitic
Chert - varicolored
Claystone - colored
Claystone - gray
Coal
Dolomite
Ferruginous
Feldspar
Gypsum
Igneous - acidic
Igneous - basic
Igneous - metamorphic
Limestone - grain supported
Limestone - mud supported
Manganese
Marlstone - calcareous
Marlstone - dolomitic
Phosphate
Pyrite
Quartz
Salt
Shale - black
Shale - dark gray
Shale - medium gray
Shale - light gray
Shale - green
Shale - red
Siderite
Sandstone
Siltstone
Till - glacial
Volcanic (Tuff)
Welded Volcanic (Tuff)

Accessories

	Anhydritic	G	Gibbsitic
	Argillaceous	I	Illitic
	Baritic	K	Kaolinitic
	Bentonitic		Lithic Fragment
	Bituminous		Marly - calcareous
	Calcareous		Marly - dolomitic
	Carbonaceous		Micromicaceous
	Cherty - dark	ML	Mixed layer clayey
	Cherty - fossiliferous	M	Montmorillonitic
	Cherty - light		Phosphate pellets
	Cherty - tripolitic	P	Pyritic
	Cherty - varicolored		Salt casts
C	Chloritic		Sandy
	Clayey		Sideritic
	Dolomitic		Siliceous
	Ferruginous staining		Silty
	Fractures		Stylolitic
	Glauconitic		Tuffaceous
	Gypsiferous	Z	Zeolitic

Fossils (Rock Builders)

	Aggregate grains		Euryamphipora
	Algae - laminations		Foraminifera
	Algae - non descript	F	Fossil
	Algae - ootoid		Fragmental
	Algae - skeletal		Gastropod
	Amphipora		Graptolite
	Belemnite		Hydrozoa
	Bioclastic		Intraclast
	Brachiopod		Mollusc
	Bryozoa		Oncolite
	Calciphaera		Oolite
	Cephalopod		Ostracod
	Chaetetes		Pelecypod
	Coated grain		Pellet
	Conodont		Pisolite
	Coral		Plant Remains
	Coral - branching		Scaphopod
	Coral - head		Spicule
	Coral - colonial		Sponge
	Coral - solitary		Stromatoporoid
	Crinoid		Stromatoporoid - bulbous
	Diatom		Stromatoporoid - massive
	Echnoid		Stromatoporoid - tabular
	Echnoid - spine		Tentaculites
	Fish Remains		Trilobite

Miscellaneous Grains

	Biotite		Mineral crystal		Orthoclase
	Glauconite		Mineral - dark		Plagioclase
	Mica flakes		Muscovite		Sand grain

Textures

	Chalky		Earthy		Microcrystalline
	Cryptocrystalline		Lithographic		Slickenside

Matrix

	Argillaceous		Marl - dolomitic
	Bentonite		Micrite
	Bituminous		Mixed Clay
	Clay		Montmorillonite
	Chlorite		Sand
	Gibbsite		Silt
	Illite		Sparry Calcite
	Kaolinite		Zeolite
	Marl - calcareous		

Porosity Type Track

	Earthy - low permeability - crystals / grains less than 1 / 16 mm
	Fenestral - voids from gas bubbles - shrinkage cracks - birdseye texture
F	Fracture
	Intercrystalline - Interfragmental - Intergranular
	Interoolitic - Interpelletoidal
	Moldic
	Organic - Bridged - Intrafossil
	Vuggy - voids less than 1/ 16 mm

Cement

	Anhydritic		Gypsiferous
	Baritic		Hematitic
	Bituminous		Limonitic
	Calcareous		Pyritic
	Chert - dark		Salt
	Chert - light		Sideritic
	Dolomitic		Siliceous
	Ferruginous		

Geologist: Ryan Thomas
Geologist: Ryan Thomas
Geologist: Ryan Thomas

WIRELINE REPORT

N.E.B. COPY

COPY

Company: ANADARKO CANADA CORPORATION
Well name: ANADARKO ARROWHEAD
Location: J-74
Date of test: 03/25/03 TO 06/10/03
Test by RAPID WIRELINE SERVICES LTD.
Interp. by P.D.Q. Services Ltd.

Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / CHINKEH
Type of test: SINGLE POINT
Prod. Int KB: 690.0 to 692.0
Elev. (CF) 512.51 (KB) 517.29
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: J-74
Status: GAS
Date of test: 03/25/03 TO 06/10/03
Prod. through: 73.0 X 60.3MM TUBING
Mid-point prod.int. KB: 691
Datum depth of well KB:

Tubing pres: INITIAL: N/A FIN: 4805
Shut in time: 03/28/03 01:05 HRS
Temperature at run depth: 30.398
Deviated well: N

Casing pres: INITIAL: N/A FIN: 382
Duration of Shut in: 1789.4000 HRS
On/off btm: 03/25/03 / 06/10/03
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9740
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03
Reading Interval: 30 SECONDS
Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.3

BOTTOM RECORDER

Element serial#: 9741
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03
Reading Interval: 30 SECONDS
Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.8

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/25/2003 21:29:00 ON BOTTOM				
3/25/2003 21:29:00	0.0000	0.0000	23.854	3565.87	
3/25/2003 22:36:00	1.1167	1.1167	30.149	3766.66	
3/25/2003 23:29:00	2.0000	2.0000	30.290	3892.50	
	03/25/2003 23:29:00 OPENED WELL TO FLOW				
3/25/2003 23:29:00	2.0000	0.0000	30.290	3892.50	
3/25/2003 23:29:30	2.0083	0.0083	30.263	3593.78	
3/25/2003 23:30:00	2.0167	0.0167	27.422	2745.39	
3/25/2003 23:30:30	2.0250	0.0250	25.516	2193.32	
3/25/2003 23:31:00	2.0333	0.0333	25.135	1777.54	
3/25/2003 23:31:30	2.0417	0.0417	25.368	1461.48	
3/25/2003 23:32:00	2.0500	0.0500	25.935	1196.16	
3/25/2003 23:33:00	2.0667	0.0667	27.589	876.37	
3/25/2003 23:34:30	2.0917	0.0917	28.138	637.67	
3/25/2003 23:39:30	2.1750	0.1750	28.502	437.30	
3/26/2003 01:32:30	4.0583	2.0583	28.531	269.37	
	03/26/2003 01:32:30 SHUT WELL IN				
3/26/2003 01:32:30	4.0583	0.0000	28.531	269.37	
3/26/2003 01:35:30	4.1083	0.0500	29.085	496.58	
3/26/2003 01:38:30	4.1583	0.1000	29.616	699.90	
3/26/2003 01:42:30	4.2250	0.1667	29.887	922.65	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9740

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.3

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/26/2003 01:47:00	4.3000	0.2417	30.061	1139.70	
3/26/2003 01:52:00	4.3833	0.3250	30.110	1345.23	
3/26/2003 01:58:00	4.4833	0.4250	30.139	1556.60	
3/26/2003 02:05:00	4.6000	0.5417	30.154	1763.35	
3/26/2003 02:13:30	4.7417	0.6833	30.075	1969.54	
3/26/2003 02:24:30	4.9250	0.8667	29.929	2178.14	
3/26/2003 02:38:00	5.1500	1.0917	29.790	2378.59	
3/26/2003 02:56:00	5.4500	1.3917	29.640	2583.14	
3/26/2003 03:19:30	5.8417	1.7833	29.541	2785.50	
3/26/2003 03:47:30	6.3083	2.2500	29.824	2986.74	
3/26/2003 04:24:00	6.9167	2.8583	30.165	3188.79	
3/26/2003 05:12:00	7.7167	3.6583	30.312	3389.54	
3/26/2003 06:15:00	8.7667	4.7083	30.376	3589.82	
3/26/2003 07:39:30	10.1750	6.1167	30.405	3790.59	
3/26/2003 09:34:30	12.0917	8.0333	30.444	3990.71	
3/26/2003 12:15:00	14.7667	10.7083	30.489	4191.10	
3/26/2003 13:28:00	15.9833	11.9250	30.508	4263.02	
	03/26/2003 13:28:00 OPENED WELL TO FLOW				
3/26/2003 13:28:00	15.9833	0.0000	30.508	4263.02	
3/26/2003 13:30:00	16.0167	0.0333	29.347	3389.99	
3/26/2003 13:30:30	16.0250	0.0417	26.048	2683.11	
3/26/2003 13:31:00	16.0333	0.0500	25.205	2172.92	
3/26/2003 13:31:30	16.0417	0.0583	25.243	1785.44	
3/26/2003 13:32:00	16.0500	0.0667	25.811	1474.49	
3/26/2003 13:32:30	16.0583	0.0750	26.871	1242.59	
3/26/2003 13:33:30	16.0750	0.0917	27.978	941.41	
3/26/2003 13:35:00	16.1000	0.1167	28.358	711.90	
3/26/2003 13:40:00	16.1833	0.2000	28.699	504.07	
3/26/2003 14:27:00	16.9667	0.9833	28.814	303.60	
3/26/2003 21:29:00	24.0000	8.0167	28.933	366.14	
3/27/2003 21:29:00	48.0000	32.0167	29.443	555.97	
3/28/2003 01:05:00	51.6000	35.6167	29.481	571.27	
	03/28/2003 01:05:00 SHUT WELL IN FOR BUILD UP				
3/28/2003 01:05:00	51.6000	0.0000	29.481	571.27	
3/28/2003 01:11:30	51.7083	0.1083	29.584	771.78	
3/28/2003 01:23:00	51.9000	0.3000	29.411	977.99	
3/28/2003 01:37:00	52.1333	0.5333	29.574	1184.76	
3/28/2003 01:54	.4167	0.8167	29.676	1389.49	
3/28/2003 02:18:00	52.8167	1.2167	29.624	1589.51	
3/28/2003 02:51:30	53.3750	1.7750	29.557	1790.24	
3/28/2003 03:38:00	54.1500	2.5500	29.502	1990.50	
3/28/2003 04:29:00	55.0000	3.4000	29.722	2192.35	
3/28/2003 05:20:00	55.8500	4.2500	30.077	2392.97	
3/28/2003 06:33:00	57.0667	5.4667	30.272	2593.70	
3/28/2003 08:13:00	58.7333	7.1333	30.348	2794.68	
3/28/2003 10:26:30	60.9583	9.3583	30.396	2994.88	
3/28/2003 13:25:30	63.9417	12.3417	30.423	3195.08	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9740

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.3

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/28/2003 17:27:30	67.9750	16.3750	30.464	3395.11	
3/28/2003 21:29:00	72.0000	20.4000	30.498	3548.25	
3/29/2003 04:28:30	78.9917	27.3917	30.542	3748.42	
3/29/2003 14:13:00	88.7333	37.1333	30.562	3948.44	
3/29/2003 21:29:00	96.0000	44.4000	30.567	4062.16	
3/30/2003 14:53:30	113.4083	61.8083	30.559	4262.18	
3/30/2003 21:29:00	120.0000	68.4000	30.552	4319.37	
3/31/2003 21:29:00	144.0000	92.4000	30.542	4478.31	
4/1/2003 21:29:00	168.0000	116.4000	30.530	4588.94	
4/2/2003 21:29:00	192.0000	140.4000	30.515	4671.57	
4/3/2003 21:29:00	216.0000	164.4000	30.505	4736.21	
4/4/2003 21:29:00	240.0000	188.4000	30.493	4788.74	
4/5/2003 21:29:00	264.0000	212.4000	30.484	4832.50	
4/6/2003 21:29:00	288.0000	236.4000	30.470	4869.70	
4/7/2003 21:29:00	312.0000	260.4000	30.461	4901.83	
4/8/2003 21:29:00	336.0000	284.4000	30.451	4930.03	
4/9/2003 21:29:00	360.0000	308.4000	30.440	4955.17	
4/10/2003 21:29:00	384.0000	332.4000	30.430	4977.85	
4/11/2003 21:29:00	408.0000	356.4000	30.425	4998.24	
4/12/2003 21:29:00	432.0000	380.4000	30.418	5016.86	
4/13/2003 21:29:00	456.0000	404.4000	30.413	5033.90	
4/14/2003 21:29:00	480.0000	428.4000	30.406	5049.65	
4/15/2003 21:29:00	504.0000	452.4000	30.401	5064.17	
4/16/2003 21:29:00	528.0000	476.4000	30.400	5077.75	
4/17/2003 21:29:00	552.0000	500.4000	30.398	5090.26	
4/18/2003 21:29:00	576.0000	524.4000	30.391	5102.01	
4/19/2003 21:29:00	600.0000	548.4000	30.390	5113.07	
4/20/2003 21:29:00	624.0000	572.4000	30.384	5123.37	
4/21/2003 21:29:00	648.0000	596.4000	30.382	5133.01	
4/22/2003 21:29:00	672.0000	620.4000	30.380	5142.08	
4/23/2003 21:29:00	696.0000	644.4000	30.378	5151.08	
4/24/2003 21:29:00	720.0000	668.4000	30.376	5159.21	
4/25/2003 21:29:00	744.0000	692.4000	30.375	5166.88	
4/26/2003 21:29:00	768.0000	716.4000	30.375	5174.37	
4/27/2003 21:29:00	792.0000	740.4000	30.371	5181.41	
4/28/2003 21:29:00	816.0000	764.4000	30.371	5188.01	
4/29/2003 21:29:00	840.0000	788.4000	30.370	5194.54	
4/30/2003 21:29:00	864.0000	812.4000	30.370	5200.50	
5/1/2003 21:29:00	888.0000	836.4000	30.365	5206.36	
5/2/2003 21:29:00	912.0000	860.4000	30.364	5211.94	
5/3/2003 21:29:00	936.0000	884.4000	30.366	5217.28	
5/4/2003 21:29:00	960.0000	908.4000	30.365	5222.38	
5/5/2003 21:29:00	984.0000	932.4000	30.362	5227.42	
5/6/2003 21:29:00	1008.0000	956.4000	30.362	5232.32	
5/7/2003 21:29:00	1032.0000	980.4000	30.360	5236.96	
5/8/2003 21:29:00	1056.0000	1004.4000	30.363	5241.27	
5/9/2003 21:29:00	1080.0000	1028.4000	30.360	5245.71	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9740

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.3

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
5/10/2003 21:29:00	1104.0000	1052.4000	30.358	5249.64	
5/11/2003 21:29:00	1128.0000	1076.4000	30.356	5253.85	
5/12/2003 21:29:00	1152.0000	1100.4000	30.355	5257.50	
5/13/2003 21:29:00	1176.0000	1124.4000	30.356	5261.17	
5/14/2003 21:29:00	1200.0000	1148.4000	30.352	5265.04	
5/15/2003 21:29:00	1224.0000	1172.4000	30.354	5268.48	
5/16/2003 21:29:00	1248.0000	1196.4000	30.351	5271.94	
5/17/2003 21:29:00	1272.0000	1220.4000	30.354	5275.34	
5/18/2003 21:29:00	1296.0000	1244.4000	30.354	5278.68	
5/19/2003 21:29:00	1320.0000	1268.4000	30.351	5281.61	
5/20/2003 21:29:00	1344.0000	1292.4000	30.352	5284.73	
5/21/2003 21:29:00	1368.0000	1316.4000	30.351	5287.63	
5/22/2003 21:29:00	1392.0000	1340.4000	30.352	5290.55	
5/23/2003 21:29:00	1416.0000	1364.4000	30.351	5293.29	
5/24/2003 21:29:00	1440.0000	1388.4000	30.350	5295.84	
5/25/2003 21:29:00	1464.0000	1412.4000	30.348	5298.58	
5/26/2003 21:29:00	1488.0000	1436.4000	30.350	5301.25	
5/27/2003 21:29:00	1512.0000	1460.4000	30.351	5303.82	
5/28/2003 21:29:00	1536.0000	1484.4000	30.348	5306.08	
5/29/2003 21:29:00	1560.0000	1508.4000	30.345	5308.43	
5/30/2003 21:29:00	1584.0000	1532.4000	30.346	5311.06	
5/31/2003 21:29:00	1608.0000	1556.4000	30.348	5313.20	
6/1/2003 21:29:00	1632.0000	1580.4000	30.350	5315.40	
6/2/2003 21:29:00	1656.0000	1604.4000	30.347	5317.60	
6/3/2003 21:29:00	1680.0000	1628.4000	30.347	5319.92	
6/4/2003 21:29:00	1704.0000	1652.4000	30.346	5321.77	
6/5/2003 21:29:00	1728.0000	1676.4000	30.348	5323.88	
6/6/2003 21:29:00	1752.0000	1700.4000	30.343	5325.61	
6/7/2003 21:29:00	1776.0000	1724.4000	30.345	5327.73	
6/8/2003 21:29:00	1800.0000	1748.4000	30.346	5329.62	
6/9/2003 21:29:00	1824.0000	1772.4000	30.346	5331.32	
6/10/2003 14:29:00	1841.0000	1789.4000	30.342	5322.31	
	06/10/2003 14:29:00 OFF BOTTOM				

Remarks:

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / CHINKEH
Type of test: SINGLE POINT
Prod. Int KB: 690.0 to 692.0
Elev. (CF) 512.51 (KB) 517.29
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: J-74
Status: GAS
Date of test: 03/25/03 TO 06/10/03
Prod. through: 73.0 X 60.3MM TUBING
Mid-point prod.int. KB: 691
Datum depth of well KB:

Tubing pres: INITIAL: N/A FIN: 4805
Shut in time: 03/28/03 01:05 HRS
Temperature at run depth: 30.398
Deviated well: N

Casing pres: INITIAL: N/A FIN: 382
Duration of Shut in: 1789.4000 HRS
On/off btm: 03/25/03 / 06/10/03
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9740
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03
Reading Interval: 30 SECONDS
Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.3

BOTTOM RECORDER

Element serial#: 9741
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03
Reading Interval: 30 SECONDS
Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.8

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/25/2003 21:29:00 ON BOTTOM				
3/25/2003 21:29:00	0.0000	0.0000	24.877	3570.96	
3/25/2003 22:37:30	1.1417	1.1417	30.266	3771.88	
3/25/2003 23:29:00	2.0000	2.0000	30.343	3894.18	
	03/25/2003 23:29:00 OPENED WELL TO FLOW				
3/25/2003 23:29:00	2.0000	0.0000	30.343	3894.18	
3/25/2003 23:29:30	2.0083	0.0083	30.306	3593.81	
3/25/2003 23:30:00	2.0167	0.0167	26.915	2745.40	
3/25/2003 23:30:30	2.0250	0.0250	25.203	2194.81	
3/25/2003 23:31:00	2.0333	0.0333	25.066	1780.82	
3/25/2003 23:31:30	2.0417	0.0417	25.480	1467.41	
3/25/2003 23:32:00	2.0500	0.0500	26.178	1202.37	
3/25/2003 23:33:00	2.0667	0.0667	27.805	882.38	
3/25/2003 23:34:30	2.0917	0.0917	28.272	642.56	
3/25/2003 23:39:30	2.1750	0.1750	28.590	441.88	
3/26/2003 01:32:30	4.0583	2.0583	28.596	270.22	
	03/26/2003 01:32:30 SHUT WELL IN				
3/26/2003 01:32:30	4.0583	0.0000	28.596	270.22	
3/26/2003 01:35:30	4.1083	0.0500	29.225	499.04	
3/26/2003 01:38:30	4.1583	0.1000	29.709	702.26	
3/26/2003 01:42:30	4.2250	0.1667	29.962	924.76	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9741

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.8

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/26/2003 01:47:00	4.3000	0.2417	30.131	1141.99	
3/26/2003 01:52:00	4.3833	0.3250	30.175	1347.59	
3/26/2003 01:58:00	4.4833	0.4250	30.209	1558.94	
3/26/2003 02:05:00	4.6000	0.5417	30.231	1765.45	
3/26/2003 02:13:30	4.7417	0.6833	30.171	1971.11	
3/26/2003 02:24:30	4.9250	0.8667	30.018	2179.65	
3/26/2003 02:38:00	5.1500	1.0917	29.875	2380.45	
3/26/2003 02:56:00	5.4500	1.3917	29.723	2584.97	
3/26/2003 03:19:30	5.8417	1.7833	29.625	2787.18	
3/26/2003 03:47:30	6.3083	2.2500	29.992	2987.71	
3/26/2003 04:24:00	6.9167	2.8583	30.289	3190.05	
3/26/2003 05:12:00	7.7167	3.6583	30.388	3390.90	
3/26/2003 06:15:00	8.7667	4.7083	30.427	3591.06	
3/26/2003 07:39:30	10.1750	6.1167	30.440	3791.87	
3/26/2003 09:35:00	12.1000	8.0417	30.486	3992.41	
3/26/2003 12:15:30	14.7750	10.7167	30.529	4192.70	
3/26/2003 13:28:00	15.9833	11.9250	30.549	4256.41	
	03/26/2003 13:28:00 OPENED WELL TO FLOW				
3/26/2003 13:28:00	15.9833	0.0000	30.549	4256.41	
3/26/2003 13:30:00	16.0167	0.0333	28.998	3359.39	
3/26/2003 13:30:30	16.0250	0.0417	25.613	2664.32	
3/26/2003 13:31:00	16.0333	0.0500	25.052	2160.30	
3/26/2003 13:31:30	16.0417	0.0583	25.284	1777.47	
3/26/2003 13:32:00	16.0500	0.0667	26.022	1467.24	
3/26/2003 13:32:30	16.0583	0.0750	27.181	1241.01	
3/26/2003 13:33:30	16.0750	0.0917	28.160	938.07	
3/26/2003 13:35:00	16.1000	0.1167	28.488	713.23	
3/26/2003 13:39:30	16.1750	0.1917	28.773	513.16	
3/26/2003 14:12:00	16.7167	0.7333	28.877	311.92	
3/26/2003 21:29:00	24.0000	8.0167	29.009	368.12	
3/27/2003 21:29:00	48.0000	32.0167	29.505	558.32	
3/28/2003 01:05:00	51.6000	35.6167	29.548	573.13	
	03/28/2003 01:05:00 SHUT WELL IN FOR BUILD UP				
3/28/2003 01:05:00	51.6000	0.0000	29.548	573.13	
3/28/2003 01:11:30	51.7083	0.1083	29.673	776.22	
3/28/2003 01:23:00	51.9000	0.3000	29.489	982.90	
3/28/2003 01:37:00	52.1333	0.5333	29.648	1188.75	
3/28/2003 01:54:00	52.4167	0.8167	29.749	1392.41	
3/28/2003 02:18:30	52.8250	1.2250	29.700	1595.42	
3/28/2003 02:52:00	53.3833	1.7833	29.632	1795.45	
3/28/2003 03:39:00	54.1667	2.5667	29.586	1997.02	
3/28/2003 04:30:00	55.0167	3.4167	29.821	2197.39	
3/28/2003 05:21:00	55.8667	4.2667	30.217	2397.82	
3/28/2003 06:34:30	57.0917	5.4917	30.335	2598.66	
3/28/2003 08:15:00	58.7667	7.1667	30.389	2799.66	
3/28/2003 10:29:30	61.0083	9.4083	30.424	3000.25	
3/28/2003 13:29:30	64.0083	12.4083	30.452	3200.26	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9741

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.8

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/28/2003 17:34:00	68.0833	16.4833	30.498	3400.62	
3/28/2003 21:29:00	72.0000	20.4000	30.540	3549.31	
3/29/2003 04:28:30	78.9917	27.3917	30.592	3749.47	
3/29/2003 14:12:00	88.7167	37.1167	30.614	3949.60	
3/29/2003 21:29:00	96.0000	44.4000	30.622	4063.42	
3/30/2003 14:54:00	113.4167	61.8167	30.623	4263.42	
3/30/2003 21:29:00	120.0000	68.4000	30.621	4320.55	
3/31/2003 21:29:00	144.0000	92.4000	30.617	4479.60	
4/1/2003 21:29:00	168.0000	116.4000	30.605	4589.92	
4/2/2003 21:29:00	192.0000	140.4000	30.602	4672.66	
4/3/2003 21:29:00	216.0000	164.4000	30.586	4737.34	
4/4/2003 21:29:00	240.0000	188.4000	30.581	4789.90	
4/5/2003 21:29:00	264.0000	212.4000	30.567	4833.55	
4/6/2003 21:29:00	288.0000	236.4000	30.558	4870.71	
4/7/2003 21:29:00	312.0000	260.4000	30.545	4902.83	
4/8/2003 21:29:00	336.0000	284.4000	30.537	4931.17	
4/9/2003 21:29:00	360.0000	308.4000	30.528	4956.30	
4/10/2003 21:29:00	384.0000	332.4000	30.522	4978.85	
4/11/2003 21:29:00	408.0000	356.4000	30.515	4999.35	
4/12/2003 21:29:00	432.0000	380.4000	30.509	5017.88	
4/13/2003 21:29:00	456.0000	404.4000	30.503	5035.11	
4/14/2003 21:29:00	480.0000	428.4000	30.495	5050.90	
4/15/2003 21:29:00	504.0000	452.4000	30.490	5065.43	
4/16/2003 21:29:00	528.0000	476.4000	30.482	5078.91	
4/17/2003 21:29:00	552.0000	500.4000	30.480	5091.32	
4/18/2003 21:29:00	576.0000	524.4000	30.479	5103.19	
4/19/2003 21:29:00	600.0000	548.4000	30.479	5114.19	
4/20/2003 21:29:00	624.0000	572.4000	30.474	5124.61	
4/21/2003 21:29:00	648.0000	596.4000	30.470	5134.28	
4/22/2003 21:29:00	672.0000	620.4000	30.466	5143.55	
4/23/2003 21:29:00	696.0000	644.4000	30.464	5152.07	
4/24/2003 21:29:00	720.0000	668.4000	30.462	5160.31	
4/25/2003 21:29:00	744.0000	692.4000	30.463	5168.18	
4/26/2003 21:29:00	768.0000	716.4000	30.462	5175.58	
4/27/2003 21:29:00	792.0000	740.4000	30.461	5182.64	
4/28/2003 21:29:00	816.0000	764.4000	30.460	5189.34	
4/29/2003 21:29:00	840.0000	788.4000	30.456	5195.63	
4/30/2003 21:29:00	864.0000	812.4000	30.454	5201.89	
5/1/2003 21:29:00	888.0000	836.4000	30.453	5207.62	
5/2/2003 21:29:00	912.0000	860.4000	30.455	5213.38	
5/3/2003 21:29:00	936.0000	884.4000	30.449	5218.34	
5/4/2003 21:29:00	960.0000	908.4000	30.452	5223.98	
5/5/2003 21:29:00	984.0000	932.4000	30.447	5228.87	
5/6/2003 21:29:00	1008.0000	956.4000	30.445	5233.54	
5/7/2003 21:29:00	1032.0000	980.4000	30.450	5238.26	
5/8/2003 21:29:00	1056.0000	1004.4000	30.447	5242.63	
5/9/2003 21:29:00	1080.0000	1028.4000	30.449	5246.92	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/25/03 TO 06/10/03
Element serial#: 9741

Well name: ANADARKO ARROWHEAD
Location: J-74
Run Depth (KB): 680.8

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
5/10/2003 21:29:00	1104.0000	1052.4000	30.441	5251.06	
5/11/2003 21:29:00	1128.0000	1076.4000	30.442	5255.11	
5/12/2003 21:29:00	1152.0000	1100.4000	30.444	5259.00	
5/13/2003 21:29:00	1176.0000	1124.4000	30.437	5262.80	
5/14/2003 21:29:00	1200.0000	1148.4000	30.435	5266.32	
5/15/2003 21:29:00	1224.0000	1172.4000	30.436	5269.95	
5/16/2003 21:29:00	1248.0000	1196.4000	30.432	5273.49	
5/17/2003 21:29:00	1272.0000	1220.4000	30.432	5276.72	
5/18/2003 21:29:00	1296.0000	1244.4000	30.429	5279.94	
5/19/2003 21:29:00	1320.0000	1268.4000	30.429	5283.12	
5/20/2003 21:29:00	1344.0000	1292.4000	30.429	5286.02	
5/21/2003 21:29:00	1368.0000	1316.4000	30.428	5289.03	
5/22/2003 21:29:00	1392.0000	1340.4000	30.426	5291.86	
5/23/2003 21:29:00	1416.0000	1364.4000	30.428	5294.63	
5/24/2003 21:29:00	1440.0000	1388.4000	30.428	5297.39	
5/25/2003 21:29:00	1464.0000	1412.4000	30.424	5300.00	
5/26/2003 21:29:00	1488.0000	1436.4000	30.422	5302.65	
5/27/2003 21:29:00	1512.0000	1460.4000	30.422	5305.29	
5/28/2003 21:29:00	1536.0000	1484.4000	30.423	5307.60	
5/29/2003 21:29:00	1560.0000	1508.4000	30.423	5309.98	
5/30/2003 21:29:00	1584.0000	1532.4000	30.422	5312.37	
5/31/2003 21:29:00	1608.0000	1556.4000	30.420	5314.42	
6/1/2003 21:29:00	1632.0000	1580.4000	30.420	5316.84	
6/2/2003 21:29:00	1656.0000	1604.4000	30.422	5319.04	
6/3/2003 21:29:00	1680.0000	1628.4000	30.420	5321.21	
6/4/2003 21:29:00	1704.0000	1652.4000	30.420	5323.34	
6/5/2003 21:29:00	1728.0000	1676.4000	30.418	5325.20	
6/6/2003 21:29:00	1752.0000	1700.4000	30.414	5327.12	
6/7/2003 21:29:00	1776.0000	1724.4000	30.417	5329.12	
6/8/2003 21:29:00	1800.0000	1748.4000	30.420	5331.12	
6/9/2003 21:29:00	1824.0000	1772.4000	30.416	5332.93	
6/10/2003 14:29:00	1841.0000	1789.4000	30.398	5323.96	
	06/10/2003 14:29:00 OFF BOTTOM				

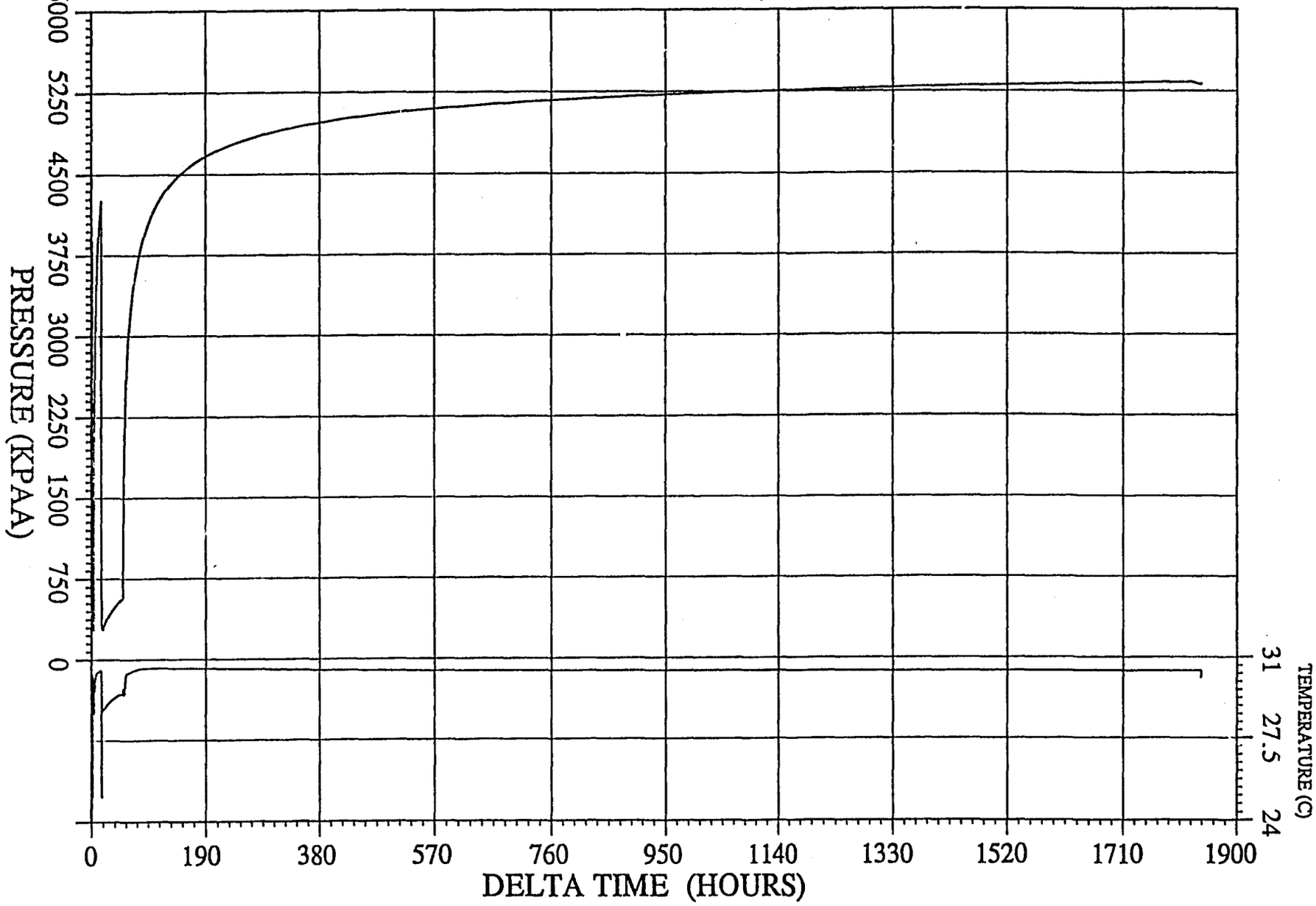
Remarks:

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA CORPORATION
Location: J-74
Element: 9741

Well name: ANADARKO ARROWHEAD
Date of test: 03/25/03 TO 06/10/03
By P.D.Q. SERVICES LTD.



Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
Address: CALGARY, ALBERTA
Field & Pool: ARROWHEAD / CHINKEH
Type of test: STATIC GRADIENT
Prod. Int KB: 690.0 to 692.0
Elev. (CF) 512.51 (KB) 517.29
Pool datum:

Well name: ANADARKO ARROWHEAD
Location: J-74
Status: GAS
Date of test: 06/10/03
Prod. through: 73.0 X 60.3MM TUBING
Mid-point prod.int. KB: 691
Datum depth of well KB:

Tubing pres: 4805
Shut in time: 03/28/03 01:05 HRS
Temperature at run depth: 30.398
Deviated well: N

Casing pres: 382
Duration of Shut in: 1789.4000 HRS
On bottom/off bottom: 14:24 / 14:29
Depths corrected to TVD: Y

Note: All units in metric, depth in meters kb; pressure in kPaa

TOP RECORDER

Element serial#: 9740
Pressure Range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03

Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.3
Grad. at run depth: 0.502
Pres. at run depth: 5322.3
Pres. at mid point perf.: 5327.7
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
4.3	6.31	4815.4	0.000
104.3	7.43	4873.2	0.579
204.3	12.05	4956.8	0.836
304.3	15.43	5048.4	0.916
404.3	19.33	5138.9	0.904
504.3	23.11	5220.9	0.821
554.3	25.21	5253.5	0.652
604.3	27.35	5282.8	0.585
650.3	29.30	5307.3	0.532
680.3	30.34	5322.3	0.502

Fluid level at N/A
Final pressure on bottom: 5322.3 KPAA

BOTTOM RECORDER

Element serial#: 9741
Pressure range: 41369 KPAA
CAL-SCAN ELECTRONIC RECORDER
Latest calibration: 03/08/03

Gauge started: 03/25/03 21:15
Gauge stopped: 06/10/03 15:30
Run depth (KB): 680.8
Grad. at run depth: 0.439
Pres. at run depth: 5324.0
Pres. at mid point perf.: 5328.4
Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
4.8	8.47	4818.3	0.000
104.8	6.64	4886.2	0.678
204.8	11.35	4966.4	0.802
304.8	14.79	5057.2	0.908
404.8	18.50	5147.5	0.902
504.8	22.45	5228.1	0.807
554.8	24.59	5260.3	0.644
604.8	26.68	5288.6	0.565
650.8	29.06	5310.8	0.483
680.8	30.40	5324.0	0.439

Fluid level at N/A
Final pressure on bottom: 5324.0 KPAA

Remarks:
REVERSE GRADIENT.

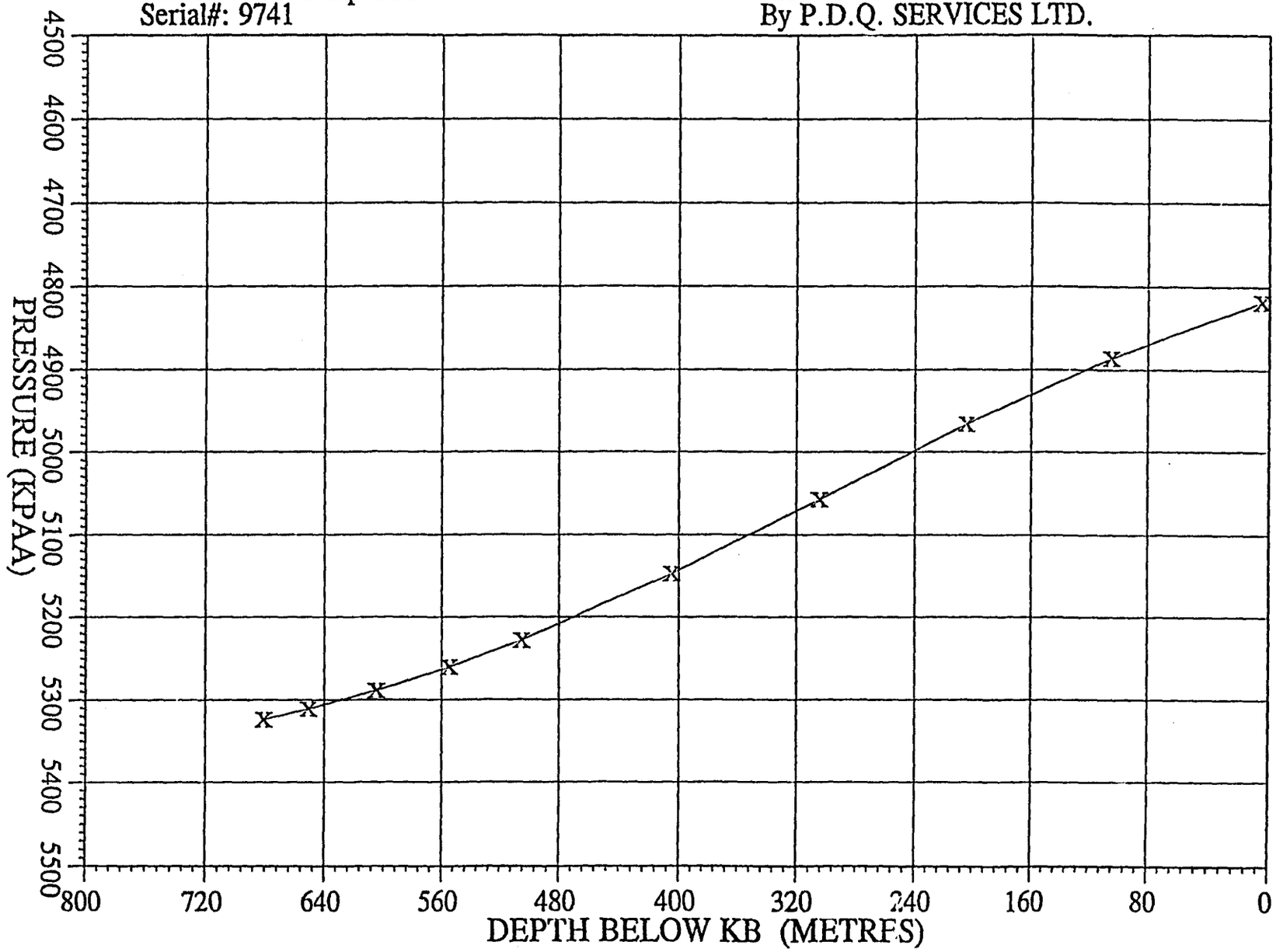
Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

GRADIENT TEST

Company: ANADARKO CANADA CORPORATION
Location: J-74
Pressure at run depth 5324.
Serial#: 9741

Well name: ANADARKO ARROWHEAD
Date of test: 06/10/03
Fluid level N/A
By P.D.Q. SERVICES LTD.



PROPOSED WELLSITE SURVEY

OVERSIZED

DOCUMENT

FILMED

ON

35mm

RESISTIVITY/ CONDUCTIVITY

Tucker WIRELINE SERVICES

DUAL INDUCTION RESISTIVITY LOG

N.E.B. COPY

File No. : 6-13831
Company : ANNAMARC CANADA CORPORATION
Well : ARCHERED RIVER J-74
Field : ARCHERED RIVER
Province : NWT
Country : Canada
Location : UNIQUE L.S.D.: 200/74N04W12W5O
LICENCE: 1987
Sect : Twp : Rge :

Date : MAR 15 2003
Witnessed By : E. LANGE
Recorded By : V. VIRESIAS
Drilling Measured From : KB
Depth—Driller : 824.0 M
Depth—Logger : 821.0 M
Bottom Logged Interval : 821.0 M
Top Log Interval : 239.0 M
Casing Depth—Driller : 240.0 M
Casing Depth—Logger : 237.50 M
Casing Diameter : 177.8 MM
Bit Size : 200.000 MM
Location : GRANDE PRAIRIE

Permanent Datum : GL
Elevation : 0.0 M
Above Permanent Datum : KB 4.78 M

Elevations:
KB : 0.0 M
DF : M
GL : -4.78 M

Additional Services
LDT
CNT
CST

The customer is hereby warned that by providing the log data herein, T. W. S. does not agree to provide any interpretation of log data, expression of log data to physical rock parameters or interpretations. T.W.S. does not guarantee or warrant the accuracy of the log data or interpretations. The customer is hereby warned that T.W.S. does not guarantee or warrant any actions or recommendations which may be given by T. W. S. personnel. Any interpretation, conclusion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. S. For the purpose of this section, the log data is warned that the customer is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Run Number 1

Depth To Fluid : 1.0 M
Fluid Type In Hole : GEL CHEM
Density : 1130.000
Viscosity : 85.000
pH : 10.000
Fluid Loss : 6.000
Salinity : 6.000

BH Source : FLOWLINE
BH : 4.500 OHMM at 12 C
BH at BHT : 2.550 OHMM at 31

RMF Source : PRESS
RMF : 3.500 OHMM at 12 C
RMF at BHT : 2.200 OHMM at 31

RMC Source : PRESS
RMC : 5.000 OHMM at 12 C
RMC at BHT : 3.150 OHMM at 31 C

Max Recorded Temp. : 31 C
Time Circulation Stopped : MAR 15 2003 @ 12:45
Operating Rig Time, Hrs. : 3.0

- Source Serial Numbers -

Gamma : 16362W
Neutron : 71-2A-931B

- Sonde Serial Numbers -

GRTB : GRT-BB-001
CNT : CNP-AA-110
LDT : LDP-CA-026
CST : CST-AB-007
PIT : PIT-AB-017

Casing Strings

Size (MM)	Weight (KG/CU)	Bottom (M)
219.100	35.78	139.00

- Comments -

1) ALL SCALES AND INTERVALS AT CLIENT'S REQUEST.
2) SFL IS ENVIRONMENTALLY CORRECTED.
3) CALIPERS VERIFIED IN CASING.
4) 30.1 MM CENTRALIZILION BASKETS WERE DEPLOYED ON PIT.
5) TWO BOWSPRING CENTRALIZERS DEPLOYED ON CST.
6) DUPLICATED BULK DENSITY INSTEAD OF DENSITY POROSITY AT CLIENT'S REQUEST.
7) RECORDED GR TO SURFACE. PRESENTED ON SONIC 1:600 SCALE.

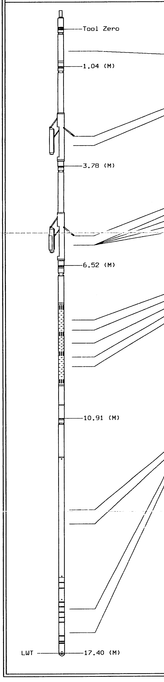
RUN 1: GRT,CNT,LDT,CST,PIT

OPERATORS:
D. HULICKI
E. PINNEKT

RIG: AKITA #15

Tool String Schematic

Total Tool Length : 18.23 (m)
Maximum Outside diameter - 133.35 (mm)
Net Weight in Air - 440.44 (Kgs)



Tool: GRTB Length: 1.04 (M) O.D.: 91.44(mm)
Sonde ID : GRT-BB-001
Measure Point Stack Offset Tool Offset
GRP 0.61 0.61

Tool: CNT Length: 2.74 (M) O.D.:110.24(mm)
Sonde ID : CNP-AA-110
Source ID : 71-2A-931B
Pad ID : CNP-AA-110
Measure Point Stack Offset Tool Offset
CLCN 2.07 1.83
PHIN 3.12 2.08

Tool: LDT Length: 2.74 (M) O.D.:133.35(mm)
Sonde ID : LDP-CA-026
Source ID : 16362W
Pad ID : LDP-CA-026
Measure Point Stack Offset Tool Offset
CALD 5.61 1.83
PEL 5.99 2.21
PES 5.99 2.21
LDEN 5.99 2.21
LZDE 6.99 2.21

Tool: CST Length: 4.39 (M) O.D.: 91.44(mm)
Sonde ID : CST-AB-007
Measure Point Stack Offset Tool Offset
CTE 7.99 1.46
TT3 8.29 1.77
CDT 8.75 2.23
TT4 9.20 2.68
TT2 9.51 2.99

Tool: PIT Length: 6.49 (M) O.D.: 92.07(mm)
Sonde ID : PIT-AB-017
Measure Point Stack Offset Tool Offset
ILD 13.63 2.72
ILM 13.99 3.08
SFLU 16.24 5.33
SP 17.19 6.28

TENSION
KG
5000 0

SPONTANEOUS POTENTIAL
mV
-+| |+ 10

GAMMA RAY
API UNITS
150 300
0 150

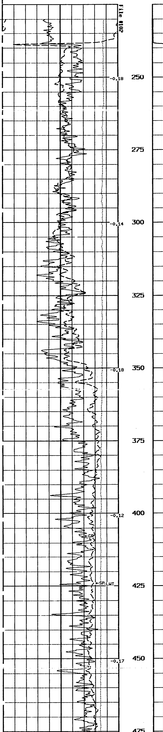
SHALLOW FOCUSED RESISTIVITY
OHMM
0.0 200.0
0.0 20.0

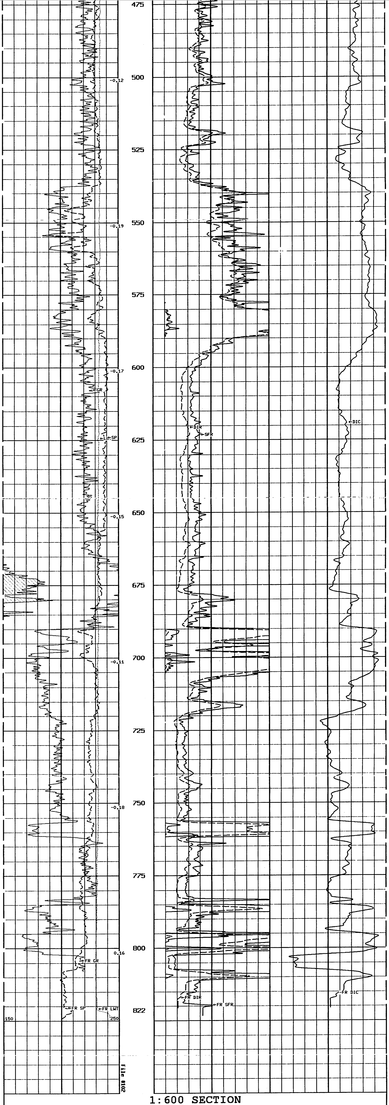
DEEP INDUCTION
OHMM
0.0 200.0
0.0 20.0

MSC CORR meters

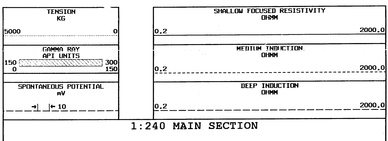
DEEP CONDUCTIVITY
OHMM
2000 1000
1000 0

1:600 SECTION

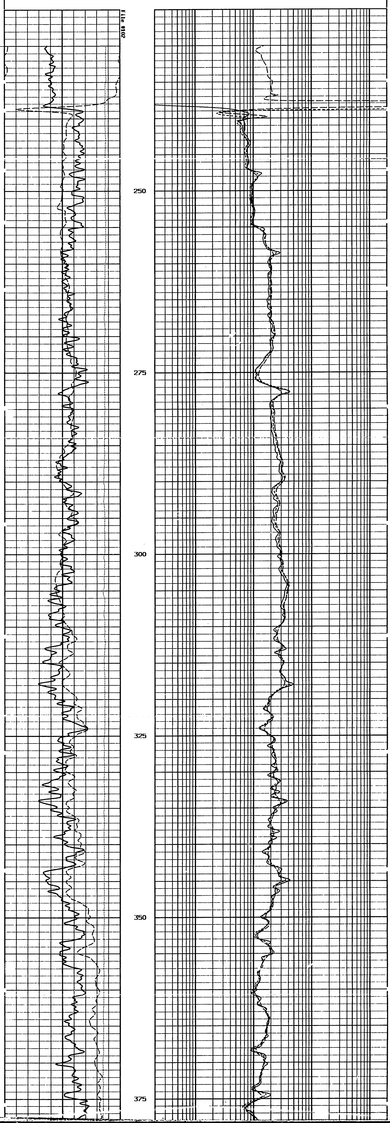


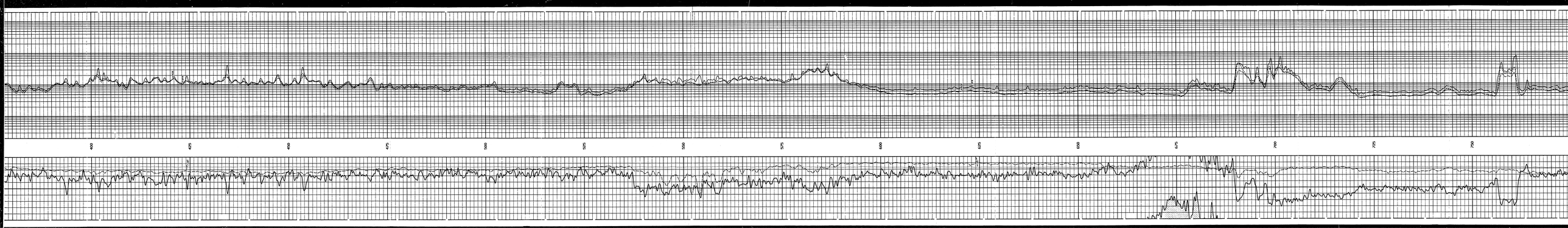


1:600 SECTION



1:240 MAIN SECTION

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625
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675
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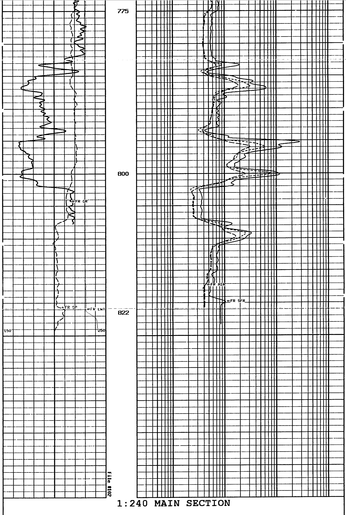
725
750

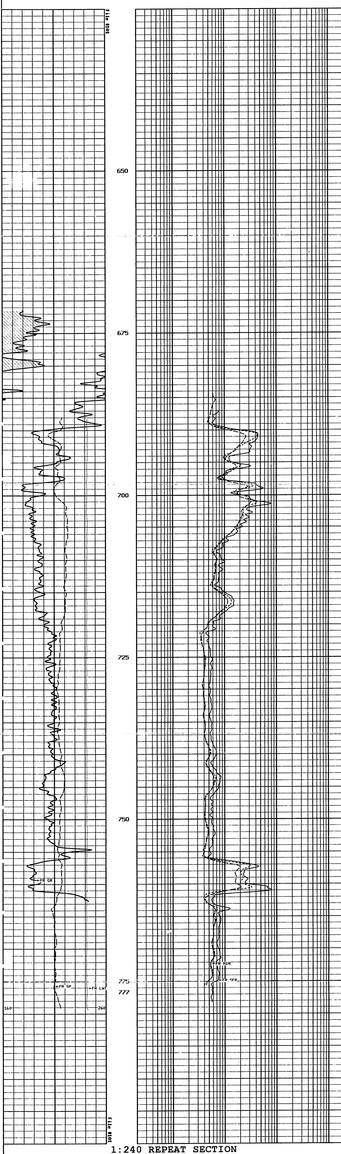


1:240 MAIN SECTION

SPONTANEOUS POTENTIAL mV (→ | ← 10)	BEEP INDUCTION OHMM 0.2 – 2000.0
GAMMA RAY API UNITS 150 – 300, 0 – 150	MEDIUM INDUCTION OHMM 0.2 – 2000.0
TENSION KG 5000 – 0	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 – 2000.0

TENSION KG 5000 – 0	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 – 2000.0
GAMMA RAY API UNITS 150 – 300, 0 – 150	MEDIUM INDUCTION OHMM 0.2 – 2000.0
SPONTANEOUS POTENTIAL mV (→ | ← 10)	BEEP INDUCTION OHMM 0.2 – 2000.0

1:240 REPEAT SECTION



1:240 REPEAT SECTION

SPONTANEOUS POTENTIAL mV (→ | ← 10)	BEEP INDUCTION OHMM 0.2 – 2000.0
GAMMA RAY API UNITS 150 – 300, 0 – 150	MEDIUM INDUCTION OHMM 0.2 – 2000.0
TENSION KG 5000 – 0	SHALLOW FOCUSED RESISTIVITY OHMM 0.2 – 2000.0

* Calibration Summary *

Shop Calibration
GRTB

Performed : 03-MAR-2003 Time : 00:24
Sensor Suite : GR-GRS ID : GRT-BB-001

	Measured	Units	Calibrated	Units
Background	Jig		Jig	
GR	70	CPS	170	GRAPI

Before Survey Verification
GRTB

Performed : 15-Mar-2003 Time : 15:55
Sensor Suite : GR-GRS ID : GRT-BB-001

	Shop	Before	Units
	Jig	Jig	
GR	170	187	GRAPI

After Survey Verification
GRTB

Performed : 15-Mar-2003 Time : 18:06
Sensor Suite : GR-GRS ID : GRT-BB-001

	Before	After	Units
	Jig	Jig	
GR	187	184	GRAPI

Shop Calibration
PIT

Performed : 10-MAR-2003 Time : 03:28
Sensor Suite : P-IND-T ID : PIT-AB-017

Medium

	Measured R	Measured X	Calibrated R	Calibrated X	Units
Air	130838	130655	0.0	-0.1	MMHOS
Zero	131066	131072	0.0	0.0	MMHOS
Reference	267803	266475	5000.0	5000.0	MMHOS
Loop	150285	172433	2641.3	979.7	MMHOS
Sonde Error			1.1	2.0	MMHOS
Cond			5000.0	5000.0	MMHOS

Deep

	Measured R	Measured X	Calibrated R	Calibrated X	Units
Air	129634	131780	0.0	-0.3	MMHOS
Zero	131077	131972	0.0	0.0	MMHOS
Reference	233806	233433	2000.0	2000.0	MMHOS
Loop	148818	175710	1251.3	465.1	MMHOS
Sonde Error			1.1	2.4	MMHOS
Cond			2000.0	2000.0	MMHOS

Temperature

Measured Low	Measured High	Calibrated Low	Calibrated High	Units
16980.0	56920.0	70.0	350.0	DEGF

Performed : 10-MAR-2003 Time : 03:29
Sensor Suite : SFL ID : PIT-AB-017

Internal

	Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
Im	32765.0	32765.0	0.0	1000.0	uA
Is	24122.0	56093.1	0.0	1720.0	mA
MOMI	32765.9	57825.6	0.0	179.0	mV
Equivalent SFL				41.97	OHMM

Performed : 10-MAR-2003 Time : 10:42
Sensor Suite : P-IND-T ID : PIT-AB-017

Internal

Measured Zero	Measured Reference	Calibrated Zero	Calibrated Reference	Units
32783.5	58935.7	0.0	1000.0	mV

Before Survey Verification
PIT

Performed : 15-Mar-2003 Time : 15:50
Sensor Suite : P-IND-T ID : PIT-AB-017

Medium — Internal

	Shop Measured	Shop Calibrated	Pre Verification Measured	Pre Verification Calibrated	Units
R Zero	131066	0.0	131067	0.0	MMHOS
X Zero	131072	0.0	131073	0.0	MMHOS
R Ref	247803	5000.0	246962	5000.0	MMHOS
X Ref	246478	5000.0	246930	5000.0	MMHOS

Deep — Internal

	Shop Measured	Shop Calibrated	Pre Verification Measured	Pre Verification Calibrated	Units
R Zero	131077	0.0	131088	0.0	MMHOS
X Zero	131072	0.0	131072	0.0	MMHOS
R Ref	233806	2000.0	233050	2000.0	MMHOS
X Ref	233433	2000.0	233835	2000.0	MMHOS

Performed : 15-Mar-2003 Time : 15:50
Sensor Suite : SFL ID : PIT-AB-017

Internal

	Shop Measured	Shop Calibrated	Pre Verification Measured	Pre Verification Calibrated	Units
Im Zero	32765.1	0.0	32773.4	0.0	uA
Im Ref	49715.3	7028.0	49688.1	7028.0	uA
Ib Zero	34512.8	0.0	34489.2	0.0	mA
Ib Ref	50005.1	1750.0	50739.6	1750.0	mA
MOM1 Zero	32765.9	0.0	32815.3	0.0	mV
MOM1 Ref	57825.6	175.0	57798.0	175.0	mV
Equivalent SFL		43.97		43.97	OHMM

Performed : 15-Mar-2003 Time : 15:50
Sensor Suite : P-SP ID : PIT-AB-017

Internal

	Shop Measured	Shop Calibrated	Pre Verification Measured	Pre Verification Calibrated	Units
Zero	32783.5	0.0	32787	0.1	mV
Reference	58935.7	1000.0	58940	1000.1	mV

After Survey Verification
PIT

Performed : 12-Mar-2003 Time : 09:37
Sensor Suite : P-IND-T ID : PIT-AB-017

Medium — Internal

	Pre Verification Measured	Pre Verification Calibrated	Post Verification Measured	Post Verification Calibrated	Units
R Zero	131067	0.0	131065	0.0	MMHOS
X Zero	131073	0.0	131071	0.0	MMHOS
R Ref	246962	5000.0	248235	5000.0	MMHOS
X Ref	246930	5000.0	246674	5000.0	MMHOS

Deep — Internal

	Pre Verification Measured	Pre Verification Calibrated	Post Verification Measured	Post Verification Calibrated	Units
R Zero	131088	0.0	131083	0.0	MMHOS
X Zero	131072	0.0	131072	0.0	MMHOS
R Ref	233050	2000.0	233311	2000.0	MMHOS
X Ref	233835	2000.0	233660	2000.0	MMHOS

Performed : 12-Mar-2003 Time : 09:37
Sensor Suite : SFL ID : PIT-AB-017

Internal

	Pre Verification Measured	Pre Verification Calibrated	Post Verification Measured	Post Verification Calibrated	Units
Im Zero	32773.4	0.0	32760.2	0.0	uA
Im Ref	49688.1	7028.0	49749.1	7028.0	uA
Ib Zero	34489.2	0.0	34517.4	0.0	mA
Ib Ref	50739.6	1750.0	50847.4	1750.0	mA
MOM1 Zero	32815.3	0.0	32765.5	0.0	mV
MOM1 Ref	57798.0	175.0	57872.5	175.0	mV
Equivalent SFL		43.97		43.97	OHMM

Performed : 12-Mar-2003 Time : 09:37
Sensor Suite : P-SP ID : PIT-AB-017

Internal

	Pre Verification Measured	Pre Verification Calibrated	Post Verifitcation Measured	Post Verifitcation Calibrated	Units
Zero	32786.6	0.1	32783	0.0	mV
Reference	58940.5	1000.1	58933	1000.0	mV

SONIC

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Tucker WIRELINE SERVICES

BOREHOLE COMPENSATED SONIC LOG

File No : GR-13801
Company : ANADARKO CANADA CORPORATION
Well : ANADARKO ARROWHEAD RIVER J-74
Field : ARROWHEAD RIVER
County :
Province : NWT
Country : Canada

Location : UNIQUE I.D.: 300J746040122450
LOCATION: J-74
LICENCE: 1987
Sect : Twp : Rge :

Recorded By : V. IGLESIAS
Witnessed By : E. LANGE

Date : MAR 15 2003
Run No. : 1

Permanent Datum : GL
Log Measured From : KB
Above Permanent Datum : 4.78 M

Depth--Driller : 824.0 M M
Depth--Logger : 821.0 M M
Bottom Log Interval : 808.0 M M
Top Log Interval : 0.0 M M

Casing Depth--Driller: 240.0 M
Casing Depth--Logger : 239.0 M
Casing Diameter : 219.100 MM

Bit Size : 118
Fluid Type : WATER
Location : GRANDE PRAIRIE

Elevations :
KB : 317.29 M
DF : M
GL : 312.51 M

Additional Services

CNT
LDT
PIT

The customer is hereby warned that by providing the log data herein, T. W. E. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. W. E. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, or any other log data provided, or opinion expressed or implied by T. W. E. in connection therewith. Any interpretation, conclusion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. W. E. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations so aforesaid.

Run Number 1

Depth To Fluid	1.0	M		
Fluid Type In Hole :	GEL CHEM			
Density :	1130.000			
Viscosity :	85.000			
pH :	10.000			
Fluid Loss :	6.000			
Salinity :	0.000			
RM Source :	FLOWLINE			
RM :	4.000	OHMM at	12	C
RM at BHT :	2.550	OHMM at	31	C
RMF Source :	PRESS			
RMF :	3.500	OHMM at	12	C
RMF at BHT :	2.200	OHMM at	31	C
RMC Source :	PRESS			
RMC :	5.000	OHMM at	12	C
RMC at BHT :	3.150	OHMM at	31	C
Max Recorded Temp. :			31	C
Time Circulation Stopped :	MAR 15 2003 @ 12:45			
Operating Rig Time, Hrs. :			3.0	

- Source Serial Numbers -

Gamma	16362W
Neutron	71-2A-931B

- Sonde Serial Numbers -

GRTB	GRT-BB-001
CNT	CNP-AA-110
LDT	LDP-CA-026
CST	CST-AB-007
PIT	PIT-AB-017

Casing Strings

Size (MM)	Weight (KG/CU)	Bottom (M)
219.100	35.70	139.00

- Comments -

1) ALL SCALES AND INTERVALS AT CLIENT'S REQUEST.
2) SFL IS ENVIRONMENTALLY CORRECTED.
3) CALIPERS VERIFIED IN CASING.
4) 38.1 mm CENTRALIZATION HARDWARE DEPLOYED ON PIT.
5) TWO BOWSPRING CENTRALIZERS DEPLOYED ON CST.
6) DISPLAYED BULK DENSITY INSTEAD OF DENSITY POROSITY AT CLIENT'S REQUEST.
7) RECORDED GR TO SURFACE. PRESENTED ON SONIC 1:600 SCALE.

RUN 1: GRT,CNT,LDT,CST,PIT

OPERATORS:
D. KULICKI
E. PINKNEY

RIG: AKITA #15

Tool String Schematic

Total Tool Length - 18.73 (M)
Maximum Outside diameter - 133.35 (mm)
Net Weight in Air - 440.44 (Kgs)

Tool: GRTB Length: 1.04 (M) O.D.: 91.44(mm)
Sonde ID : GRT-BB-001

Measure Point	Stack Offset	Tool Offset
GRP	0.61	0.61

Tool: CNT Length: 2.74 (M) O.D.:110.74(mm)
Sonde ID : CNP-AA-110
Source ID : 71-2A-931B
Pad ID : CNP-AA-110

Measure Point	Stack Offset	Tool Offset
CLEN	2.87	1.83
PHIN	3.12	2.08

Tool: LDT Length: 2.74 (M) O.D.:133.35(mm)
Sonde ID : LDP-CA-026
Source ID : 16362W
Pad ID : LDP-CA-026

Measure Point	Stack Offset	Tool Offset
CLLD	5.61	1.83
PEL	5.99	2.21
PES	5.99	2.21
LDEN	5.99	2.21
LCOR	5.99	2.21

Tool: CST Length: 4.39 (M) O.D.: 91.44(mm)
Sonde ID : CST-AB-007

Measure Point	Stack Offset	Tool Offset
TT1	7.99	1.46
TT3	8.29	1.77
CDT	8.75	2.23
TT4	9.20	2.68
TT2	9.51	2.99

Tool: PIT Length: 6.49 (M) O.D.: 92.07(mm)
Sonde ID : PIT-AB-017

Measure Point	Stack Offset	Tool Offset
ILD	13.63	2.72
ILM	13.99	3.08
SFLU	16.24	5.33
SP	17.19	6.28

TENSION KG
5000 — 0

BIT SIZE MILLIMETERS (mm)
125 — 375

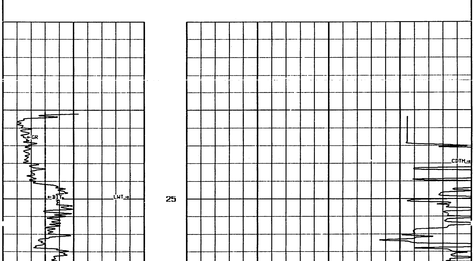
DENSITY (X) CALIPER MILLIMETERS (mm)
375 — 625
125 — 375

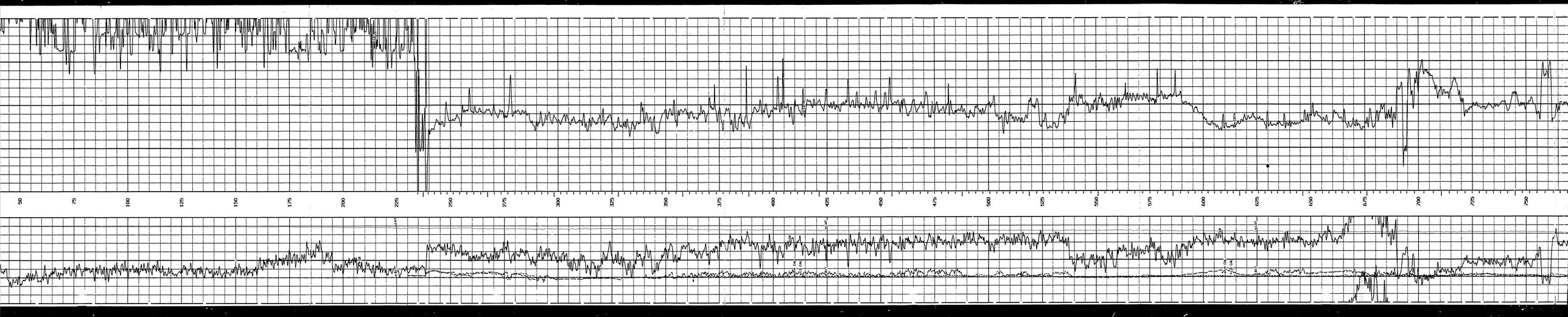
NEUTRON (Y) CALIPER MILLIMETERS (mm)
375 — 625
125 — 375

GAMMA RAY API UNITS
150 — 300
0 — 150

COMPENSATED SONIC TRAVEL TIME uSEC/M
900 — 500
500 — 100

1:600 SECTION




50
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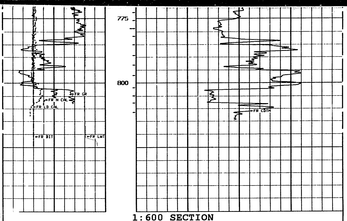
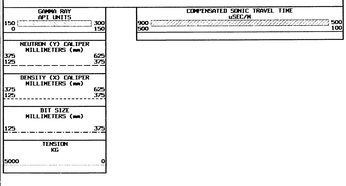
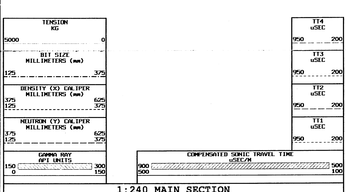
675
700
725
750

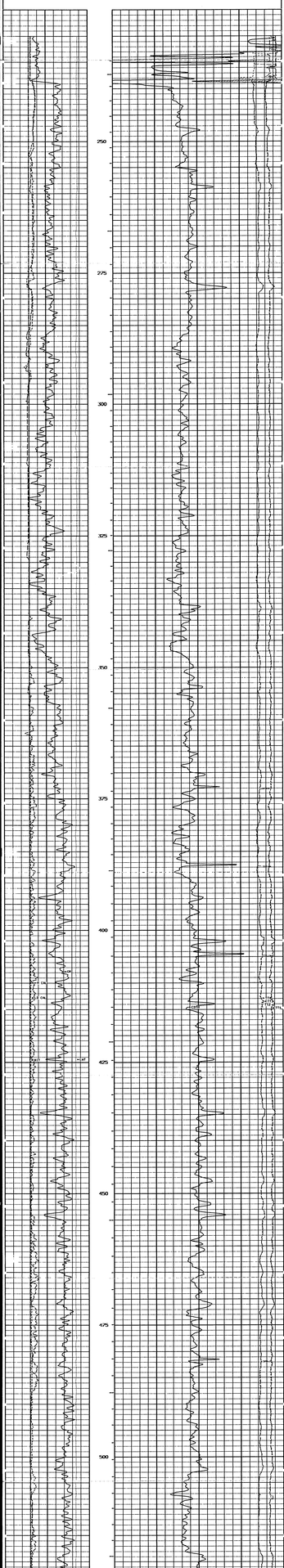


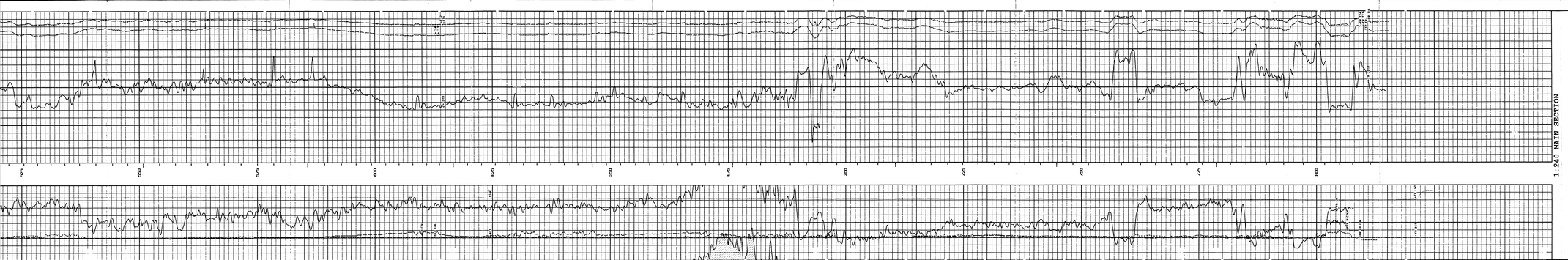
1:600 SECTION

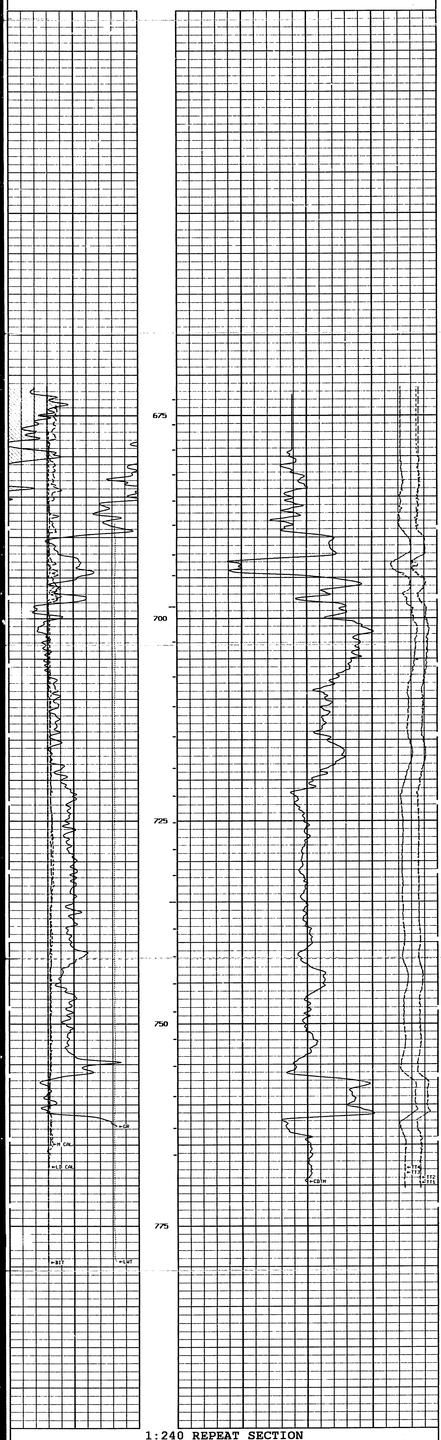




1:240 MAIN SECTION




1:240 MAIN SECTION
COMPENSATED SONIC TRAVEL TIME
500 900
T14 μSEC
950 2050
T13 μSEC
950 2050
T12 μSEC
950 2050
T11 μSEC
950 2050
COMPENSATED SONIC TRAVEL TIME
500 900
GAMMA RAY
0 150
BOREHOLE CAVITATION
MILLIMETRES (mm)
375 625
375 625
375 625
375 625
BIT SIZE
MILLIMETRES (mm)
375
TENSION
KG
0 5000
375 625
375 625
375 625
375 625
BIT SIZE
MILLIMETRES (mm)
375
TENSION
KG
0 5000
GAMMA RAY
0 150
500 900
COMPENSATED SONIC TRAVEL TIME
500 900
T14 μSEC
950 2050
T13 μSEC
950 2050
T12 μSEC
950 2050
T11 μSEC
950 2050
Drill Bit Size
200.000 mm
Zone 1 99999.0 to 0.0 M
Borehole Zone Factors
1:240 DOWNHOLE SECTION



1:240 REPEAT SECTION

GAMMA RAY API UNITS	COMPENSATED SONIC TRAVEL TIME uSEC/M	TT1 uSEC
150 0 300 150	900 500 500 100	950 200
NEUTRON (Y) CALIPER MILLIMETERS (mm)		TT2 uSEC
375 125 625 375		950 200
DENSITY (X) CALIPER MILLIMETERS (mm)		TT3 uSEC
375 125 625 375		950 200
BIT SIZE MILLIMETERS (mm)		TT4 uSEC
125 375		950 200
TENSION KG		
5000 0		

*** Borehole Zone Factors ***

Zone 1	99999.0	to	0.0	M
Drill Bit Size			200.000	MM

*** Borehole Zone Factors ***

Zone 1	99999.0	to	0.0	M
Drill Bit Size			200.000	MM

*** Calibration Summary ***

Shop Calibration
GRTB

Performed : 03-MAR-2003 Time : 00:24
Sensor Suite : GR-CPS ID : GRT-BB-001

	Measured Background	Jig	Units	Calibrated Jig	Units
GR	20	346	CPS	170	GRAPI

Shop Calibration
CNT

Performed : 30-JAN-2003 Time : 08:53
Sensor Suite : CALI-BCN ID : CNP-AA-110

	Jig - Measured Ring#1	Ring#2	Jig - Calibrated Ring#1	Ring#2	Units
CL # 1	7.9	13.9	6.0	12.0	IN.

Shop Calibration
CST

Performed : 12-MAR-2003 Time : 10:43
Sensor Suite : SON-AAA ID : CST-AB-007

Transit Time

T/R Pair	Measured	Calibrated	Units
T1R1	208.5	208.5	uS
T2R2	208.5	208.5	uS
T1R2	322.5	322.5	uS
T2R1	322.5	322.5	uS

Amplitude

T/R Pair	Measured	Calibrated	Units
T1R1	90.00	90.00	mV
T2R2	90.00	90.00	mV
T1R2	78.00	78.00	mV
T2R1	78.00	78.00	mV

DENSITY

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Tucker WIRELINE SERVICES

COMPENSATED NEUTRON-
PEL DENSITY LOG

File No. :	GP-13801	
Company :	ANADARKO CANADA CORPORATION	
Well :	ANADARKO ARROWHEAD RIVER J-74	
Field :	ARROWHEAD RIVER	
County :		
Province :	NWT	
Country :	Canada	

Location : UNIQUE I.D.: 300J746040122450
LOCATION: J-74
LICENCE: 1987
Sect : Twp : Rge :

Recorded By : V. VALERIAN
Witnessed By : E. LANGE

Date : MAR 15 2003
Run No. : 1

Permanent Datum :	GL	
Drilling Measured From :	KB	
Log Measured From:	KB	
Above Permanent Datum :	4.78	M
Depth--Driller :	824.0	M
Depth--Logger :	821.0	M
Bottom Log Interval :	809.5	M
Top Log Interval :	239.0	M
Casing Depth--Driller:	240.0	M
Casing Depth--Logger :	239.0	M
Casing Diameter :	219.100	MM
Bit Size :	200.000	MM
Unit No. :	118	
Location :	GRANDE PRAIRIE	

Elevations :
KB : 517.29 M
DF : M
GL : 512.51 M

Additional Services
CST
PIT

This report is based on data provided by the client. It is, to the best of our knowledge and interpretation, a true and correct representation of the well and formation conditions. Tucker Wireline Services assumes no responsibility for the use of this information by others, nor for any consequences resulting from its use.

Run Number 1

Depth To Fluid			
Fluid Type	H2O		
Density g/c	1.000		
Viscosity	1.000		
Fluid Loss			
Salinity	1.000		
Source	RMF	RMC	
RM @ MT	0.000		
RMF @ MT	0.000	CORR AK	12
RMC @ MT	0.000	CORR AK	12
RM @ BHT			
RMF @ BHT	RMFS	CORR AK	12
RMC @ BHT	2.190	CORR AK	12
	1.190	CORR AK	12
RMC Source :	RMFS		
RMF @ MT :	2.190	CORR AK	12
RMC @ MT :	1.190	CORR AK	12
Max Recorded Temp. :			
Estimated Surface Temp. :	MAR 15 2003 8:18:15		
Operating Rig Time, Hrs :			1.0

- Source Serial Numbers -

Density	13-SA-3118
Neutron	13-SA-3118

- Probe Serial Numbers -

CNDB	CDB-2-1015
CNDT	CDB-2-1015
DPT	DPT-2-1015
DTT	DTT-2-1015

Casing Strings

Size (OD)	Weight (LB/FT)	Bottom (M)
219.100	0.000	239.00

- Comments -

1) ALL SCALES AND INTERVALS AT CLIENT'S REQUEST.
2) TOOL STRING SCHEMATIC ATTACHED.
3) CALIPER VERIFIED IN SERVICE.
4) THE DENSITY CORRECTION WAS DONE ON SITE.
5) THE DENSITY CORRECTION WAS DONE ON SITE.
6) THE DENSITY CORRECTION WAS DONE ON SITE.
7) DENSITY CORRECTION WAS DONE ON SITE AT CLIENT'S REQUEST.
8) RECORDED ON TO DISPLAY, PRESENTED ON SONIC 1:600 SCALE.

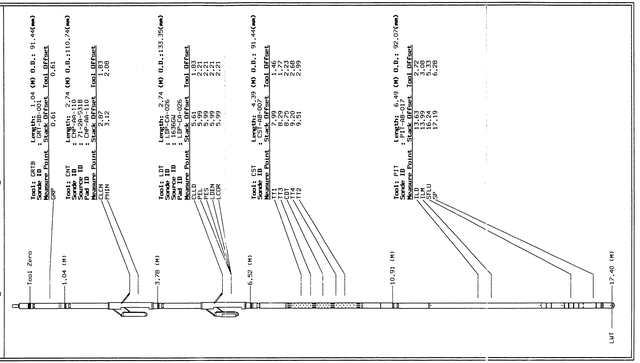
RUN 14: GEC,CNT,LDC,CDL,DTT

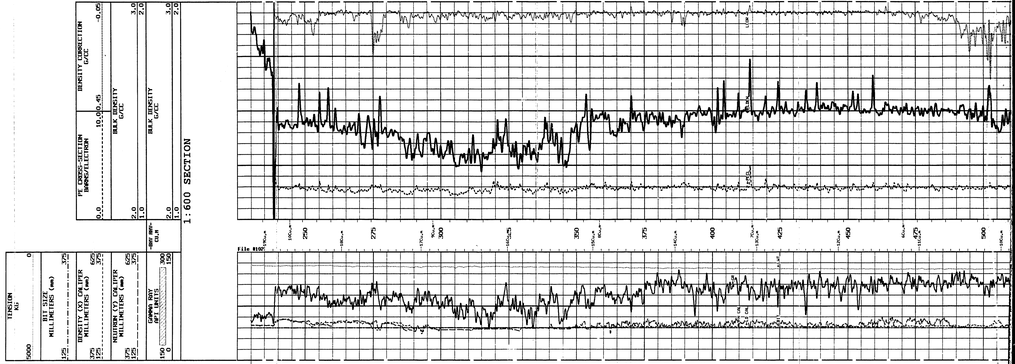
CNTA0204
CDBA0204
E. FUERER

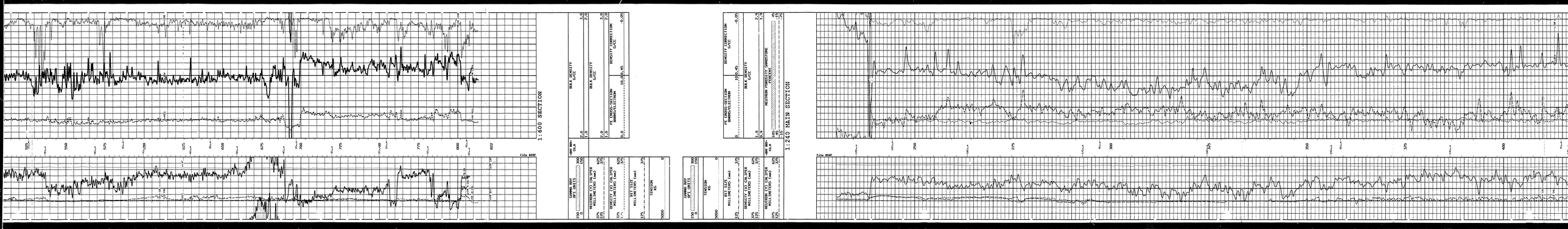
RUN WITH 415

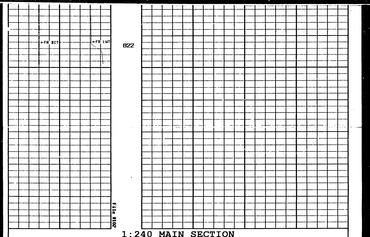
Tool String Schematic

Total Tool Length : 18.00 (m)
Max Logging Diameter : 133.35 (mm)
Max Logging Speed : 540.54 (m/hr)






1:600 SECTION
1:240 MAIN SECTION
BULK DENSITY G/CC
PE CROSS-SECTION BARNS/ELECTRON
DENSITY CORRECTION G/CC
MEDIUM POROSITY SANDSTONE
PERCENT
GAMMA RAY API UNITS
TENSION KG
BIT SIZE MILLIMETERS (mm)
DENSITY CALIPER MILLIMETERS (mm)
MEDIUM CALIPER MILLIMETERS (mm)
CAL BIT
CAL DIR
CAL MED
CAL DEN
CAL TOT
File 8592



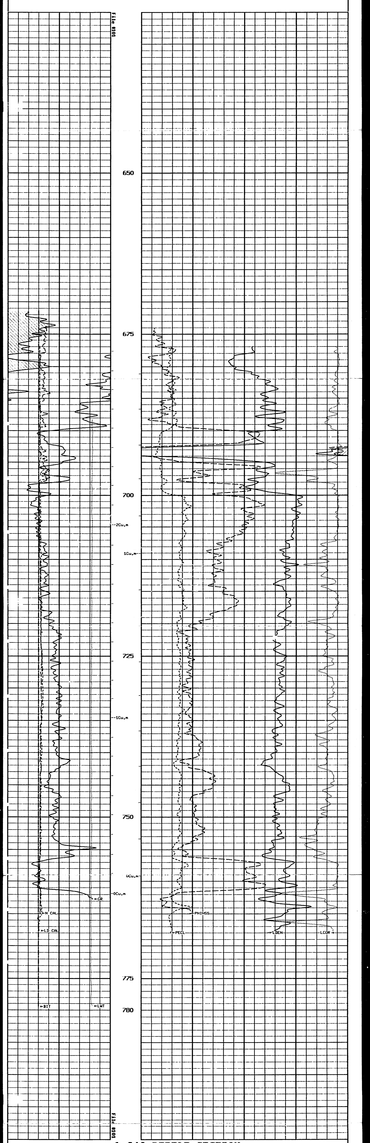
NEUTRON (Y) CALIPER MILLIMETERS (mm) 375 625 / 125 375	-BHV BHV- CU,H
	NEUTRON POROSITY SANDSTONE PERCENT 105 45 / 45 -15 / -15 -75
DENSITY (X) CALIPER MILLIMETERS (mm) 375 625 / 125 375	BULK DENSITY G/CC 1.9 2.9 / 0.9 1.9
BIT SIZE MILLIMETERS (mm) 125 375	PE CROSS-SECTION BARNS/ELECTRON 0 100 / 45
	DENSITY CORRECTION G/CC -0.05
TENSION KG 5000 0	
GAMMA RAY API UNITS 150 300 / 0 150	

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 M	
Fluid Density	1.00 G/C3
Drill Bit Size	200.000 MM
Casing Diameter	139.700 MM
Casing Thickness	0.250 MM
Casing Correction (PHI N)	Disable

GAMMA RAY API UNITS 150 300 / 0 150	
TENSION KG 5000 0	
BIT SIZE MILLIMETERS (mm) 125 375	PE CROSS-SECTION BARNS/ELECTRON 0 100 / 45
	DENSITY CORRECTION G/CC -0.05
DENSITY (X) CALIPER MILLIMETERS (mm) 375 625 / 125 375	BULK DENSITY G/CC 1.9 2.9 / 0.9 1.9
NEUTRON (Y) CALIPER MILLIMETERS (mm) 375 625 / 125 375	-BHV BHV- CU,H
	NEUTRON POROSITY SANDSTONE PERCENT 105 45 / 45 -15 / -15 -75

1:240 REPEAT SECTION



1:240 REPEAT SECTION

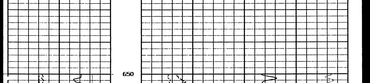
NEUTRON (Y) CALIPER MILLIMETERS (mm) 375 625 / 125 375	-BHV BHV- CU,H
	NEUTRON POROSITY SANDSTONE PERCENT 105 45 / 45 -15 / -15 -75
DENSITY (X) CALIPER MILLIMETERS (mm) 375 625 / 125 375	BULK DENSITY G/CC 1.9 2.9 / 0.9 1.9
BIT SIZE MILLIMETERS (mm) 125 375	PE CROSS-SECTION BARNS/ELECTRON 0 100 / 45
	DENSITY CORRECTION G/CC -0.05
TENSION KG 5000 0	
GAMMA RAY API UNITS 150 300 / 0 150	

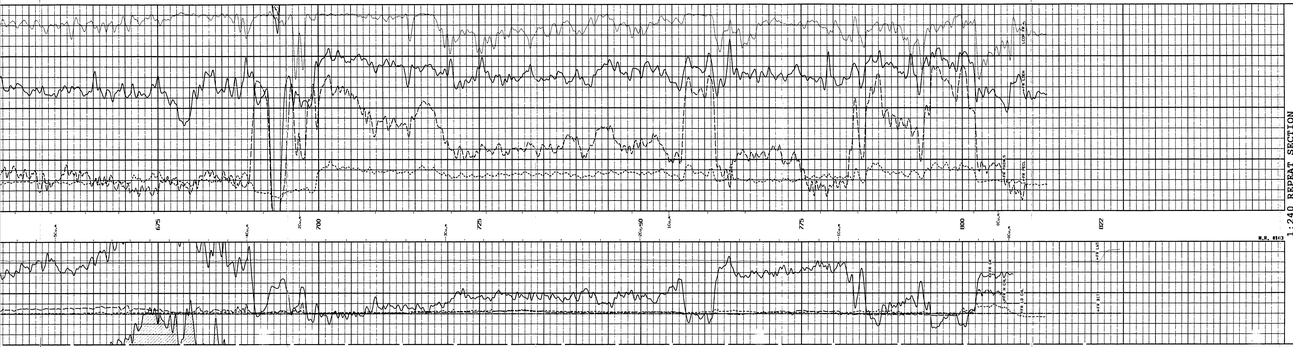
* Borehole Zone Factors *

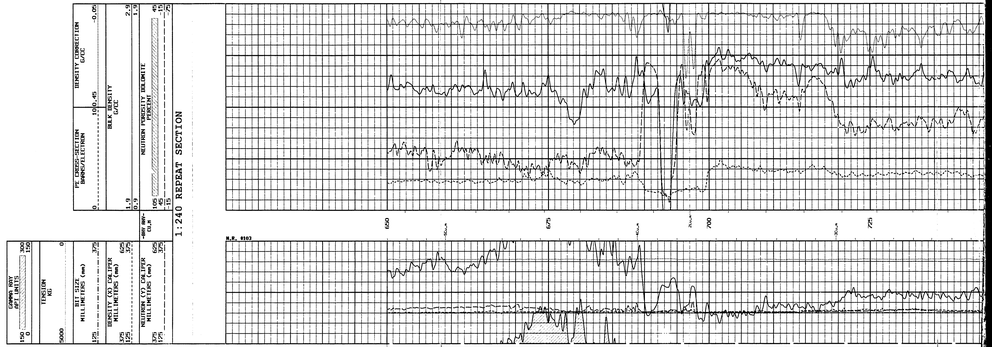
Zone 1 99999.0 to 0.0 M	
Fluid Density	1.00 G/C3
Drill Bit Size	200.000 MM
Casing Diameter	139.700 MM
Casing Thickness	0.250 MM
Casing Correction (PHI N)	Disable

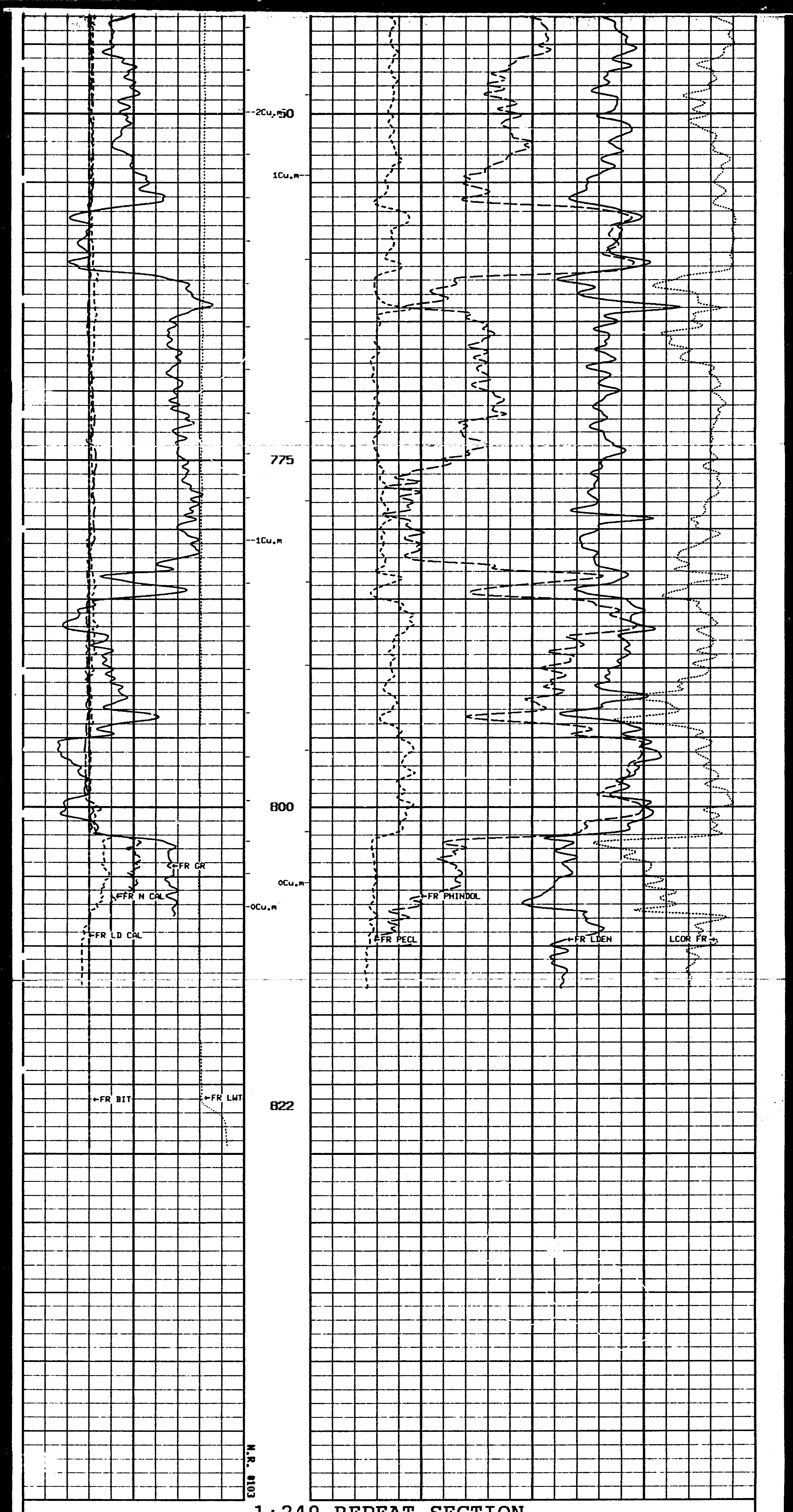
GAMMA RAY API UNITS 150 300 / 0 150	
TENSION KG 5000 0	
BIT SIZE MILLIMETERS (mm) 125 375	PE CROSS-SECTION BARNS/ELECTRON 0 100 / 45
	DENSITY CORRECTION G/CC -0.05
DENSITY (X) CALIPER MILLIMETERS (mm) 375 625 / 125 375	BULK DENSITY G/CC 1.9 2.9 / 0.9 1.9
NEUTRON (Y) CALIPER MILLIMETERS (mm) 375 625 / 125 375	-BHV BHV- CU,H
	NEUTRON POROSITY LIMESTONE PERCENT 105 45 / 45 -15 / -15 -75

1:240 REPEAT SECTION




1:240 REPEAT SECTION
NEUTRON POROSITY LIMESTONE
PYRITE
BULK DENSITY
GR
CALI
NEUTRON POROSITY
DENSITY CORRECTION
PE CROSS-SECTION
BARODENSITY
BULK DENSITY
GAMMA RAY
API UNITS
TENSION
KG
BIT SIZE
MILLIMETERS
DENSITY CALIPER
MILLIMETERS
NEUTRON CALIPER
MILLIMETERS
Zone 1 - Approx.O.D. 0.0 m
Fluid Density
Drill Bit Size
Casing Weight
Casing Thickness
Casing Diameter
Borehole Zone Factors
1.00 G/C3
295.000 MM
0.000 KG
17.000 MM
0.000 MM


1:240 REPEAT SECTION
NEUTRON POROSITY LIMESTONE
BULK DENSITY
DENSITY CORRECTION
PE CROSS-SECTION
BARODENSITY
BULK DENSITY
NEUTRON POROSITY DOLOMITE
GAMMA RAY
API UNITS
TENSION
KG
BIT SIZE
MILLIMETERS
DENSITY CALIPER
MILLIMETERS
NEUTRON CALIPER
MILLIMETERS



1:240 REPEAT SECTION

NEUTRON (Y) CALIPER MILLIMETERS (mm)	-BHV AHV- CU.M	NEUTRON POROSITY DOLOMITE PERCENT
375 — 625		105 — 45
125 — 375		45 — -15
		-15 — -75

DENSITY (X) CALIPER MILLIMETERS (mm)	BULK DENSITY G/CC
375 — 625	1.9 — 2.9
125 — 375	0.9 — 1.9

BIT SIZE MILLIMETERS (mm)	PE CROSS-SECTION BARNS/ELECTRON	DENSITY CORRECTION G/CC
125 — 375	0 — 10	0.45 — -0.05

TENSION KG
5000 — 0

GAMMA RAY API UNITS
150 — 300
0 — 150

* Borehole Zone Factors *

Zone 1   99999.0 to 0.0 M

Fluid Density	1.00	G/C3
Drill Bit Size	200.000	MM
Casing Diameter	139.700	MM
Casing Thickness	0.250	MM
Casing Correction (PHI N)	Disable	

* Borehole Zone Factors *

Zone 1   99999.0 to 0.0 M

Fluid Density	1.00	G/C3
Drill Bit Size	200.000	MM
Casing Diameter	139.700	MM
Casing Thickness	0.250	MM
Casing Correction (PHI N)	Disable	

* Calibration Summary *

Shop Calibration
GRTB

Performed : 03-MAR-2003   Time : 00:24
Sensor Suite : GR-GR5   ID : GRT-BB-001

	Background	Measured Jig	Units	Calibrated Jig	Units
GR	70	346	CPS	170	GRAPI

Before Survey Verification
GRTB

Performed : 15-Mar-2003   Time : 15:55
Sensor Suite : GR-GR5   ID : GRT-BB-001

	Shop Jig	Before Jig	Units
GR	170	187	GRAPI

After Survey Verification
GRTB

Performed : 15-Mar-2003   Time : 18:06
Sensor Suite : GR-GR5   ID : GRT-BB-001

	Before Jig	After Jig	Units
GR	187	184	GRAPI

Shop Calibration
CNT

Performed : 03-MAR-2003   Time : 00:13
Sensor Suite : BHC NEUT   ID : CNP-AA-110
Source ID : 71-2A-931B

	Tank Measured	Tank Calibrated	Verification Jig	Units
N/F	3.9188	4.0052	3.9604	
Porosity	24.1	25.6	24.9	%

Performed : 30-JAN-2003   Time : 08:53
Sensor Suite : CALI-BCN   ID : CNP-AA-110

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	7.9	13.9	6.0	12.0	IN.

Before Survey Verification
CNT

Performed : 15-Mar-2003   Time : 16:00
Sensor Suite : BHC NEUT   ID : CNP-AA-110
Source ID : 71-2A-931B

	Shop Jig	Before Jig	Units
N/F	3.9604	4.1668	
Porosity	24.9	28.5	%

After Survey Verification
CNT

Performed : 15-Mar-2003   Time : 18:09
Sensor Suite : BHC NEUT   ID : CNP-AA-110
Source ID : 71-2A-931B

	Before Jig	After Jig	Units
N/F	4.1668	4.1164	
Porosity	28.5	27.6	%

Shop Calibration
LDT

Performed : 13-Feb-2003   Time : 09:47
Sensor Suite : BHC PEB   ID : LDP-CA-026
Source ID : 1636GW

Short Space

	BKGD	Al	Mg	Al+Fe	Units
LSW1	59	1728	3198	1032	CPS
LSW2	111	2883	5143	2054	CPS
LSW3	257	5022	8894	4306	CPS
LSW4	325	3062	4837	2744	CPS
LSW5	28	60	87	54	CPS
LSW6	67	70	69	70	CPS
LSW7	67	70	71	70	CPS
LSW8	4	9	13	8	CPS
QS	0.000	0.000	-0.014	0.000	
PES			2.500	6.000	
SSDN		2.597	1.679		G/CC

Long Space

	BKGD	Al	Mg	Al+Fe	Units
LLW1	69	671	3476	382	CPS
LLW2	124	1239	5704	881	CPS
LLW3	305	1955	7995	1709	CPS
LLW4	380	894	2713	840	CPS
LLW5	36	39	58	38	CPS
LLW6	76	77	75	75	CPS
LLW7	78	76	76	78	CPS
LLW8	7	7	12	7	CPS
QL	-0.013	0.007	-0.007	-0.020	
PEL			2.250	6.000	
LSDN		2.597	1.679		G/CC

Performed : 18-NOV-2002   Time : 13:12
Sensor Suite : CALI-PEB   ID : LDP-CA-026

	Jig - Measured Ring#1	Jig - Measured Ring#2	Jig - Calibrated Ring#1	Jig - Calibrated Ring#2	Units
CL # 1	4.7	10.7	6.0	12.0	IN.

Before Survey Verification
LDT

Performed : 15-Mar-2003   Time : 15:56
Sensor Suite : BHC PEB   ID : LDP-CA-026
Source ID : 1636GW

Short Space	Background	Before	Long Space	Background	Before	Units
LSW1	59	57	LLW1	69	69	CPS
LSW2	111	108	LLW2	124	125	CPS
LSW3	257	254	LLW3	305	303	CPS
LSW4	325	322	LLW4	380	378	CPS
LSW5	28	29	LLW5	36	35	CPS
LSW6	67	61	LLW6	76	71	CPS
LSW7	67	69	LLW7	78	82	CPS
LSW8	4	6	LLW8	7	8	CPS
QS	0.000	-0.065	QL	-0.013	-0.068	

After Survey Verification
LDT

Performed : 15-Mar-2003   Time : 18:07
Sensor Suite : BHC PEB   ID : LDP-CA-026
Source ID : 1636GW

Short Space	Before	After	Long Space	Before	After	Units
LSW1	57	59	LLW1	69	72	CPS
LSW2	108	110	LLW2	125	126	CPS
LSW3	254	256	LLW3	303	303	CPS
LSW4	322	322	LLW4	378	381	CPS
LSW5	29	28	LLW5	35	36	CPS
LSW6	61	63	LLW6	71	76	CPS
LSW7	69	66	LLW7	82	79	CPS
LSW8	6	5	LLW8	8	7	CPS
QS	-0.065	-0.022	QL	-0.068	-0.017	

MISCELLANEOUS

IPS

Completion Record

Perforation

FILING #		
LSD.-	Company	Anadarko Canada Energy
SEC.-	Well	Anadarko SW Arrowhead J-74
TWP.-	Field	Arrowhead
RGE.-	Province	Northwest Territories
W.	Location J-74	OTHER SERVICES
	LSD. SEC. TWP.	
	RGE. W.	

Permanent Datum Ground Level	Elevation 512.51	K.B. 517.29
Log Measured From Kelly Bushing	4.78m Above Perm. Datum	G.L. 512.51

Date	20-March-2003	Type Fluid	Fresh H20
Run Number	One	Fluid Level	450.0
Type Log	Collar	Wellhead Pressure	0 KPA
Depth - Driller (OH)	824.0	Max. Temp. °C	
Depth - Driller (CH)	824.0	Oper. Rig Time	1.0hrs
P.B.T.D. By Logger	Not Tagged	Recorded By	D.Adams
Bottom Log Interval	710.0	Witnessed By	J. Graves
Logged Interval		Apparent Cement Top	Surface
Top Log Interval	655.0	Hoist Unit# / Loc.	#154 FSJ
Zone(s) of Interest	Chinkeh	Program	CSS V2.3
Gun Type and Size	ERHSC 101.6 mm	Ticket #	E0857
Gun Charges	32 GR DP		

CASING RECORD	SIZE	Kg/m	GRADE	TYPE JOINT	FROM	TO
Surface	219.1mm	35.7	J55		Surface	240.0
Intermediate	139.7mm	20.8	J55		Surface	824.0

NOTES

In making interpretations of Logs, our employees will give our customer the benefit of their best judgement. But since all interpretations are opinions based on the inferences from electrical or other measurements, we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost damages or expenses whatsoever, incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Logged as per customer request.

Log corrlated to Gamma Ray Cement Bond Log, Dated 19-March-2003

IPS

Gamma Ray

Cement Bond Log

FILING #		
LSD.-	Company	Anadarko Canada Energy
SEC.-	Well	Anadarko SW Arrowhead J-74
TWP.-	Field	Arrowhead
RGE.-	Province	Northwest Territories
W.	Location J-74	OTHER SERVICES G. Ring
	LSD. SEC. TWP.	
	RGE. W.	

Permanent Datum Ground Level	Elevation 512.51	K.B. 517.0
Log Measured From Kelly Bushing	4.79m Above Perm. Datum	G.L. 512.51

Date	19-March-2003	Type Fluid	Fresh H20
Run Number	One	Fluid Level	10.0
Type Log	GR/CCL/CBL/VDL	Wellhead Pressure	Nill
Depth - Driller (OH)	824.0	Max. Temp. °C	
Depth - Driller (CH)	824.0	Oper. Rig Time	2.0hrs
P.B.T.D. By Logger	797.5	Recorded By	K. Dennis
Bottom Log Interval	797.5	Witnessed By	J. Graves
Logged Interval	572.0	Apparent Cement Top	Surface
Top Log Interval	225.0	Hoist Unit# / Loc.	#154 FSJ
Zone(s) of Interest	Chinkeh	Program	CSS V2.3
Gun Type and Size		Ticket #	E0856
Gun Charges			

CASING RECORD	SIZE	Kg/m	GRADE	TYPE JOINT	FROM	TO
Surface	219.1mm	35.7	J55		Surface	240.0
Intermediate	139.7mm	20.8	J55		Surface	824.0

In making interpretations of Logs, our employees will give our customer the benefit of their best judgement. But since all interpretations are opinions based on the inferences from electrical or other measurements , we cannot, and we do not guarantee the accuracy or correctness of any interpretation. We shall not be liable or responsible for any loss, cost damages or expenses whatsoever, incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Stopped as per customer request.
Log correlated to Tucker Borehole Compensated Sonic Log, dated 15-March-2003.

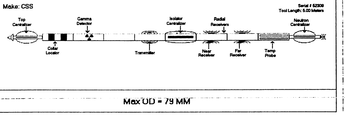
Ran a 119.1mm gauge ring to 797.5

Surface Casing: 219.1mm, 35.7kg/m, J-55. Cemented w/ 20.4T Class 'G' +3% CaCl2. 1m3 Cement Returns.

Production Casing: 139.7mm, 20.8kg/m, J-55. Cemented w/ 17.1m3 Thixmix II + 3% CFL-3 + 1% CaCl2. 1m3 Cement Returns.

DSCBL-RADIAL-CCL-GR-N-TEMP

Make: CSS



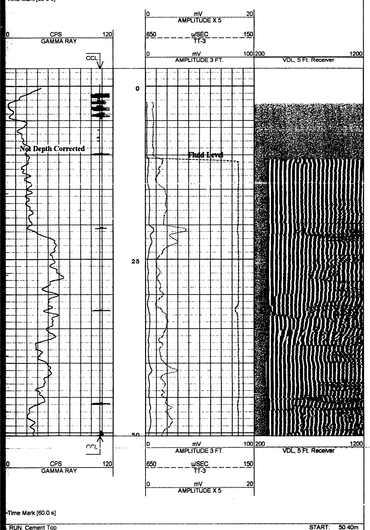
Max OD = 79 MM

RUN: Cement Top
DIR : UP
DATE: 03/15/03
TIME: 10:06:09

Cement Top

START: 50.40m
STOP: -2.00m
RES: 0.05 m
SCALE: 240.1 m

-Time Mark [50.0 s]



RUN: Cement Top
DIR : UP
DATE: 03/15/03
TIME: 10:06:09

Cement Top

START: 50.40m
STOP: -2.00m
RES: 0.05 m
SCALE: 240.1 m

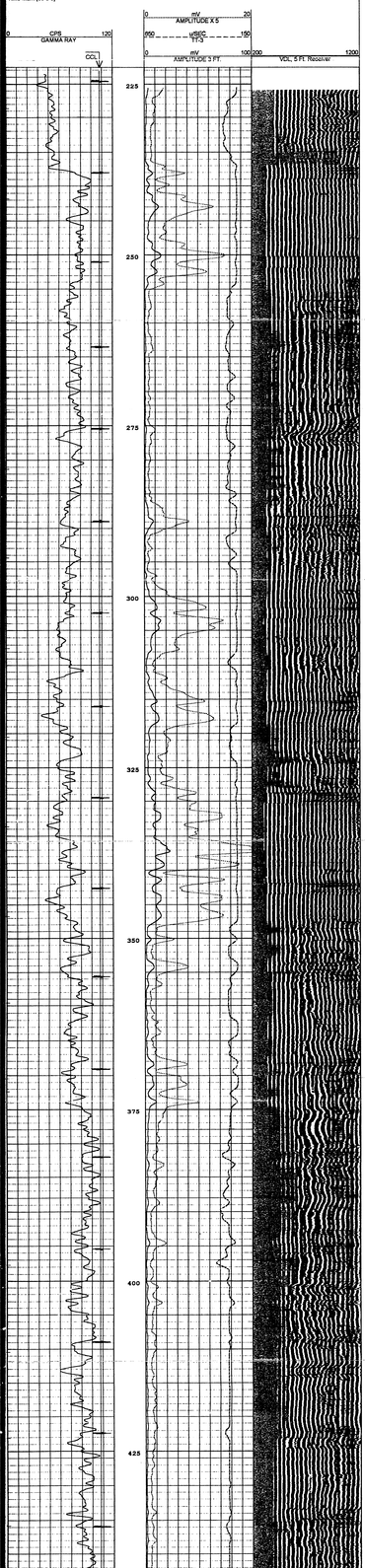
-Time Mark [50.0 s]

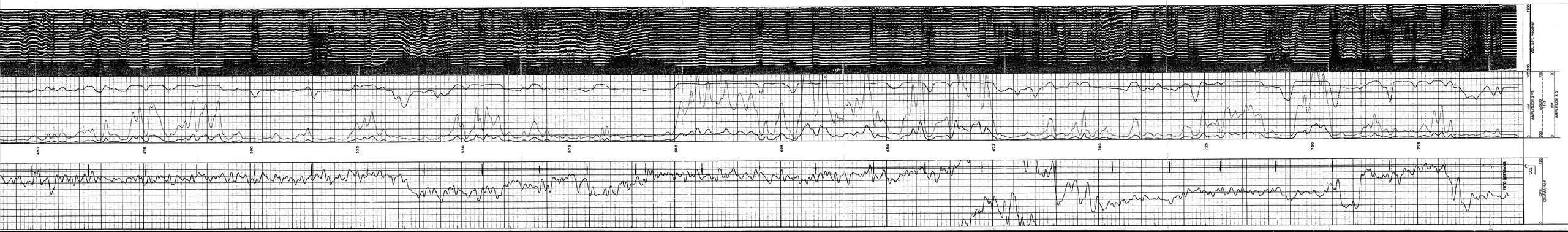
RUN: Main Pass
DIR : UP
DATE: 03/15/03
TIME: 10:06:09

Main Pass 0mpa

START: 800.00m
STOP: 224.90m
RES: 0.05 m
SCALE: 240.1 m

-Time Mark [50.0 s]





Fine Mark (CH 3-4)

RUN: Main Pass
DIR.: UP
DATE: 03/19/03
TIME: 10:06:09

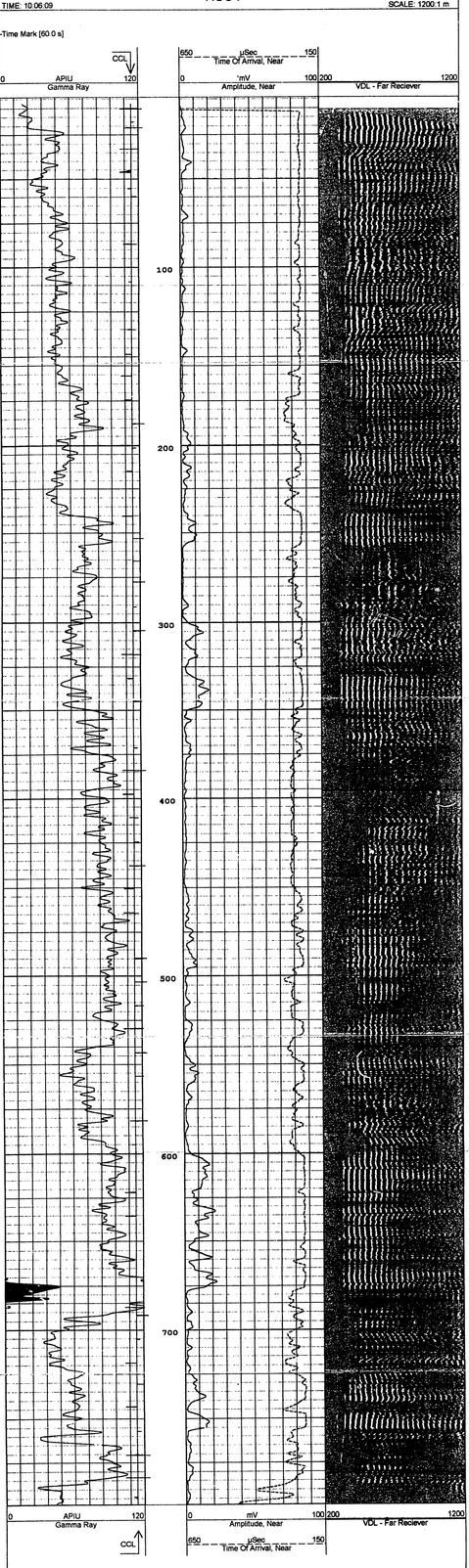
Main Pass 0mpa

START: 800.00m
STOP: 224.90m
RES.: 0.05 m
SCALE: 240:1 m

RUN: HSOV
DIR.: DOWN
DATE: 03/19/03
TIME: 10:06:09

HSOV

START: 798.40m
STOP: 7.70m
RES.: 0.1 m
SCALE: 1200:1 m



RUN: HSOV
DIR.: DOWN
DATE: 03/19/03
TIME: 10:06:09

HSOV

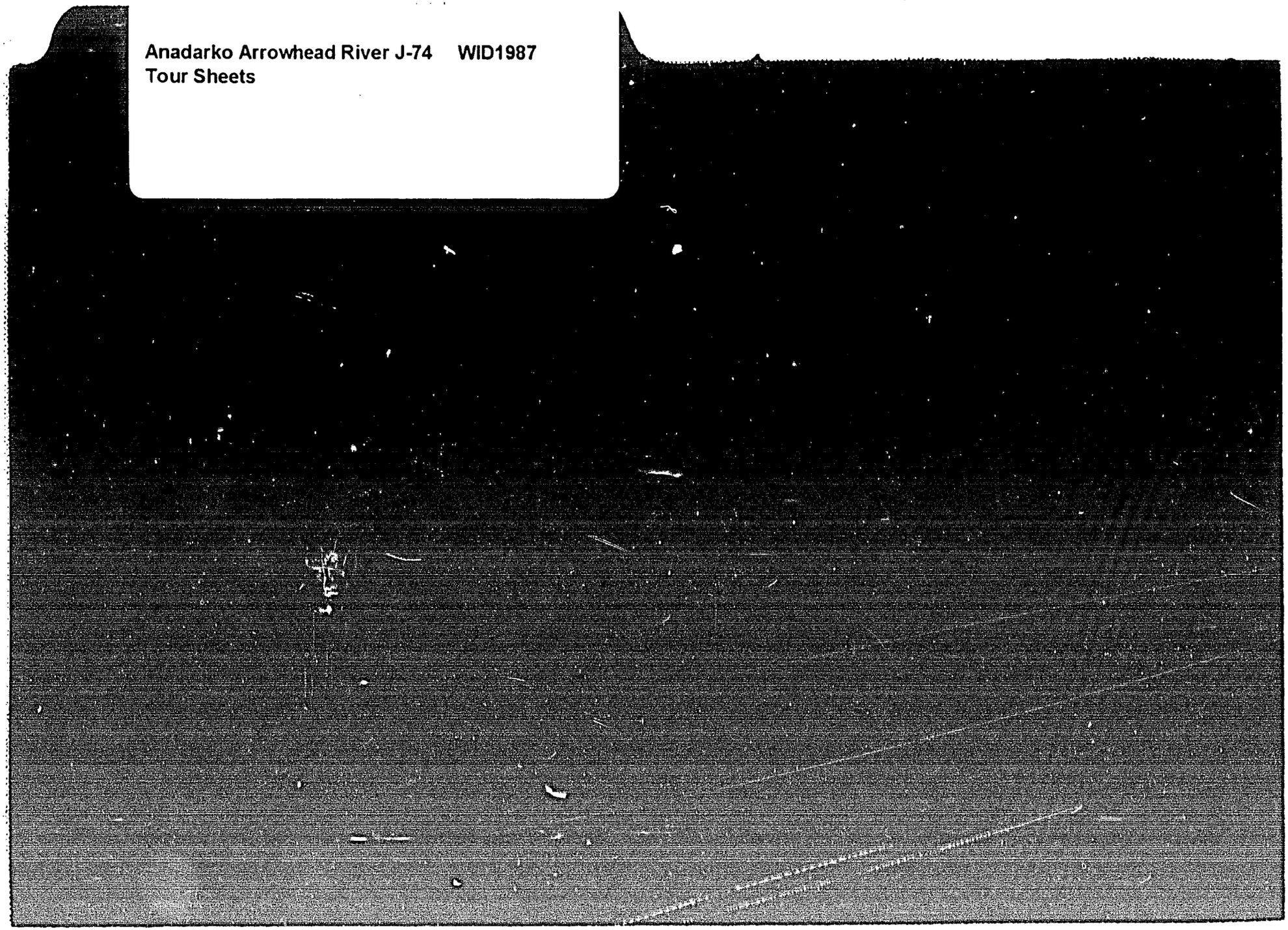
START: 798.40m
STOP: 7.70m
RES.: 0.1 m
SCALE: 1200:1 m

IPS

Company: Anadarko Canada Energy
Well: Anadarko SN Arrowhead J-74
Field: Arrowhead
Province: Northwest Territories

TOUR SHEETS

Anadarko Arrowhead River J-74 WID1987
Tour Sheets



ANADARKO ARROWHEAD RIVER J-74 — Daily Drilling Report (CAODC)

LICENCE NO.: 1987
WELL NAME & NO.: ANADARKO ARROWHEAD RIVER J-74
OPERATOR: A[illegible]KO CANADA ENERGY
CONTRACTOR: AKITA DRILLING LTD.
SURFAC[illegible]: LA 60:33:35:4N/LO 123:58:53:1W
UNIQUE ID: 300J7404G122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE: BARRY GOODRICH
SIGNATURE OF CONTRACTOR'S RIG MANAGER: LEN SAWCHUK

DAILY CHECKS
(1) Daily Walk Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Stick Diagram Posted
(5) [illegible]
(6) BOP Drills Performed
(7) Visually Inspect BOP's- Flare Lines & Degasser Lines
(1) Rig Site Health & Safety Meeting (one/crew/month)
(2) CAODC Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills Checked

YEAR 2003 | MONTH 3 | DAY 16 | RIG NO 15
KB: 5400 | BOILER: 0
TEMPERATURE: -14
CURRENT CONDITIONS: CLEAR
WIND DIRECTION: CALM
ROAD CONDITION: SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)
219.1	202.5	35.70	ST&C	K55	20	240.60		240.00
139.7	127.3	20.80	ST&C	J-55	64	825.69	4.80	824.00

DC/DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT. O.D.	TYPE THREAD	NO. of JOINTS
102	20.83	E	61	126	4 FH	90
102	41.64	HWDP	61	126	4 FH	20
152	122.91	DC	52	152	4.5 XH	16

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
F-650	EMSCO	203
F-650	EMSCO	203

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP BOP	TEST BOP	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MEETING	TOTALS
MORN						3.75	0.25					3.75									0.25	8.00
DAY	3.00				2.25							1.25		1.25							0.25	8.00
EVE	8.00																					8.00
TOTAL	11.00				2.25	3.75	0.25					5.00		1.25							0.50	24.00

SHALE SHAKER: NO. 1 TYPE CAGLE; NO. 2 TYPE
SCREENS CHANGED: [ ] YES [ ] NO
TOP: 110 / 84
MIDDLE: 110 / 84
BOTTOM: 110 / 84

DRILLING CREW PAYROLL DATA

WELL NAME & NO.: ANADARKO ARROWHEAD RIVER J-74 | YEAR 2003 | MONTH 3 | DAY 16
OPERATOR: ANADARKO CANADA ENERGY | CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK | RIG NO. 15
PROVINCE: N.W.T. | CAMP: [X] YES [ ] NO | RIG SAFETY DAYS: 821

MORNING TOUR (0 – 800)

Drilling Assembly

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D C	156	74.75
1	JAR	165	5.07
4	D C	156	36.24
1	X.O.	156	0.91
6	H W D P.	130	55.61
33	D.P. STANDS		
1	D.P. SINGLES		638.96
	KELLY DOWN		11.17
	TOTAL		824.00
	WT. OF D.C.	17	
	WT. OF STRING	30	

Bit Record

BIT NO	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO.	MK4350
JETS	11.1 / 11.1 / 11.1
DEPTH OUT	824.00
DEPTH IN	702.00
TOTAL M DRILLED	122.00
TOTAL HRS RUN	17.00

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (M)

Mud Record

MUD TYPE: [ ] WATER BASED [ ] OIL BASED
TIME / DENSITY (KG/M3) / FUNNEL VISCOSITY / FLUID LOSS (cm3) / pH

MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT

SOLIDS CONTROL: DESILTER / CENTRIFUGE — HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

Metres Drilled

FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa | PUMP NO. 1 LINER SIZE 152.0 | SPM | PUMP NO. 2 LINER SIZE 152.0 | SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: LINUS BOIRE

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	345	3.75	6	LAY DOWN PIPE
345	400	0.25	7	RIG SERVICE FUNCTION BLIND RAMS C/O 3 SECS
400	415	0.25	21	SAFETY MTG.
415	800	3.75	12	RIG UP TO & RUN CSG
800				
				RAN64 JOINTS OF 139.7 MM, 20.8 KG/M, J-55, ST&C NEW IPSCO CSG
				TOTAL LENGTH: 825.69 M. LANDED ON BOTTOM @ 824.0 M. FLOAT
				COLLAR @ 810.6 M. MARKER JT: 688.01 - 692.48 M.

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 3 XS = 90 L

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	420		RUN CSG	3100

Crew

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	8.00		LB
DERRICK HAND		ERNIE LAFLEUR	8.00		EL
MOTOR HAND		TONY OGILVIE	8.00		TO
FLOOR HAND		BLAIR BAYLIS	8.00		BB
FLOOR HAND		BASSIM KADRI	8.00		BK

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 23

DAY TOUR (800 – 1600)

Bit Record

BIT NO / SIZE / IADC CODE / MANUFACTURER / TYPE / SERIAL NO. / JETS / DEPTH OUT / DEPTH IN / TOTAL M DRILLED / TOTAL HRS RUN

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

D P STANDS / D P SINGLES / KELLY DOWN / TOTAL / WT. OF D C / WT. OF STRING

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (M)

Mud Record

MUD TYPE: [ ] WATER BASED [ ] OIL BASED
TIME / DENSITY (KG/M3) / FUNNEL VISCOSITY / FLUID LOSS (cm3) / pH

MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT

SOLIDS CONTROL: DESILTER / CENTRIFUGE — HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

Metres Drilled

FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: MARTY SHERWOOD

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1015	2.25	5	CIRCULATE CASING
1015	1030	0.25	21	SAFETY MTG. WITH SANJEL CEMENTERS
1030	1145	1.25	12	CEMENT CASING
1145	1300	1.25	14	NIPPLE DOWN BOP SET CASING SLIPS CUT CASING SET 20,000 DAN. IN SLIPS
1300	1600	3.00	1	TEAR OUT N& WASH UP RIG
				CEMENT PRODUCTION CASING WITH: 1.0 M3 + 2.0M3 VISWEEP AHEAD
				17.1 M3 THIXMIX II + .3% CFL-3 + 1.0 % CACL2. DISPLACE WITH 10.3
				M3 WATER. PLUG DOWN @ 11:22 HR. 3/16/2003. BUMP PLUG WITH
				10500 KPA, HELD PRESSURE 10 MIN. BLEED OFF PRESSURE, FLOATS HELD OK
				1.0 M3 GOOD CEMENT RETURNS TO SURFACE.

NOTES:

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430		SET CASING SLIPS	

Crew

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		MARTY SHERWOOD	12.00		MS
DERRICK HAND		KURT SAMUEL	12.00		KS
MOTOR HAND		SCOTT BODIN	12.00		SB
FLOOR HAND		SCOTT BLACK	12.00		SB
FLOOR HAND		RYAN HANSON	12.00		RH
WELL SITE COORDINATOR		GARY WILLIAMS	12.00		GW

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 23

EVENING TOUR (1600 – 2400)

Bit Record

BIT NO / SIZE / IADC CODE / MANUFACTURER / TYPE / SERIAL NO. / JETS / DEPTH OUT / DEPTH IN / TOTAL M DRILLED / TOTAL HRS RUN

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

D P STANDS / D P SINGLES / KELLY DOWN / TOTAL / WT. OF D C / WT. OF STRING

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (M)

Mud Record

MUD TYPE: [ ] WATER BASED [ ] OIL BASED
TIME / DENSITY (KG/M3) / FUNNEL VISCOSITY / FLUID LOSS (cm3) / pH

MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT

SOLIDS CONTROL: DESILTER / CENTRIFUGE — HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

Metres Drilled

FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa | PUMP NO. 1 LINER SIZE | SPM | PUMP NO. 2 LINER SIZE | SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION

DRILLER SIGNATURE: LINUS BOIRE

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	2400	8.00	1	TEAR DOWN / CLEAN RIG
				RIG RELEASE @ 23:59 HRS

NOTES: boiler blow down 3 xs = 90 l

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.5	400			

Crew

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	4.00		LB
DERRICK HAND		ERNIE LAFLEUR	4.00		EL
MOTOR HAND		TONY OGILVIE	4.00		TO
FLOOR HAND		BLAIR BAYLIS	4.00		BB
FLOOR HAND		BASSIM KADRI	4.00		BK

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 23

LICENCE NO	WELL NAME & NO.	DAILY CHECKS	OPR	R.M.
1907	ANADARKO ARROWHEAD RIVER J-74	(1) Daily Walk Around Inspection	BG	LS
OPERATOR: AN[illegible]KO CANADA ENERGY	CONTRACTOR: AKITA DRILLING LTD.	(2) Detailed Inspection - Weekly (Using Check List)		
SURFACE L[illegible]: LA 60:33:35:4N/LO 123:58:53:1W	UNIQUE ID: 300J7404G122450	(3) H2S Signs Posted if Required		
SIGNATURE OF OPERATOR'S REPRESENTATIVE: BARRY GOODRICH	SIGNATURE OF CONTRACTOR'S RIG MANAGER: LEN SAWCHUK	(4) Well Licence & Stick Diagram Posted	BG	LS
		(5) Flare Lines Staked	BG	LS
		(6) BOP Drills Performed		
		(7) Visually Inspect BOPs- Flare Lines & Degasser Lines	BG	LS
		(1) Rig Site Health & Safety Meeting (one/crew/month)		
		(2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
		(3) Mast Inspection before Raising or Lowering		
		(4) Crown Saver Checked		LS
		(5) Motor Kills Checked		

YEAR 2003 | MONTH 3 | DAY 15 | RIG NO 15

KB 8400 | BOILER 1450

TEMPERATURE -20 | CURRENT CONDITIONS: CLEAR | WIND DIRECTION: CALM | ROAD CONDITION: SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)
219.1	202.5	35.70	ST&C	K55	20	240.60		240.00

DC / DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT. O.D.	TYPE THREAD	NO. of JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
102	20.83	E	61	126	4 FH	90	F-650	EMSCO	203
102	41.64	HWDP	61	126	4 FH	20	F-650	EMSCO	203
152	122.91	DC	52	152	4.5 XH	16			

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP BOP	TEST BOP	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	GYRO	TOTALS
MORN		3.75			1.25	2.25	0.25			0.50													8.00
DAY					2.50	5.00	0.25															0.25	8.00
EVE					3.00	1.50					3.25										0.25		8.00
TOTAL		3.75			6.75	8.75	0.50			0.50	3.25										0.25	0.25	24.00

SHALE SHAKERS: NO 1 TYPE CAGLE; TYPE 2. SCREENS CHANGED [ ] YES [ ] NO. TOP 110 / 84; MIDDLE 110 / 84; BOTTOM 110 / 84

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 | YEAR 2003 | MONTH 3 | DAY 15
OPERATOR: ANADARKO CANADA ENERGY | CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK | RIG NO: 15
PROVINCE: N.W.T. | CAMP [X] YES [ ] NO | RIG SAFETY DAYS: 820

MORNING TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
5	D.C.	156	74.75
1	JAR	165	5.07
2	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
33	D.P.	STANDS	
1	D.P.	SINGLES	638.96
	KELLY DOWN		11.17
	TOTAL		824.00
	WT. OF D.C.	17	
	WT. OF STRING	30	

BIT RECORD

BIT NO.	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO.	MK4350
JETS	11.1 / 11.1 / 11.1
DEPTH OUT	
DEPTH IN	702.00
TOTAL M DRILLED	122.00
TOTAL HRS RUN	17.00

CUTTING STRUCTURE: I | O | D.C. | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (M)

MUD RECORD

MUD TYPE	[X] WATER BASED		[ ] OIL BASED
TIME	200	400	530
DENSITY (KG/M3)	1130	1130	
FUNNEL VISCOSITY	78	83	
FLUID LOSS (cm3)	6.5	6.0	
pH	9.5	9.5	
PVT	32.70	33.00	

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
BARITE	15	SX
GEL	5	SX

SOLIDS CONTROL

	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
DESILTER				
CENTRIFUGE	8.00	1130	1120	1850

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
794.00	824.00	D	85	15

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
7600	152.0		152.0	110

REDUCED PUMP SPEED: 2650 @ | @ 64

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
812.00	1.50	

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	30	0.50	2	DRILL F/794 M- 797 M
30	45	0.25	7	RIG SERVICE FUNCTION ANNULAR C/O 9 SECS
45	400	3.25	2	DRILL F/797 M - 824 M , TOTAL DEPTH.
400	445	0.75	5	CICULATE UP BTM HOLE SAMPLE & CONDITION
445	515	0.50	10	DEV. SURVEY @ 812 M
515	545	0.50	5	COND MUD & CIRC
545	800	2.25	6	PUMP PILL , BLOW KELLY WIPER TRIP TO CSG SHOE
800				FLOW CHECK @ 812 M @ 430 M @ 240M
				HOLE TIGHT @ 678 M @ 564 M @ 544 M

NOTES: FUNCTION CROWN SAVER
WT BELOW JARS = 13000 JAR HRS = 117.25
BOILER BLOW DOWN 4 XS = 120 L

DRILLER SIGNATURE: LINUS BOIRE

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	410	43	TRIPPING	3100

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	8.00		LB
DERRICK HAND		ERNIE LAFLEUR	8.00		EL
MOTOR HAND		TONY OGILVIE	8.00		TO
FLOOR HAND		BLAIR BAYLIS	8.00		BB
FLOOR HAND		BASSIM KADRI	8.00		BK

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT

CREW SAFETY DAYS: 22

DAY TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
5	D.C.	156	74.75
1	JAR	165	5.07
2	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
33	D.P.	STANDS	
1	D.P.	SINGLES	638.96
	KELLY DOWN		11.17
	TOTAL		824.00
	WT. OF D.C.	17	
	WT. OF STRING	30	

BIT RECORD

BIT NO.	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO.	MK4350
JETS	11.1 / 11.1 / 11.1
DEPTH OUT	824.00
DEPTH IN	702.00
TOTAL M DRILLED	122.00
TOTAL HRS RUN	17.00

CUTTING STRUCTURE: I | O | D.C. | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG 2 - 3 | TORQUE AT BOTTOM 0 | FILL ON BOTTOM (M) 0.00

MUD RECORD

MUD TYPE	[X] WATER BASED	[ ] OIL BASED
TIME	930	1200
DENSITY (KG/M3)	1130	1130
FUNNEL VISCOSITY	93	85
FLUID LOSS (cm3)		6.0
pH	10.0	10.0
PVT	31.00	30.90

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
BARITE	15	SX

SOLIDS CONTROL

	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
DESILTER				
CENTRIFUGE	8.00	1140	1130	1800

METRES DRILLED: FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6400	152.0		152.0	110

REDUCED PUMP SPEED: 2700 @ | @ 65

DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	900	1.00	6	RUN IN HOLE WASH f/ 802m - 824m
900	1015	1.25	5	CIRCULATE HOLE CLEAN
1015	1130	1.25	6	15 STDS WIPER TRIP FLOWCHECK @ 824m,716m
1130	1245	1.25	5	CIRCULATE HOLE CLEAN
1245	1300	0.25	22	PUMP GYRO TOOL DOWN
1300	1545	2.75	6	HOIST TO LOG PUMP PILL FLOWCHECK @ 824m,716m,401m,136m,ON BANK
1545	1600	0.25	7	RIG SERVICE FUNCTION BLIND RAMS C/O 3 SECS
				HOLE VOLUME
				CAL. VOLUME = 3.90m3 CHECK LEL LEVELS IN ALL
				ACT. VOLUME = 4.62m3
				DIFF. VOLUME = .72m3

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS
WT BELOW JARS 13,000 DAN TOTAL ROTATING HRS = 117.25
REVIEW J.S.A. ON HANDLING GYRO TOOL

DRILLER SIGNATURE: MARTY SHERWOOD

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430	31	GRYO TOOL	3100

DAY TOUR FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		MARTY SHERWOOD	12.00		MS
DERRICK HAND		KURT SAMUEL	12.00		KS
MOTOR HAND		SCOTT BODIN	12.00		SB
FLOOR HAND		SCOTT BLACK	12.00		SB
FLOOR HAND		RYAN HANSON	12.00		RH
WELL SITE COORDINATOR		GARY WILLIAMS	12.00		GW

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT

CREW SAFETY DAYS: 22

EVENING TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
5	D.C.	156	74.75
1	JAR	165	5.07
2	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
33	D.P.	STANDS	
1	D.P.	SINGLES	638.96
	KELLY DOWN		11.17
	TOTAL		824.00
	WT. OF D.C.	17	
	WT. OF STRING	30	

BIT RECORD

BIT NO.	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO.	MK4350
JETS	11.1 / 11.1 / 11.1
DEPTH OUT	824.00
DEPTH IN	702.00
TOTAL M DRILLED	122.00
TOTAL HRS RUN	17.00

I	O	D.C.	LOC	BRG	GAGE	ODC	REASON PULLED	TOTAL RUN M/HR
2	2	BT	A	1		BT	TD	7.00

HOLE CONDITION: HOLE DRAG | TORQUE AT BOTTOM | FILL ON BOTTOM (M)

MUD RECORD

MUD TYPE	[X] WATER BASED	[ ] OIL BASED
TIME	2200	
DENSITY (KG/M3)		
FUNNEL VISCOSITY		
FLUID LOSS (cm3)		
pH		

MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT

SOLIDS CONTROL: DESILTER | CENTRIFUGE — HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

METRES DRILLED: FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6200	152.0		152.0	110

REDUCED PUMP SPEED: 2650 @ 0 | @ 64

DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	1615	0.25	21	SAFETY MTG. REVIEW J.S.A. ON WIRELINE LOGGING
1615	1930	3.25	11	RIG UP TUCKER WIRELINE SERVICES LOGS GRT,CNT,LDT,CST,PIT,
				ON BOTTOM @ 17:05 HRS. LOGGERS TD 821m
1930	2100	1.50	6	MAKE UP BIT AND RUN IN HOLE
2100	2400	3.00	5	COND MUD & CIRC
2400				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS = 120 L

DRILLER SIGNATURE: LINUS BOIRE

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	410	31	LAY DOWN DP	3100

EVENING TOUR FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	4.00		LB
DERRICK HAND		ERNIE LAFLEUR	4.00		EL
MOTOR HAND		TONY OGILVIE	4.00		TO
FLOOR HAND		BLAIR BAYLIS	4.00		BB
FLOOR HAND		BASSIM KADRI	4.00		BK

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT

CREW SAFETY DAYS: 22

LICENCE NO.	WELL NAME & NO		
1987	ANADARKO ARROWHEAD RIVER J-74		
OPERATOR		CONTRACTOR	
ANADARKO CANADA ENERGY		AKITA DRILLING LTD.	
SURFACE LOC		UNIQUE ID	
LA 60:33:35:4N/LO 123:58:53:1W		300J7404G122450	
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S RIG MANAGER	
BARRY GOODRICH		LEN SAWCHUK	

YEAR 2003 MONTH 3 DAY 14 — RIG NO 15 — KB 12000 — BOILER 4200

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)
219.1	202.5	35.70	ST&C	K55	20	240.60		240.00

DC / DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT O.D.	TYPE THREAD	NO. of JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
102	20.83	E	61	126	4 FH	90	F-650	EMSCO	203
102	41.64	HWDP	61	126	4 FH	20	F-650	EMSCO	203
152	122.91	DC	52	152	4.5 XH	16			

TEMPERATURE -22; CURRENT CONDITIONS SNOW; WIND DIRECTION CALM; ROAD CONDITION SNOW

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	TOTALS
MORN		0.50			0.50	5.75	0.25		1.00		8.00
DAY		5.75	2.00				0.25				8.00
EVE		7.50					0.25			0.25	8.00
TOTAL		13.75	2.00		0.50	5.75	0.75		1.00	0.25	24.00

Shakers: No. 1, Type CAGLE 2; Screens changed; Top 110 / 84; Middle 110 / 84; Bottom 110 / 84

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 — YEAR 2003 MONTH 3 DAY 14
OPERATOR: ANADARKO CANADA ENERGY — CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK — RIG NO 15
PROVINCE: N.W.T. — CAMP: X YES — RIG SAFETY DAYS 819

MORNING TOUR

Drill string

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
1	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	158	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
27	D.P. STANDS		524.01
1	D.P. SINGLES		
	KELLY DOWN		4.12
	TOTAL		702.00
	WT. OF D.C.		17
	WT. OF STRING		26

Bit Record

BIT NO	1	2RR
SIZE	200.0	200.0
IADC CODE		
MANUFACTURER	GEO DIAMOND	SMITH
TYPE	MA74YPX	F12YGP
SERIAL NO	JS7381	MK4350
JETS	7.1 7.1 11.1 11.1 / 7.1 7.1 11.1	
DEPTH OUT	702.00	
DEPTH IN	240.00	702.00
TOTAL M DRILLED	462.00	
TOTAL HRS RUN	21.25	

HOLE CONDITION: HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (M)

Mud Record

MUD TYPE: X WATER BASED / OIL BASED

TIME	100
DENSITY (KG/M3)	1110
FUNNEL VISCOSITY	62
FLUID LOSS (cm3)	7.0
pH	10.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
BARITE	12	SX

SOLIDS CONTROL — CENTRIFUGE: HOURS RUN 8.00, INTAKE DENSITY 1100, OVER FLOW DENSITY 1095, UNDER FLOW DENSITY 1790

Metres Drilled

FROM	TO	D-R-C	RPM	WOB
701.00	702.00	D	80	6

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
5000	152.0		152.0	110

REDUCED PUMP SPEED; DEVIATION SURVEYS

DRILLER SIGNATURE: LINUS BOIRE

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	30	0.50	2	DRILL 701M-702 M
30	100	0.50	5	COND MUD & CIRC UP BOTTOM SAMPLE
100	315	2.25	6	PUMP PILL , BLOW KELLY , TRIP FOR BIT STRAP OUT
315	330	0.25	7	RIG SERVICE FUNCTION BLIND RAMS C/O 3 SECS
330	400	0.50	6	MAKE UP BIT AND RUN IN BHA
400	500	1.00	9	SLIP AND CUT DRILLING LINE
500	800	3.00	6	RUN IN HOLE W/BIT #2RR BRIDGED @ 304M@323M @340 M
800				REAM BRIDGES TO BOTTOM
				FLOW CHECK @ 700 M @ 350 M @ 240 M @ OOH
				STRAP=697.29 M HOLE VOLUME CALCULATED 3.59 M2
				BOARD=697.61 M MEASURED 3.68 M2
				DIFF = .32 M DIFF .09 M2

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS= 120 L
WT BELOW JARS=13000 JAR HRS = 100.25

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	400	35		3170

Crew — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	8.00	LB
DERRICK HAND		ERNIE LAFLEUR	8.00	EL
MOTOR HAND		TONY OGILVIE	8.00	TO
FLOOR HAND		BLAIR BAYLIS	8.00	BB
FLOOR HAND		BASSIM KADRI	8.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 21

DAY TOUR

Drill string

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	158	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
29	D.P. STANDS		552.87
	D.P. SINGLES		
	KELLY DOWN		8.26
	TOTAL		735.00
	WT. OF D.C.		17
	WT. OF STRING		30

Bit Record

BIT NO	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO	MK4350
JETS	11.1 11.1 / 11.1
DEPTH OUT	
DEPTH IN	702.00
TOTAL M DRILLED	33.00
TOTAL HRS RUN	5.75

HOLE CONDITION: HOLE DRAG 0; TORQUE AT BOTTOM 0; FILL ON BOTTOM (M) 0.00

Mud Record

MUD TYPE: X WATER BASED / OIL BASED

TIME	1100	1400	1600
DENSITY (KG/M3)	1110	1110	1110
FUNNEL VISCOSITY	70	85	85
FLUID LOSS (cm3)	6.0	6.0	6.0
pH	10.0	10.0	10.0
PVT	29.50	31.10	30.00

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
BARAZAN D	2	SX
PAC R	1	SX
GEL	6	SX

SOLIDS CONTROL — CENTRIFUGE: HOURS RUN 8.00, INTAKE DENSITY 1110, OVER FLOW DENSITY 1100, UNDER FLOW DENSITY 1830

Metres Drilled

FROM	TO	D-R-C	RPM	WOB
702.00	735.00	D	80	15

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6400	152.0		152.0	110

REDUCED PUMP SPEED: 2320 @ 0 @ 67

DRILLER SIGNATURE: MARTY SHERWOOD

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	1000	2.00	3	REAM BRIDGES f/ 449m - 702m
1000	1030	0.50	2	DRILL 200mm HOLE f/ 702m - 704m
1030	1045	0.25	7	RIG SERVICE FUNCTION ANNULAR C/O 8 SECS
1045	1600	5.25	2	DRILL 200mm HOLE f/ 704m - 735m
				CHECK LEL LEVELS IN ALLCONFINED SPACES OK G.W.

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS
WT. BELOW JARS 13,000 DAN TOTAL ROTATING HRS. 106
REVIEW J.S.A. ON CLEANING SUCTION SCREEN & BLEEDING PUMP OFF

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430	30	TOW ROPES	3147

Crew — FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		MARTY SHERWOOD	12.00	MS
DERRICK HAND		KURT SAMUEL	12.00	KS
MOTOR HAND		SCOTT BODIN	12.00	SB
FLOOR HAND		SCOTT BLACK	12.00	SB
FLOOR HAND		RYAN HANSON	12.00	RH
WELL SITE COORDINATOR		GARY WILLIAMS	12.00	GW

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 21

EVENING TOUR

Drill string

NO.	BIT	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
1	D.C.	158	74.75
1	JAR	165	5.07
4	D.C.	158	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
32	D.P. STANDS		610.48
	D.P. SINGLES		
	KELLY DOWN		9.65
	TOTAL		794.00
	WT. OF D.C.		17
	WT. OF STRING		30

Bit Record

BIT NO	2RR
SIZE	200.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	F12YGP
SERIAL NO	MK4350
JETS	11.1 11.1 / 11.1
DEPTH OUT	
DEPTH IN	702.00
TOTAL M DRILLED	92.00
TOTAL HRS RUN	13.25

HOLE CONDITION: HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (M)

Mud Record

MUD TYPE: X WATER BASED / OIL BASED

TIME	1800	2000	2400
DENSITY (KG/M3)	1120	1120	1125
FUNNEL VISCOSITY	80	84	87
FLUID LOSS (cm3)	6.0	6.5	6.5
pH	10.0	9.5	9.5
pvt	29.30	27.00	32.20

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
GEL	10	SX

SOLIDS CONTROL — CENTRIFUGE: HOURS RUN 8.00, INTAKE DENSITY 1110, OVER FLOW DENSITY 1100, UNDER FLOW DENSITY 1835

Metres Drilled

FROM	TO	D-R-C	RPM	WOB
735.00	794.00	D	85	15

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6600	152.0		152.0	110

REDUCED PUMP SPEED: 2400 @ 0 @ 65

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
745.00	1.00	

DRILLER SIGNATURE: LINUS BOIRE

Time Log

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	1800	2.00	2	DRILL 200mm HOLE f/ 735m - 749m
1800	1815	0.25	7	RIG SERVICE FUNCTION PIPE RAMS C/O 2 SECS
1815	1915	1.00	2	DRILL 200mm HOLE f/ 749m - 758 m
1915	1930	0.25	10	DEV. SURVEY @ 745 M
1930	2400	4.50	2	DRILL F/758 M- 794 M
2400				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS = 123 L
WT BELOW JARS = 13000 JAR HRS = 113.5

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	410	33		3100

Crew — FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	4.00	LB
DERRICK HAND		ERNIE LAFLEUR	4.00	EL
MOTOR HAND		TONY OGILVIE	4.00	TO
FLOOR HAND		BLAIR BAYLIS	4.00	BB
FLOOR HAND		BASSIM KADRI	4.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 21

LICENCE NO: 1987
WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74
OPERATOR: ANA[illegible]KO CANADA ENERGY
CONTRACTOR: AKITA DRILLING LTD.
SURFACE LO[illegible]: LA 60:33:35:4N/LO 123:58:53:1W
UNIQUE ID: 300J7404G122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE: BARRY GOODRICH
SIGNATURE OF CONTRACTOR'S RIG MANAGER: LEN SAWCHUK

DAILY CHECKS
(1) Daily Walk Around Inspection — BG LS
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Stick Diagram Posted — BG LS
(5) Flare Lines Staked — BG LS
(6) BOP Drills Performed — BG LS
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines — BG LS
(1) Rig Site Health & Safety Meeting (one/crew/month)
(2) CAODC Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked — LS
(5) Motor Kills Checked

YEAR 2003 MONTH 3 DAY 13
RIG NO 15
RIG 10600 BOILER 3500
TEMPERATURE -28
CURRENT CONDITIONS: OVERCAST
WIND DIRECTION: N W
ROAD CONDITION: SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)
219.1	202.5	35.70	ST&C	K55	20	240.60		240.00

DC / DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT O.D.	TYPE THREAD	NO. of JOINTS
102	20.83	E	61	126	4 FH	90
102	41.64	HWDP	61	126	4 FH	20
152	122.91	DC	52	152	4.5 XH	16

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
F-650	EMSCO	203
F-650	EMSCO	203

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MEETING	TOTALS
MORN		6.75					0.25			0.75					0.25							8.00
DAY		6.50					0.25			1.00											0.25	8.00
EVE		7.50					0.25			0.25												8.00
TOTAL		20.75					0.75			2.00					0.25						0.25	24.00

SHALE SHAKERS: NO 1 TYPE CAGLE; NO 2
SCREENS CHANGED: YES / NO
	1	2
TOP	110	84
MIDDLE	110	84
BOTTOM	110	84

RENTALS - SERVICES — MORN / DAY / EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 — YEAR 2003 MONTH 3 DAY 13
OPERATOR: ANADARKO CANADA ENERGY — CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK — RIG NO: 15
PROVINCE: N.W.T. — CAMP: X YES / NO — RIG SAFETY DAYS: 618

MORNING TOUR

DRILL STRING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
9	D.P.	STANDS	
1	D.P.	SINGLES	180.63
	KELLY DOWN		12.50
	TOTAL		367.00
	WT. OF D.C.		17
	WT. OF STRING		21

BIT RECORD

BIT NO	1
SIZE	200.0
IADC CODE	
MANUFACTURER	GEO DIAMOND
TYPE	MA74YPX
SERIAL NO	JS7381
JETS	7.1 7.1 / 7.1 7.1
DEPTH OUT	
DEPTH IN	240.00
TOTAL M DRILLED	127.00
TOTAL HRS RUN	6.75

CUTTING STRUCTURE: TI / TO / MDC / LOC / BRG / GAGE / ODC / REASON PULLED / TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: X WATER BASED / OIL BASED

TIME	200	400	530
DENSITY (KG/M3)	1010	1030	1050
FUNNEL VISCOSITY	35	41	46
FLUID LOSS (cm3)	12.5	9.0	6.0
pH	10.0	10.0	10.0
PVT	30.10	30.00	31.10

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
GEL	53	SX
SODIUM BICARBONATE	2	SX
SODA ASH	2	SX
LIGNITE	2	SX
PAC R	1	SX

SOLIDS CONTROL — DESILTER: HOURS RUN / INTAKE DENSITY (KG/M3) / OVER FLOW DENSITY / UNDER FLOW DENSITY
CENTRIFUGE: HOURS RUN 8.00 / INTAKE DENSITY 1030 / OVER FLOW DENSITY 1020 / UNDER FLOW DENSITY 1860

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
240.00	367.00	D	80	5

CIRCULATION PRESSURE kPa: 5200 — PUMP NO. 1 LINER SIZE 152.0 — PUMP NO. 2 LINER SIZE 152.0, SPM 110
REDUCED PUMP SPEED: 1830 @ … @ 66

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
268.00	0.50	
316.00	0.75	

DRILLER SIGNATURE: LINUS BOIRE

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	15	PREFORM LEAK-OFF TEST
15	245	2.50	2	DRILL F/243 M- 281 M
245	300	0.25	10	DEV. SURVEY @ 268 M
300	445	1.75	2	DRILL F/ 281 M - 319 M
445	500	0.25	7	RIG SERVICE FUNCTION PIPE RAMS C/O 3 SECS
500	515	0.25	10	DEV. SURVEY @ 306 M
515	545	0.50	2	DRILL F/319 M - 329 M
545	600	0.25	10	DEV. SURVEY @ 319 M
600	800	2.00	2	DRILL F/329 M- 367 M
800				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS = 120 L
WT BELOW JARS = 13000 JAR HRS = 86.25

BOILER HRS RUN	pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	440	23		3330

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	8.00	LB
DERRICK HAND		ERNIE LAFLEUR	8.00	EL
MOTOR HAND		TONY OGILVIE	8.00	TO
FLOOR HAND		BLAIR BAYLIS	8.00	BB
FLOOR HAND		BASSIM KADRI	8.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 20

DAY TOUR

DRILL STRING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
18	D.P.	STANDS	341.66
1	D.P.	SINGLES	9.62
	KELLY DOWN		9.85
	TOTAL		535.00
	WT. OF D.C.		17
	WT. OF STRING		22

BIT RECORD

BIT NO	1
SIZE	200.0
IADC CODE	
MANUFACTURER	GEO DIAMOND
TYPE	MA74YPX
SERIAL NO	JS7381
JETS	7.1 7.1 / 7.1 7.1
DEPTH OUT	
DEPTH IN	240.00
TOTAL M DRILLED	295.00
TOTAL HRS RUN	13.25

HOLE CONDITION: HOLE DRAG 0 / TORQUE AT BOTTOM 0 / FILL ON BOTTOM (M) 0.00

MUD RECORD — MUD TYPE: X WATER BASED / OIL BASED

TIME	800	1200	1530
DENSITY (KG/M3)	1080	1060	1080
FUNNEL VISCOSITY	53	48	45
FLUID LOSS (cm3)	8.0	8.0	8.0
pH	10.5	10.0	10.0
PVT	30.90	30.10	31.80

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
GEL	10	SX

SOLIDS CONTROL — CENTRIFUGE: HOURS RUN 8.00 / INTAKE DENSITY 1090 / OVER FLOW DENSITY 1070 / UNDER FLOW DENSITY 1870

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
367.00	535.00	D	110	6

CIRCULATION PRESSURE kPa: 6600 — PUMP NO. 1 LINER SIZE 152.0 — PUMP NO. 2 LINER SIZE 152.0, SPM 110
REDUCED PUMP SPEED: 2230 @ 0 @ 65

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
353.00	0.25	
382.00	1.00	
417.00	0.50	
505.00	0.25	

DRILLER SIGNATURE: MARTY SHERWOOD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG. BOP DRILL WITH CREW WELL SECURED IN 90 SECS
815	900	0.75	2	DRILL 200mm HOLE f/ 367m - 395m
900	915	0.25	7	RIG SERVICE FUNCTION ANNULAR C/O 8 SECS
915	1500	5.75	2	DRILL 200mm HOLE f/ 395m - 535m
1500	1600	1.00	10	ACCUMULATED SURVEY TIMES

CHECK LEL LEVELS IN ALL CONFINED SPACES OK G.W.

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS
WT. BELOW JARS 13,000 DAN TOTAL ROTATING HRS = 92.75
HELD CAMP FIRE DRILL

BOILER HRS RUN	pH	STACK TEMP.	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430	22	BOP DRILL	3217

DAY TOUR — FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		MARTY SHERWOOD	12.00	MS
DERRICK HAND		KURT SAMUEL	12.00	KS
MOTOR HAND		SCOTT BODIN	12.00	SB
FLOOR HAND		RYAN HANSON	12.00	RH
FLOOR HAND		SCOTT BLACK	12.00	SB
WELL SITE COORDINATOR		GARY WILLIAMS	12.00	GW

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 20

EVENING TOUR

DRILL STRING ASSEMBLY

NO.		O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
27	D.P.	STANDS	514.37
	D.P.	SINGLES	
	KELLY DOWN		12.76
	TOTAL		701.00
	WT. OF D.C.		17
	WT. OF STRING		26

BIT RECORD

BIT NO	1
SIZE	200.0
IADC CODE	
MANUFACTURER	GEO DIAMOND
TYPE	MA74YPX
SERIAL NO	JS7381
JETS	7.1 7.1 / 7.1 7.1
DEPTH OUT	
DEPTH IN	240.00
TOTAL M DRILLED	461.00
TOTAL HRS RUN	20.75

HOLE CONDITION: HOLE DRAG / TORQUE AT BOTTOM / FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: X WATER BASED / OIL BASED

TIME	1800	2100	2300
DENSITY (KG/M3)	1080	1100	1100
FUNNEL VISCOSITY	50	49	55
FLUID LOSS (cm3)	8.0	8.5	8.0
pH	10.0	10.0	10.0
PVT		35.00	34.00

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
GEL	15	SX
BARAZAN D	1	SX

SOLIDS CONTROL — CENTRIFUGE: HOURS RUN 8.00 / INTAKE DENSITY 1100 / OVER FLOW DENSITY 1090 / UNDER FLOW DENSITY 1780

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
535.00	701.00	D	120	4

CIRCULATION PRESSURE kPa: 7500 — PUMP NO. 1 LINER SIZE 152.0 — PUMP NO. 2 LINER SIZE 152.0, SPM 110
REDUCED PUMP SPEED: 2900 @ 0 @ 64

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
592.00	0.25	
678.00	0.50	

DRILLER SIGNATURE: LINUS BOIRE

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	2245	6.75	2	DRILL 200mm HOLE F/ 535 M - 691 M
2245	2300	0.25	7	RIG SERVICE FUNCTION PIPE RAMS C/O 3 SECS
2300	2315	0.25	10	DEV. SURVEY @ 678 M
2315	2400	0.75	2	DRILL F/691 M - 701 M
2400				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS = 120 L
HELD CAMP FIRE DRILL
WT BELOW JARS = 1300 JAR HRS = 100.25

BOILER HRS RUN	pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	400	27	FIRE DRILL	3170

EVENING TOUR — FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	4.00	LB
DERRICK HAND		ERNIE LAFLEUR	4.00	EL
MOTOR HAND		TONY OGILVIE	4.00	TO
FLOOR HAND		BLAIR BAYLIS	4.00	BB
FLOOR HAND		BASSIM KADRI	4.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 20

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

LICENCE NO	WELL NAME & NO		
1987	ANADARKO ARROWHEAD RIVER J-74		
OPERATOR		CONTRACTOR	
ANADARKO CANADA ENERGY		AKITA DRILLING LTD.	
SURFACE LOCATION		UNIQUE ID	
LA 60:33:35:4N/LO 125:58:53:1W		300J7404G122450	
SIGNATURE OF OPERATOR'S REPRESENTATIVE		SIGNATURE OF CONTRACTOR'S RIG MANAGER	
BRIAN PREECE		LEN SAWCHUK	

DAILY CHECKS
(1) Daily Walk Around Inspection — BP LS
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Stick Diagram Posted — BP LS
(5) Flare Lines Staked — BP LS
(6) BOP Drills Performed — BP LS
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines — BP LS
(1) Rig Site Health & Safety Meeting (one/crew/month)
(2) CAODC Rig Safer Inspection Checklist (one/rig/month)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked — LS
(5) Motor Kills Checked

YEAR 2003 MONTH 3 DAY 12
RIG NO 15
KB 13275 — DEPTH 5700
TEMPERATURE -24
CURRENT CONDITIONS: CLEAR
WIND DIRECTION: N.W.
ROAD CONDITION: SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)
219.1	202.5	35.70	ST&C	K55	20	240.60		240.00

DC / DP SIZE	MASS	GRADE	MINIMUM ID	T. JNT. O.D.	TYPE THREAD	NO. of JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
102	20.83	E	61	126	4 FH	90	F-650	EMSCO	203
102	41.64	HWDP	61	126	4 FH	20	F-650	EMSCO	203
152	122.91	DC	52	152	4.5 XH	16			

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MEETING	WELD	DIVERTER	BOP	DRILLOUT	TOTALS
MORN					1.75							2.25	3.75								0.25					8.00
DAY													0.50	1.50							0.50	5.00	0.50			8.00
EVE					0.25	1.50	0.25								4.25						0.25			0.25	1.25	8.00
TOTAL					2.00	1.50	0.25					2.25	4.25	1.50	4.25						1.00	5.00	0.50	0.25	1.25	24.00

SHALE SHAKER — NO. 1 TYPE CAGLE; 2 TYPE
SCREENS CHANGED: YES / NO

	TOP	MIDDLE	BOTTOM
1	110	110	110
2	84	84	84

RENTAL SERVICES — MORN | DAY | EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 — YEAR 2003 MONTH 3 DAY 12
OPERATOR: ANADARKO CANADA ENERGY — CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK — RIG NO: 15
PROVINCE: N.W.T. — CAMP: [X] YES [ ] NO — RIG SAFETY DAYS: 817

MORNING TOUR

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	1.77
8	D C	156	74.75
1	JAR	165	5.07
4	D C	156	36.24
1	X O	158	0.91
6	H W D P	130	55.61
	D.P. STANDS		
	D.P. SINGLES		
	KELLY DOWN		
	TOTAL		173.67
	WT. OF D.C.		
	WT. OF STRING		

BIT RECORD

BIT NO.	2
SIZE	311.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	X1CXP
SERIAL NO	J26052
JETS	15.9 / 15.9 / 15.9
DEPTH OUT	240.00
DEPTH IN	212.00
TOTAL M DRILLED	28.00
TOTAL HRS RUN	2.00

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG 3 — TORQUE AT BOTTOM — FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: [ ] WATER BASED [ ] OIL BASED
TIME — DENSITY (KG/M3) — FUNNEL VISCOSITY — FLUID LOSS (cm3) — pH

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
DESCO	1	SX

SOLIDS CONTROL — DESILTER / CENTRIFUGE: HOURS RUN | INTAKE DENSITY (KG/M3) | OVER FLOW DENSITY | UNDER FLOW DENSITY

METRES DRILLED — FROM | TO | D-R-C | RPM | WOB

CIRCULATION PRESSURE kPa — PUMP NO. 1: LINER SIZE 152.0, SPM — PUMP NO. 2: LINER SIZE 152.0, SPM
REDUCED PUMP SPEED: @ | @
DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION
DRILLER SIGNATURE: LINUS BOIRE

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	115	1.25	12	RUN CSG
115	300	1.75	5	CIRCULATE CSG
300	315	0.25	21	SAFETY MTG. PRIOR CEMENTING
315	415	1.00	12	CEMENT CSG
415	800	3.75	13	WAIT ON CEMENT
800				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS=120 L
JARS ROTATING HRS = 79.5

BOILER HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430		CMT CSG	

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	8.00		LB
DERRICK HAND		ERNIE LAFLEUR	8.00		EL
MOTOR HAND		TONY OGILVIE	8.00		TO
FLOOR HAND		BLAIR BAYLIS	8.00		BB
FLOOR HAND		BASSIM KADRI	8.00		BK

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 19

DAY TOUR

DRILLING ASSEMBLY: BIT | O.D. | LENGTH — D P STANDS — D P SINGLES — KELLY DOWN — TOTAL — WT. OF D C — WT. OF STRING

BIT RECORD: BIT NO. — SIZE — IADC CODE — MANUFACTURER — TYPE — SERIAL NO. — JETS — DEPTH OUT — DEPTH IN — TOTAL M DRILLED — TOTAL HRS RUN — CUTTING STRUCTURE — HOLE CONDITION: HOLE DRAG — TORQUE AT BOTTOM — FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: [ ] WATER BASED [ ] OIL BASED — TIME — DENSITY (KG/M3) — FUNNEL VISCOSITY — FLUID LOSS (cm3) — pH
MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT
SOLIDS CONTROL: DESILTER / CENTRIFUGE

METRES DRILLED: FROM | TO | D-R-C | RPM | WOB
CIRCULATION PRESSURE kPa — PUMP NO. 1 LINER SIZE 152.0 — PUMP NO. 2 LINER SIZE 152.0
REDUCED PUMP SPEED: @ 0 @
DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION
DRILLER SIGNATURE: MARTY SHERWOOD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	13	WAIT ON CEMENT
830	845	0.25	22	CUT CASING
845	900	0.25	21	SAFETY MTG. LAYING DOWN DIVERTER
900	930	0.50	23	LAY DOWN DIVERTER
930	1145	2.25	22	WELD ON BOWL
1145	1415	2.50	22	LET BOWL COOL PRESSURE TEST BOWL TO 7,000 KPA
1415	1430	0.25	21	SAFETY MTG. REVIEW J.S.A. ON NIPPLE UP BOP
1430	1600	1.50	14	NIPPLE UP B.O.P.
1600				
				CHECK LEL LEVELS IN ALL CONFINED SPACES OK G.W.
				N.E.B. INSPECTION CONDUCTED

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS

BOILER HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430		NIPPLE UP BOPS	

DAY TOUR FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		MARTY SHERWOOD	12.00		MS
DERRICK HAND		KURT SAMUEL	12.00		KS
MOTOR HAND		SCOTT BODIN	12.00		SB
FLOOR HAND		RYAN HANSON	12.00		RH
FLOOR HAND		SCOTT BLACK	12.00		SB
WELL SITE COORDINATOR		GARY WILLIAMS	12.00		GW

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 19

EVENING TOUR

NO.	DRILLING ASSEMBLY	O.D.	LENGTH
1	BIT		0.27
1	BIT SUB	155	1.02
8	D C	156	74.75
1	JAR	165	5.07
4	D C	156	36.24
1	X O	158	0.91
6	H W D P	130	55.61
3	D P STANDS		56.84
	D P SINGLES		
	KELLY DOWN		12.84
	TOTAL		243.55
	WT. OF D C	17	
	WT. OF STRING	19	

BIT RECORD

BIT NO.	1
SIZE	200.0
IADC CODE	
MANUFACTURER	GEO DIAMOND
TYPE	MA74YPX
SERIAL NO	JS7381
JETS	7.1 / 7.1 / 7.1 / 7.1
DEPTH OUT	
DEPTH IN	240.00
TOTAL M DRILLED	
TOTAL HRS RUN	

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR
HOLE CONDITION: HOLE DRAG — TORQUE AT BOTTOM — FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: [ ] WATER BASED [ ] OIL BASED — TIME — DENSITY (KG/M3) — FUNNEL VISCOSITY — FLUID LOSS (cm3) — pH
MUD MATERIALS ADDED: PRODUCT | AMOUNT | UNIT
SOLIDS CONTROL: DESILTER / CENTRIFUGE

METRES DRILLED: FROM 240.00 | TO | D-R-C | RPM | WOB
CIRCULATION PRESSURE kPa — PUMP NO. 1 LINER SIZE 152.0 — PUMP NO. 2 LINER SIZE 152.0
REDUCED PUMP SPEED: @ 0 @
DEVIATION SURVEYS: DEPTH (M) | DEVIATION | DIRECTION
DRILLER SIGNATURE: LINUS BOIRE

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	1615	0.25	21	SAFETY MTG. WITH INLAND PRESURRE TESTER
1615	1845	2.50	15	PRESSURE TEST WITH INLAND PRESSURE TESTERS TEST EACH VALVE IN
1845				MANIFOLD STABBING VALVE INSIDE BOP VALVE 1,400 KPA - 14,000 KPA
				TEST BLIND RAMS,HCR,MANUAL HCR, INSIDE KILL LINE VALVE & CASING
				1,400 KPA - 16,000 KPA 10 MIN EACH TEST
1845	2015	1.50	6	MAKE UP B.H.A. RUN IN HOLE
2015	2200	1.75	15	PRESSURE TEST OUTSIDE KILL LINE VALVE,INSIDE KILL LINE VALVE,CHECK
2200				VALVE HYDDRIL LOWER KELLY VALVE, UPPER KELLY VALVE, PIPE RAMS,
				LOW 1400 KPA HIGH 14000 KPA 10 MIN EACH FUNCTION MTR KILLS
2200	2215	0.25	24	HELD BOP DRILL W/CREW
2215	2230	0.25	7	RIG SERVICE FUNCTION ANNULAR C/O 9 SECS
2230	2345	1.25	25	DRILL OUT CMT FLOAT AND SHOE
2345	2400	0.25	5	CIRCULATE HOLE CLEAN
2400				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS = 120 L
ACCUMULATOR FUNCTION START 21 000 kpa/CLOSE ANNULAR 4480 kpa LOSS(13 sec)CLOSE
PIPE RAM 1120 kpa LOSS (5 sec)OPEN HCR 350kpa LOSS (3 sec)15 050kpa REMAINING
RECHARGE TIME 1min 18 sec / PRECHARGE PRESSURE 7 000 kpa

BOILER HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430		P/TESTING BOPS	

EVENING TOUR FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	4.00		LB
DERRICK HAND		ERNIE LAFLEUR	4.00		EL
MOTOR HAND		TONY OGILVIE	4.00		TO
FLOOR HAND		BLAIR BAYLIS	4.00		BB
FLOOR HAND		BASSIM KADRI	4.00		BK

RATE SCHEDULE: [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 19

LICENCE NO.	WELL NAME & NO	YEAR	MONTH	DAY
1987	ANADARKO ARROWHEAD RIVER J-74	2003	3	11

OPERATOR: ANA[illegible]O CANADA ENERGY
CONTRACTOR: AKITA DRILLING LTD.
SURFACE LOCATION: LA 60:33:35:4N/LO 123:58:53:1W
UNIQUE ID: 300J7404G122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE: BRIAN PREECE
SIGNATURE OF CONTRACTOR'S RIG MANAGER: LEN SAWCHUK

DAILY CHECKS
(1) Daily Walk Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOPs - Flare Lines & Degasser Lines
(1) Rig Site Health & Safety Meeting (one/crew/month)
(2) CAODC Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked
(5) Motor Kills Checked — LS

RIG NO: 15
RIG: 13275 — BOILER: 5700
TEMPERATURE: -24
CURRENT CONDITIONS: CLEAR
WIND DIRECTION: N.W.
ROAD CONDITION: SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)

DC/DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT O.D.	TYPE THREAD	NO. of JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
102	20.83	E	61	126	4 FH	90	F-650	EMSCO	203
102	41.64	HWDP	61	126	4 FH	20	F-650	EMSCO	203
152	122.91	DC	52	152	4.5 XH	16			

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING			TOTALS
MORN		4.25			0.50	2.50	0.25			0.50														8.00
DAY		2.00	2.00		0.50	3.00	0.25			0.25														8.00
EVE			1.25		3.00	2.25						1.25									0.25			8.00
TOTAL		6.25	3.25		4.00	7.75	0.50			0.75		1.25									0.25			24.00

SHALE SHAKERS: NO. 1 TYPE CAGLE; 2 TYPE; SCREENS CHANGED YES / NO
	MORN	DAY	EVE
TOP	110 / 84		
MIDDLE	110 / 84		
BOTTOM	110 / 84		

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 — YEAR 2003 — MONTH 3 — DAY 11
OPERATOR: ANADARKO CANADA ENERGY — CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK — RIG NO: 15
PROVINCE: N.W.T. — CAMP: X YES / NO — RIG SAFETY DAYS: 816

MORNING TOUR

BHA
NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	0.77
5	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	156	36.24
1	X.O.	156	0.91
6	H.W.D.P.	130	55.61
	D.P. STANDS		
3	D.P. SINGLES		28.33
	KELLY DOWN		10.00
	TOTAL		212.00
	WT. OF D.C.		17
	WT. OF STRING		18

BIT RECORD
BIT NO.	1
SIZE	311.2
IADC CODE	
MANUFACTURER	SMITH
TYPE	XGGC
SERIAL NO.	RR0276
JETS	14.3 14.3 / 15.9 19.2
DEPTH OUT	212.00
DEPTH IN	0.00
TOTAL M DRILLED	212.00
TOTAL HRS RUN	21.00

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (M)

MUD RECORD
MUD TYPE: X WATER BASED / OIL BASED

TIME	200	400	530
DENSITY (KG/M3)	1130	1125	1125
FUNNEL VISCOSITY	51	54	64
FLUID LOSS (cm3)			
pH	10.0	10.0	9.5
PVT	26.00	26.40	26.20

MUD MATERIALS ADDED
PRODUCT	AMOUNT	UNIT
DETERGENT	1	PAILS
SAPP	1	SX
CAUSTIC	1	SX
GEL	15	SX

SOLIDS CONTROL
	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
DESILTER				
CENTRIFUGE	8.00	1130	1125	1740

METRES DRILLED
FROM	TO	D-R-C	RPM	WOB
186.00	212.00	D	8	170

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6200	152.0	110	152.0	110

REDUCED PUMP SPEED: @ / @

DEVIATION SURVEYS
DEPTH (M)	DEVIATION	DIRECTION
173.00	1.00	
192.00	0.25	

DRILLER SIGNATURE: LINUS BOIRE

TIME LOG
FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	15	0.25	10	DEV. SURVEY @ 173 M
15	345	3.50	2	DRILL F/186 M- 205 M
345	400	0.25	7	RIG SERVICE
400	415	0.25	10	DEV. SURVEY @ 192 M
415	500	0.75	2	DRILL F/205 M- 212 M
500	530	0.50	5	COND MUD & CIRC
530	800	2.50	6	TRIP OUT BIT HOLE TIGHT PUMP OUT SINGLES F/160M TO 110M
800				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 X5=120 L
WT BELOW JARS=13000 ROTATING HRS=74.25

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430	38		0

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	8.00	LB
DERRICK HAND		ERNIE LAFLEUR	8.00	EL
MOTOR HAND		TONY OGILVIE	8.00	TO
FLOOR HAND		BLAIR BAYLIS	8.00	BB
FLOOR HAND		BASSIM KADRI	8.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 18

DAY TOUR

BHA
NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	0.77
5	D.C.	156	74.75
1	JAR	165	5.07
4	D.C.	156	36.24
1	X.O.	156	0.91
6	HWDP	130	55.61
3	D.P. STANDS		56.66
	D.P. SINGLES		
	KELLY DOWN		9.67
	TOTAL		240.00
	WT. OF D.C.		17
	WT. OF STRING		18

BIT RECORD
BIT NO.	1	2
SIZE	311.0	311.0
IADC CODE		
MANUFACTURER	SMITH	SMITH
TYPE	XGGC	X1CXP
SERIAL NO.	RR0276	J26052
JETS	14.3 14.3 / 15.9 19.2	15.9 15.9 / 15.9
DEPTH OUT	212.00	240.00
DEPTH IN	0.00	212.00
TOTAL M DRILLED	212.00	28.00
TOTAL HRS RUN	21.00	2.00

CUTTING STRUCTURE
TI	To	MDC	LOC	BRG	GAGE	ODC	REASON PULLED	TOTAL RUN M/HR
7	7	FC	A	4	1.16	FC	PR	10.00

HOLE CONDITION
HOLE DRAG	0
TORQUE AT BOTTOM	0
FILL ON BOTTOM (M)	4.00

MUD RECORD
MUD TYPE: X WATER BASED / OIL BASED

TIME	1130	1315
DENSITY (KG/M3)	1130	1130
FUNNEL VISCOSITY	75	75
FLUID LOSS (cm3)		
pH	9.0	9.5

MUD MATERIALS ADDED: PRODUCT / AMOUNT / UNIT

SOLIDS CONTROL
	HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
DESILTER				
CENTRIFUGE	8.00	1140	1130	1800

METRES DRILLED
FROM	TO	D-R-C	RPM	WOB
212.00	240.00	D	170	8

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
7900	152.0	110	152.0	110

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEYS
DEPTH (M)	DEVIATION	DIRECTION
229.00	0.75	

DRILLER SIGNATURE: MARTY SHERWOOD

TIME LOG
FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	6	WIPER TRIP TIGHT HOLE f/ 89m - 50m LAY OUT 2 D.C.
830	845	0.25	7	RIG SERVICE
845	915	0.50	6	MAKE UP BIT RUN IN HOLE
915	1115	2.00	3	WASH f/ 70m - 212m 3m OF FILL
1115	1315	2.00	2	DRILL 311mm HOLE f/ 212m - 240m
1315	1345	0.50	5	CIRCULATE HOLE CLEAN
1345	1400	0.25	10	DEV. SURVEY
1400	1600	2.00	6	HOIST TIGHT HOLE PUMP OUT SINGLES f/ 240m - 79m

STRAP = 201.78m — CHECK LEL LEVELS IN ALL
TALLY = 202m — CONFINED SPACES OK G.W.
DIFF. = .22m

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS
WT. BELOW JARS = 13,000 DAN. TOTAL ROTATING HRS = 78.25

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	420	38	BACK REAMING	

DAY TOUR FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		MARTY SHERWOOD	12.00	MS
DERRICK HAND		KURT SAMUEL	12.00	KS
MOTOR HAND		SCOTT BODIN	12.00	SB
FLOOR HAND		RYAN HANSON	12.00	RH
FLOOR HAND		SCOTT BLACK	12.00	SB
WELL SITE COORDINATOR		GARY WILLIAMS	12.00	GW

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 18

EVENING TOUR

BHA
NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	0.77
5	DC	156	74.75
1	JAR	165	5.07
4	DC	156	36.24
1	XO	156	0.91
6	HWDP	130	55.61
3	DP STANDS		56.66
	DP SINGLES		
	KELLY DOWN		9.67
	TOTAL		240.00
	WT. OF D.C.		17
	WT. OF STRING		18

BIT RECORD
BIT NO.	2
SIZE	311.0
IADC CODE	
MANUFACTURER	SMITH
TYPE	X1CXP
SERIAL NO.	J26052
JETS	15.9 15.9 / 15.9
DEPTH OUT	240.00
DEPTH IN	212.00
TOTAL M DRILLED	28.00
TOTAL HRS RUN	2.00

CUTTING STRUCTURE: TI | To | MDC | LOC | BRG | GAGE | ODC | REASON PULLED | TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG; TORQUE AT BOTTOM; FILL ON BOTTOM (M)

MUD RECORD
MUD TYPE: X WATER BASED / OIL BASED

TIME	1900	2130
DENSITY (KG/M3)	1110	1130
FUNNEL VISCOSITY	60	95
FLUID LOSS (cm3)		
pH	8.5	9.5

MUD MATERIALS ADDED
PRODUCT	AMOUNT	UNIT
CARBONOX	1	SX
BARAZAN D	2	SX
GEL	22	SX
CAUSTIC	1	SX

SOLIDS CONTROL: DESILTER / CENTRIFUGE — HOURS RUN / INTAKE DENSITY (KG/M3) / OVER FLOW DENSITY / UNDER FLOW DENSITY

METRES DRILLED
FROM	TO	D-R-C	RPM	WOB

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
8000	152.0	110	152.0	110

REDUCED PUMP SPEED: @ / @

DEVIATION SURVEYS: DEPTH (M) / DEVIATION / DIRECTION

DRILLER SIGNATURE: LINUS BOIRE

TIME LOG
FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	1630	0.50	6	HOIST f/ 79m - SURFACE
1630	1700	0.50	6	RUN IN TO 79m
1700	1815	1.25	3	WASH f/ 79m - 240m 7m OF FILL
1815	2115	3.00	5	CIRCULATE HOLE CLEAN AND CONDITION UP
2115	2230	1.25	6	BLOW KELLY TRIP OUT OF HOLE TO RUN CSG
2230	2245	0.25	21	SAFETY MTG.
2245	2400	1.25	12	RIG UP TO AND RUN CSG

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 X5 = 120 L
WT. BELOW JARS 13,000 DAN ROTATING HRS = 79.5

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430	20	RUNNING CSG	0

EVENING TOUR FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES
DRILLER		LINUS BOIRE	4.00	LB
DERRICK HAND		ERNIE LAFLEUR	4.00	EL
MOTOR HAND		TONY OGILVIE	4.00	TO
FLOOR HAND		BLAIR BAYLIS	4.00	BB
FLOOR HAND		BASSIM KADRI	4.00	BK

RATE SCHEDULE: X REGULAR / REPAIR / INVERT
CREW SAFETY DAYS: 18

LICENCE NO	WELL NAME & NO.
1987	ANADARKO ARROWHEAD RIVER J-74

OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	AKITA DRILLING LTD.
SURFACE LOCATION	UNIQUE ID
LA 60:33:35:4N/LO 123:58:53:1W	300J7404G122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
BRIAN PREECE	LEN SAWCHUK

DAILY CHECKS

(1) Daily Walk Around Inspection
(2) Detailed Inspection - Weekly (Using Check List)
(3) H2S Signs Posted if Required
(4) Well Licence & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOPs- Flare Lines & Degasser Lines

(1) Rig Site Health & Safety Meeting (one/crew/month)
(2) CAODC Rig Safety Inspection Checklist (one/rig/month)
(3) Mast Inspection before Raising or Lowering
(4) Crown Saver Checked — LS
(5) Motor Kills Checked

YEAR 2003 MONTH 3 DAY 10 — RIG NO 15

TEMPERATURE -22 — CURRENT CONDITIONS — WIND DIRECTION N.W. — ROAD CONDITION SNOW

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)

DC/DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT O.D.	TYPE THREAD	NO. of JOINTS	PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
102	20.83	E	61	126	4 FH	90	F-650	EMSCO	203
102	41.64	HWDP	61	126	4 FH	20	F-650	EMSCO	203
152	122.91	DC	52	152	4.5 XH	16			

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR. WORK	SAFETY MEETING	WORK TIGHT HOLE	TOTALS
MORN	3.50	3.75								0.25					0.25						0.25		8.00
DAY		5.75				0.50	0.25			0.50												1.00	8.00
EVE		7.25					0.25			0.50													8.00
TOTAL	3.50	16.75				0.50	0.50			1.25					0.25						0.25	1.00	24.00

NO. TYPE	1 CAGLE	TYPE 2	MORN	DAY	EVE
SCREENS CHANGED	YES [ ]	NO [ ]			
TOP	110	84			
MIDDLE	110	84			
BOTTOM	110	84			

DRILLING CREW PAYROLL DATA

WELL NAME & NO: ANADARKO ARROWHEAD RIVER J-74 — YEAR 2003 MONTH 3 DAY 10
OPERATOR: ANADARKO CANADA ENERGY — CONTRACTOR: AKITA DRILLING LTD.
RIG MANAGER: LEN SAWCHUK — RIG NO 15
PROVINCE: N.W.T. — CAMP [X] YES [ ] NO — RIG SAFETY DAYS 815

MORNING TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB		0.77
1	X O.		0.91
3	D.C.		28.44
	D.P. STANDS		
	D.P. SINGLES		
	KELLY DOWN		12.84
	TOTAL		43.28
	WT. OF D C		7
	WT. OF STRING		7

BIT RECORD

BIT NO.	1
SIZE	311.2
IADC CODE	
MANUFACTURER	SMITH
TYPE	XGGC
SERIAL NO	RR0276
JETS	14.3 14.3 / 15.9 19.2
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	43.00
TOTAL HRS RUN	3.75

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN MAIN

HOLE CONDITION: HOLE DRAG — TORQUE AT BOTTOM — FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: [ ] WATER BASED [ ] OIL BASED

TIME	230	600
DENSITY (KG/M3)	1010	1030
FUNNEL VISCOSITY	43	39
FLUID LOSS (cm3)		
pH	10.0	10.0

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
GEL	80	SX
CAUSTIC	1	SX
SAPP	2	SX
SODA ASH	1	SX
DETERGENT	1	PAILS

SOLIDS CONTROL — DESILTER / CENTRIFUGE: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
0.00	43.00	D	170	3

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
2100	152.0	110	152.0	110

REDUCED PUMP SPEED: @ — @

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
30.00	0.25	

DRILLER SIGNATURE: EUGENE OROM

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	330	3.50	1	NIPPLE UP DEVERTER & RIG TO SPUD
330	345	0.25	21	SAFETY MTG. PER SPUD
345	400	0.25	15	TEST DEVERTER
400	745	3.75	2	DRILL 311.0 mm HOLE F / TO 43
745	800	0.25	10	DEV. SURVEY
800				

NOTES: FUNCTION CROWN SAVER
BLOW BOILER DOWN 3 TIMES = 90 LITERS

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	400	10	PRE SPUD	

MORNING TOUR FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		EUGENE OROM	8.00		EO
DERRICK HAND		DALLAS BAITON	8.00		DB
MOTOR HAND		CHRIS NICOLSON	8.00		CN
FLOOR HAND		RON DUSOMME	8.00		RD
FLOOR HAND		BERNIE HALLOCK	8.00		BH

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 17

DAY TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	0.77
8	D.C.	156	74.75
1	JAR	165	5.07
2	D.C.	156	18.03
1	X.O.	156	0.91
	D.P. STANDS		
	D.P. SINGLES		
	KELLY DOWN		12.15
	TOTAL		112.00
	WT. OF D C		13
	WT. OF STRING		13

BIT RECORD

BIT NO.	1
SIZE	311.2
IADC CODE	
MANUFACTURER	SMITH
TYPE	XGGC
SERIAL NO	RR0276
JETS	14.3 14.3 / 15.9 19.2
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	112.00
TOTAL HRS RUN	9.50

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN MAIN

HOLE CONDITION: HOLE DRAG — TORQUE AT BOTTOM — FILL ON BOTTOM (M)

MUD RECORD — MUD TYPE: [X] WATER BASED [ ] OIL BASED

TIME	900	1200	1500
DENSITY (KG/M3)	1040	1080	1110
FUNNEL VISCOSITY	45	48	53
FLUID LOSS (cm3)			
pH	10.0	10.0	9.5
PVT	26.10	24.50	27.20

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
DETERGENT	3	PAILS
GEL	16	SX
BARAZAN D	1	SX
SAPP	1	SX

SOLIDS CONTROL — DESILTER / CENTRIFUGE: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
43.00	112.00	D	180	6

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
4000	152.0	110	152.0	110

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
57.00	0.50	
90.00	0.75	

DRILLER SIGNATURE: LINUS BOIRE

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	830	0.50	6	TRIP OUT FOR MUD RING
830	915	0.75	2	DRILL F/43 M-61 M
915	1015	1.00	22	WORK PIPE (GRAVEL)
1015	1100	0.75	2	DRILL F/61 M- 70 M
1100	1115	0.25	7	RIG SERVICE
1115	1130	0.25	10	DEV. SURVEY @ 57 M
1130	1300	1.50	2	DRILL F/ 70 M- 103 M
1300	1315	0.25	10	DEV. SURVEY @ 90 M
1315	1600	2.75	2	DRILL F/103 M-112 M
1600				

NOTES: FUNCTION CROWN SAVER
BOILER BLOW DOWN 4 XS= 120 L
WT BELOW JARS- 13000, JAR HRS=62.75

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	430		ELECTRICAL OUTLETS	0

DAY TOUR FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		LINUS BOIRE	8.00		LB
DERRICK HAND		ERNIE LAFLEUR	8.00		EL
MOTOR HAND		TONY OGILVIE	8.00		TO
FLOOR HAND		BLAIR BAYLIS	8.00		BB
FLOOR HAND		BASSIM KADRI	8.00		BK
WELL SITE COORDINATOR		GARY WILLIAMS	12.00		GW

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 17

EVENING TOUR

NO.	BIT	O.D.	LENGTH
1	BIT		0.32
1	BIT SUB	156	0.77
8	D C	156	74.75
1	JAR	165	5.07
4	D C	156	36.24
1	X O	156	0.91
6	H W D P	130	55.61
	D P STANDS		
	D P SINGLES		
	KELLY DOWN		12.33
	TOTAL		186.00
	WT. OF D C		15
	WT. OF STRING		17

BIT RECORD

BIT NO	1
SIZE	311.2
IADC CODE	
MANUFACTURER	SMITH
TYPE	XGGC
SERIAL NO	RR0276
JETS	14.3 15.9 / 14.3 19.2
DEPTH OUT	
DEPTH IN	0.00
TOTAL M DRILLED	43.00
TOTAL HRS RUN	16.75

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN MAIN

HOLE CONDITION: HOLE DRAG 0 — TORQUE AT BOTTOM 0 — FILL ON BOTTOM (M) 0.00

MUD RECORD — MUD TYPE: [X] WATER BASED [ ] OIL BASED

TIME	1600	2000	2200
DENSITY (KG/M3)	1150	1130	1130
FUNNEL VISCOSITY	50	60	60
FLUID LOSS (cm3)			
pH	9.0	10.0	9.5

MUD MATERIALS ADDED

PRODUCT	AMOUNT	UNIT
DETERGENT	2	PAILS

SOLIDS CONTROL — DESILTER: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CENTRIFUGE

HOURS RUN	INTAKE DENSITY (KG/M3)	OVER FLOW DENSITY	UNDER FLOW DENSITY
8.00	1140	1130	1850

METRES DRILLED

FROM	TO	D-R-C	RPM	WOB
112.00	186.00	D	180	7

CIRCULATION PRESSURE kPa	PUMP NO. 1 LINER SIZE	SPM	PUMP NO. 2 LINER SIZE	SPM
6000	152.0	110	152.0	110

REDUCED PUMP SPEED: @ 0 @

DEVIATION SURVEYS

DEPTH (M)	DEVIATION	DIRECTION
117.00	0.25	
145.00	0.25	

DRILLER SIGNATURE: MARTY SHERWOOD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	1615	0.25	7	RIG SERVICE
1615	1830	2.25	2	DRILL 311mm HOLE f/ 112m - 130m
1830	1845	0.25	10	DEV. SURVEY
1845	2100	2.25	2	DRILL 311mm HOLE f/ 130m - 158m
2100	2115	0.25	10	DEV. SURVEY
2115	2400	2.75	2	DRILL 311mm HOLE f/ 158m - 186m

CHECK LEL LEVELS IN ALL CONFINED SPACES OK GW

NOTES: CHECK CROWN SAVER DEADMAN CLAMP & BRAKE LINKAGE
BLOW BOILER DOWN 3 TIMES = 90 LITERS
WT. BELOW JARS 13,000 DAN ROTATING HRS = 70 HRS
REVIEW J.S.A. ON DRIFTING CASING

HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
8.00	10.0	400	17	HOUSE KEEPING	

EVENING TOUR FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	NO
DRILLER		MARTY SHERWOOD	8.00		MS
DERRICK HAND		KURT SAMUEL	8.00		KS
MOTOR HAND		SCOTT BODIN	8.00		SB
FLOOR HAND		RYAN HANSON	8.00		RH
FLOOR HAND		SCOTT BLACK	8.00		SB

RATE SCHEDULE [X] REGULAR [ ] REPAIR [ ] INVERT
CREW SAFETY DAYS: 17

LICENCE NO	WELL NAME & NO.
1987	ANADARKO ARROWHEAD RIVER J-74
OPERATOR	CONTRACTOR
ANADARKO CANADA ENERGY	AKITA DRILLING LTD.
SURFACE LOCATION	UNIQUE ID
LA 60:33:35:4N/LO 123:58:53:1W	300J7404G122450
SIGNATURE OF OPERATOR'S REPRESENTATIVE	SIGNATURE OF CONTRACTOR'S RIG MANAGER
BRIAN PREECE	LEN SAWCHUK

DAILY CHECKS

	OPER. INIT.	CONTR. INIT.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection - Weekly (Using Check List)		
(3) H2S Signs Posted if Required		
(4) Well Licence & Sitdt Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Performed		
(7) Visually Inspect BOPs, Flare Lines & Degasser Lines		
(1) Rig Site Health & Safety Meeting (one/crew/month)		
(2) CAODC Rig Safety Inspection Checklist (one/rig/month)		
(3) Meet Inspection before Raising or Lowering		LB
(4) Crown Saver Checked		LB
(5) Motor Kills Checked		

YEAR 2003 MONTH 3 DAY 9
RIG NO. 15
RIG BOILER
TEMPERATURE -14
CURRENT CONDITIONS
ROAD DIRECTION CALM
ROAD CONDITION SNOW

DC / DP SIZE	MASS	GRADE	MINIMUM I.D.	T. JNT O.D.	TYPE THREAD	NO. of JOINTS
102	20.83	E	61	126	4 FH	90
102	41.64	HWDP	61	126	4 FH	20
152	122.91	DC	52	152	4.5 XH	16

O.D. (mm)	MIN I.D. (mm)	kg/m	MAKE	GRADE	NO. of JOINTS	TOTAL LENGTH	KB TO CSG HEAD	SET AT (m)

PUMP TYPE	PUMP MANUFACTURER	STROKE LENGTH
F-650	EMSCO	203
F-650	EMSCO	203

PASON DATAHUB
Akita 15
Job 20
AFE 3
CDN 3422-2-011204

CAODC

	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SQUEEZE CEMENT	FISHING	DIR WORK	SAFETY MEETING	RIG MOVE	DIVERTER	TOTALS
MORN	8.00																							8.00
DAY	0.50																				0.25	7.25		8.00
EVE	4.50													1.50									2.00	8.00
TOTAL	13.00													1.50							0.25	7.25	2.00	24.00

NO.	TOTAL	TYPE	TYPE
	1	CRAGLE	2
	SCREENS CHANGED	YES / NO	
	TOP	110	84
	MIDDLE	110	84
	BOTTOM	110	84

	MORN	DAY	EVE

DRILLING CREW PAYROLL DATA

WELL NAME & NO	YEAR	MONTH	DAY
ANADARKO ARROWHEAD RIVER J-74	2003	3	9
OPERATOR: ANADARKO CANADA ENERGY	CONTRACTOR: AKITA DRILLING LTD.		
RIG MANAGER: LEN SAWCHUK	RIG NO: 15		
PROVINCE: N.W.T.	CAMP: X YES / NO	RIG SAFETY DAYS: 814	

MORNING TOUR — FROM 0 TO 800

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		EUGENE OROM	8.00		EO
DERRICK HAND		DALLAS BAITON	8.00		DB
MOTOR HAND		CHRIS NICOLSON	8.00		CN
FLOOR HAND		RON DUSOMME	8.00		RD
FLOOR HAND		BERNIE HALLOCK	8.00		BH

RATE SCHEDULE: X REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS: 16

MORNING TOUR

NO.	BIT	O.D.	LENGTH

D.P. STANDS
D.P. SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD: BIT NO., SIZE, IADC CODE, MANUFACTURER, TYPE, SERIAL NO., JETS, DEPTH OUT, DEPTH IN, TOTAL M DRILLED, TOTAL HRS RUN

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG, TORQUE AT BOTTOM, FILL ON BOTTOM (M)

MUD RECORD: MUD TYPE ☐ WATER BASED ☐ OIL BASED; TIME; DENSITY (KG/M3); FUNNEL VISCOSITY; FLUID LOSS (cm3); pH

MUD MATERIALS ADDED: PRODUCT, AMOUNT, UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CIRCULATION PRESSURE kPa; PUMP NO. 1: LINER SIZE, SPM; PUMP NO. 2: LINER SIZE, SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M), DEVIATION, DIRECTION

METRES DRILLED: FROM, TO, D-R-C, RPM, WOB

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
0	800	8.00	1	PREPARE FOR RIG MOVE ;CLEAN RIG ;WAIT ON TRUCKS

NOTES: CHANGED OIL IN ROTARYTABLE

DRILLER SIGNATURE	HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
EUGENE OROM	8.00	10.0	400		RIGING OUT	

DAY TOUR — FROM 800 TO 1600

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		LINUS BOIRE	12.00		LB
DERRICK HAND		ERNIE LAFLEUR	12.00		EL
MOTOR HAND		TONY OGILVIE	12.00		TO
FLOOR HAND		BLAIR BAYLIS	12.00		BB
FLOOR HAND		BASSIM KADRI	12.00		BK
WELL SITE COORDINATOR		GARY WILLIAMS	12.00		GW

RATE SCHEDULE: X REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS: 16

DAY TOUR

NO.	BIT	O.D.	LENGTH

D.P. STANDS
D.P. SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD: BIT NO., SIZE, IADC CODE, MANUFACTURER, TYPE, SERIAL NO., JETS, DEPTH OUT, DEPTH IN, TOTAL M DRILLED, TOTAL HRS RUN

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG, TORQUE AT BOTTOM, FILL ON BOTTOM (M)

MUD RECORD: MUD TYPE ☐ WATER BASED ☐ OIL BASED; TIME; DENSITY (KG/M3); FUNNEL VISCOSITY; FLUID LOSS (cm3); pH

MUD MATERIALS ADDED: PRODUCT, AMOUNT, UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CIRCULATION PRESSURE kPa; PUMP NO. 1: LINER SIZE, SPM; PUMP NO. 2: LINER SIZE, SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M), DEVIATION, DIRECTION

METRES DRILLED: FROM, TO, D-R-C, RPM, WOB

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
800	815	0.25	21	SAFETY MTG.
815	1030	2.25	22	LOAD OUT RIG AND RENTAL EQUIPMENT@ M-35
1030	1530	5.00	22	SPOT RIG AND RENTAL EQUIPMENT @ J-74
1530	1600	0.50	1	RIG UP

NOTES
****AFE 400797 ****
BOILER FIRED @ 16 00 hrs
VISUAL INSPECTION OF DEREK O.K. LS

DRILLER SIGNATURE	HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
LINUS BOIRE	0.00				RIG MOVE	0

EVENING TOUR — FROM 1600 TO 2400

CREW	SOC INS. NO.	NAME	HRS	INJURIES YES	INJURIES NO
DRILLER		EUGENE OROM	4.00		EO
DERRICK HAND		DALLAS BAITON	4.00		DB
MOTOR HAND		CHRIS NICOLSON	4.00		CN
FLOOR HAND		RON DUSOMME	4.00		RD
FLOOR HAND		BERNIE HALLOCK	4.00		BH

RATE SCHEDULE: X REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS: 16

EVENING TOUR

NO.	BIT	O.D.	LENGTH

D.P. STANDS
D.P. SINGLES
KELLY DOWN
TOTAL
WT. OF D.C.
WT. OF STRING

BIT RECORD: BIT NO., SIZE, IADC CODE, MANUFACTURER, TYPE, SERIAL NO., JETS, DEPTH OUT, DEPTH IN, TOTAL M DRILLED, TOTAL HRS RUN

CUTTING STRUCTURE: TI, TO, MDC, LOC, BRG, GAGE, ODC, REASON PULLED, TOTAL RUN M/HR

HOLE CONDITION: HOLE DRAG, TORQUE AT BOTTOM, FILL ON BOTTOM (M)

MUD RECORD: MUD TYPE ☐ WATER BASED ☐ OIL BASED; TIME; DENSITY (KG/M3); FUNNEL VISCOSITY; FLUID LOSS (cm3); pH

MUD MATERIALS ADDED: PRODUCT, AMOUNT, UNIT

SOLIDS CONTROL

DESILTER: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CENTRIFUGE: HOURS RUN, INTAKE DENSITY (KG/M3), OVER FLOW DENSITY, UNDER FLOW DENSITY

CIRCULATION PRESSURE kPa; PUMP NO. 1: LINER SIZE, SPM; PUMP NO. 2: LINER SIZE, SPM

REDUCED PUMP SPEED

DEVIATION SURVEYS: DEPTH (M), DEVIATION, DIRECTION

METRES DRILLED: FROM, TO, D-R-C, RPM, WOB

TIME LOG

FROM	TO	ELAPSED TIME	CODE	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
1600	2030	4.50	1	RIG UP
2030	2230	2.00	23	WELD DIVERTER FLANGE
2230	2400	1.50	14	NIPPLE UP DIVERTER

NOTES

DRILLER SIGNATURE	HRS RUN	BOILER pH	STACK TEMP	MAXIMUM EXPERIENCED HOOK LOAD	SAFETY TOPIC	MACP
EUGENE OROM	8.00				NIPPLE UP DIVERTER	