

**APPROVAL
TO DRILL A
WELL**

National Energy
Board



Office national
de l'énergie

NATIONAL ENERGY BOARD
Commission nationale 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 SW ARROWHEAD M-35
 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: M Section: 35 Grid: 60 30 123 00
 Coordinates: Lat.: 60.24.57.4 N Long.: 123.07.23.0 W
 Area: ARROWHEAD NWT Field / Pool: _____
 Elevation-KB/RT: 351.0 (ASL) GL / Seafloor: 346.26
 Approx. Spud Date: FEBRUARY 21, 2003 Est. Days on Location: 7
 Anticipated Total Depth: 525 m Target: CRETACEOUS 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/DI/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	+/- 525 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 _____

Title: DRILLING MANAGER

Name: Dave Brown

Responsible Officer:

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: _____

File: 9211-A069-6-4

WD: 1989

UWI: 300M356030123000

Chief Conservation Officer

Canada

WELL
TERMINATION
RECORD (with
attachment)



WELL TERMINATION RECORD

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

Well Name: ALTAIR S.W. ARROWHEAD II - Area: F. LIARDGrid Area: _____ Field / Pool: FINKE HInterest 100% Final Lat 60°24'57.4"N Long: 123°09'13.0"WDrilling KB - 351m Elevations: (ASL) GL Seafloor 346.28mSpud Date: 03/03/03 06:15 R.R.: 08/03/03 00:00 Total Depth: _____

O.D. (mm)	Weight (kg/m)	Grade	Depth Set (m KB)	Cement (m³)
219	35.7	J55 ST&C	201	11.3 0:1:0 G 73% CaCl ₂
139.7	20.8	J55 ST&C	736	18.0 G (RIMMIX II)

PLUGGING PROGRAM

Approval of the following program was obtained by (person) n/c

from (person) _____ of the _____

by means of _____ on _____

Type of Plug	Interval (m KB)	Felt	Cement (m³)
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WELL WAS LEFT WITH PRODUCTION CASING RUN TO
FTD & CEMENTED. PRESSURE TESTED TO 13.5 MPa FOR
10 MINS. SUSPENDED TO MOVE SERVICE RIS IN
TO RUN COMPLETION

Lost Circulation/Overpressure Zones: 111m - 125m lost circ. recovered w/ LCM.Equipment left on Seafloor (Describe): n/c

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

Cores: Type: 1/1 Interval: _____Other Downhole Completion/Suspension n/c

CERTIFICATION

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

Signed: Aidan Campbell Title: DRILLING ENGINEERName: AIDAN CAMPBELL Date: 18/03/03Company: ANADARKO CANADAWell Status Acknowledged by: [Signature]Suspended ☒

Chief Conservation Officer

Completed ☐Date: Mar 19/03Abandoned ☐File: 9211-A069-6-1UWI: 300M35603012300 WID: 1989

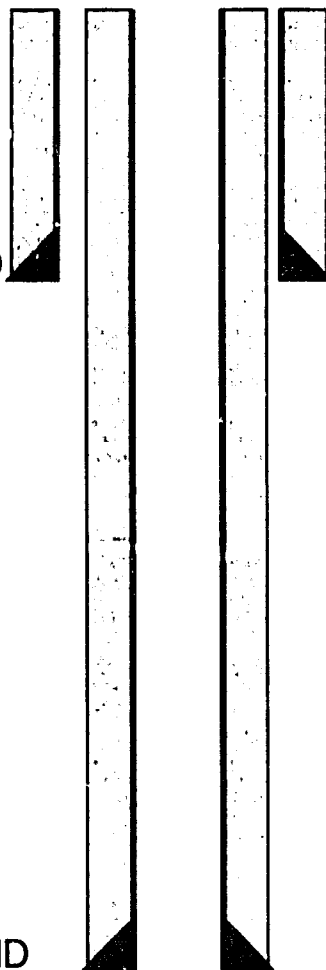
SW Arrowhead M-35

Suspended Well Condition

Surface Casing –
219mm, 35.7kg/m,
K55, ST&C @ 201mMD

Production Casing –
139.7mm, 20.8kg/m,
J55, ST&C @ 736mMD

Both strings are cemented to
surface and the production string
was pressure tested to 13.5MPa



APPROVAL TO
ALTER
CONDITION OF
A WELL

National Energy
Board



Office national
de l'énergie

APPROVAL TO ALTER CONDITION OF A WELL

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

Well Name: Anadarko S.W. Arrowhead M-35 Area: Ft. Liard
Operator: Anadarko Canada Energy Ltd Contractor: _____
Drilling Rig or Unit: _____ Depth: 736 m KB (TD)
Coordinates: Lat 60° 24' 57.4" N Long: 123° 07' 23.0" W
Date ADW Issued Feb 20, 2003 Date of last Operation: 08/03/03
Elevation-KB/RT: KB 351.0m (ASL) GL / Seafloor: 346.28m

TYPE OF OPERATION

INITIAL COMPLETION, STIMULATION AND
WELL TESTING.

SUMMARY OF PROPOSED OPERATIONS

- MOVE ON SERVICE RIG (CONCORD #4)
- RUN BIT AND SCRAPER TO PBTD
- CBL/VOL
- PERFORATE THE CHINKEH SANDSTONE
(587-591 m KB)
- SWAB TO EVALUATE
- FRAC w/ 10 tonnes 20/40 Sand in
GELLED CO₂/METHANOL IF REQUIRED
- CONDUCT CLEAN-UP + 3 DAY FLOW TEST.

Signed: D. Salahub

Responsible Officer

Title: STAFF PRODUCTION Engineer

Name: DAVID SALAHUB

Company: ANADARKO CANADA

Date: MARCH 20/03

Phone: (403) 231-0577

APPROVAL

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

Signed: J. M. Baker

Chief Conservation Officer

Date: March 20/03

Current Well Status

Suspended ☒

Completed ☐

Abandoned ☐

File: 9211-A069-6-4

UWI: 300M356030123001

WID: 1989

END OF WELL REPORT



NEB COPY

Anadarko Southwest Arrowhead M-35 – End of Well Report

60° 24' 57.4" N, 123° 07' 23.0" W

May 2003

Table of Contents

- 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 Southwest Arrowhead M-35 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.

The well was tested unstimulated from the Chinkeh at continually improving rates to 11.5 E3m3/d at 420 kPa with final (decreasing) wgr of 190 bbl/MMcf.

General Well Data

Wellname: Anadarko Southwest Arrowhead M-35

Key Drilling Data

Rig:	Akita #15
Ground Elevation:	346.28m
KB	351.0m
TD	737m KB
Spud	Mar 3, 2003
RR	Mar 9, 2003 (Completion run with rig)
Surface Hole:	311mm
Surface Casing	219mm @ 201m KB
Production Casing	139.7mm @ 737m KB
Terminal Hole	200mm, cased hole
Mud	gel chem

Key Completion Data

Completion Date	Mar 21, 2003 – Mar 27, 2003
Production String	73.0mm tubing
Stimulations	none
Production Tests	36 hour unstimulated main flow 3.8 E3m3/d at 220 kPa at start 11.5 E3m3/d at 420 kPa, *wgr 190 bbl/MMcf at end
Gas Analysis	pending (H2S = 0 field)
Water Analysis	pending (9,000ppm field)

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

Well	Arrowhead M35
Sample Frequency	5 meters (200 m - 735 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° 24' 57.4" N, 123° 07' 23.0" W
Bottom Hole Location: 5.29mS, 4.52mW
Maximum Angle: 1.21°
Vertical Section: 6.93m
Azimuth: 220.69°

See Appendix 2 for detailed surveys and diagram.

Reservoir and Well Evaluation

Production Tests

The M35 well was drilled during March 2003. The well was drilled with gel chem mud system to a 737m TD, then cased to 736mKB with 139.7mm production casing.

Following wireline perforation (587-591mKB) on March 22, the well kicked, necessitating a 5.85m³ top kill. Once 73mm tubing was installed (packer at 574.2 mKB), the well was swabbed in after recovering 2.6m³ of fluid over 7 swabs. Bottomhole recorders were then landed at 578m, and the well left shut in overnight. The following day, the well was flowed at 0.5 E3m³/d for 2 hours, then shut in for 12 hours to record initial shut in pressures for determination of initial reservoir pressure.

The well was flowed on a 36 hour main flow, which saw the well clean up considerably from an initial condition of 3.8 Em³/d at 220 kPa to a final condition of 11.5 E3m³/d at 420 kPa. At 1.5 hours into the main flow, significant water production became evident and persisted throughout the test on a declining trend.

At the end of the test, water was being produced at 0.6 m³/hr, for a decreasing water gas ratio of 190 bbl/MMcf. The produced water was repeatedly measured as 9,000 ppm with a pH=9, which indicates it is drilling filtrate (drilling tours confirm that mud pH was maintained at 9-10), and is not formation water. Furthermore, the Chinkeh in Arrowhead exhibits formation water salinities of about 35,000 ppm.

Total volumes of 406 E3m³ and 19.3m³ water (13.5 m³ above well-killing load) were produced. There was no measured H₂S in the gas.

The well is currently shut in on buildups, and gauges are expected to be recovered in June 2003.

See Appendix 4 for production test data.

Reservoir Pressure

Bottomhole recorders will not be recovered until June 2003, so no definitive indication of reservoir pressure is available. An attempt was made to assess the range in reservoir pressure at M35 from surface pressures:

a) 'regional'

- the average formation pressure gradient from C02 and B41 (8.5 kPa/m) indicates a pressure of 5,007 kPag

b) attempted hydrostatic

- assuming 50% of the static wellbore is liquid, and using a calculated gas gradient of 0.4 kPa/m and an estimated water gradient of 10 kPa/m, a pressure of 6042 kPag is estimated.

Pressure Transient Analysis

Pressure data available June 2003.

Wireline Logging

Open hole logs previously submitted.

S.W. Arrowhead M-35

- Move in and rig up Akita #15 on M-35 location on March 2, 2003.
- Spud surface hole at 06:15 on March 3, 2003.
- Drill 311 mm surface hole, with Water Based Mud (visc. 46, pH 9.5, density 1090 kg/m³), to 201 mMD. No problems.
- Set 15 joints of 219 mm 35.7 kg/m J-55 ST&C casing with 14.8 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 206 m and perform Leak off test. Equivalent mud weight 2446 kg/m³.
- Drill 200 mm main hole, with Water Based Mud (visc. 47, pH 10, density 1070 kg/m³), to 737 mMD. Tight spots. No other problems.
- Run Gyro deviation survey.
- Run wireline to log. Run GR/AIT/CNL/LDT/BHCS/CAL.
- Set 57 joints 139.7 mm 20.8 kg/m J-55 ST&C casing with 20 tonne Thixmix II + 0.3% CFL3 + 1% CaCl₂.
- Perform casing pressure test: 13500 kPa for 10 minutes.
- Rig down and move out Akita #15 on March 9, 2003.

Casing and Cementing Report

Well Name	ANADARKO SW ARROWHEAD M-35	Well License Number	1989
Event	ORIG DRILLING 02/03/03	Well License Date	20-02-53
Objectives	EXPLORATORY DRILLING	Field	CHINKEH
Rig Name & No.	AKITA 15	Event Final TMD / TVD	737.00 m / 737.00 m
KB Elev.	351.00 m	Sidetrack KO Depth / PB Depth	0.00 m / 0.00 m
KB to GL	4.72 m	Deviation	V
		Event Final Well Plug Back Depth/PBTVD	724.11 m / 724.11 m

Component Information	Depth	Equipment Diagram	Cement Interval
42 - CASING JOINT(S) - IPSCO - 540.560 m			
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.370 m	186.78 m		
1 - CASING JOINT(S) - OPESO - 13.400 m	187.15 m		0.00 m - 201.00 m
1 - CASING FLOAT SHOE - WEATHERFORD - 0.450 m	200.55 m		
	201.00 m		
1 - PUP JOINT - IPSCO - 4.500 m	540.56 m		
13 - CASING JOINT(S) - IPSCO - 161.990 m	545.06 m		0.00 m - 737.00 m
1 - PUP JOINT - IPSCO - 4.190 m	707.05 m		
1 - CASING JOINT(S) - IPSCO - 12.510 m	711.24 m		
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.340 m	723.75 m		
1 - CASING JOINT(S) - IPSCO - 12.510 m	724.09 m		
1 - CASING FLOAT SHOE - WEATHERFORD - 0.400 m	736.60 m		
	737.00 m		

String Details

ANADARKO SW ARROWHEAD M-35

ORIG DRILLING

03/03/03

08/03/03

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	04/03/03	INSTALLED	201.0 m	201.0 m		0.0 m
PRODUCTION CASING	07/03/03	INSTALLED	737.0 m	737.0 m		0.0 m

SURFACE CASING	Status	INSTALLED	Install Date	04/03/03	String Length	201.0 m
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# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
14	CASING JOINT(S)	186.780 m	202.49 mm	219.08 mm	J55	35.72 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.370 m	202.49 mm	219.08 mm	J55	35.72 kg/m	186.78 m
1	CASING JOINT(S)	13.400 m	202.49 mm	219.08 mm	J55	35.72 kg/m	187.15 m
1	CASING FLOAT SHOE	0.450 m	202.49 mm	219.08 mm	J55	35.72 kg/m	200.55 m

PRODUCTION CASING	Status	INSTALLED	Install Date	07/03/03	String Length	737.0 m
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# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
42	CASING JOINT(S)	540.560 m	124.13 mm	139.70 mm	J55	20.83 kg/m	0.00 m
1	PUP JOINT	4.500 m	124.13 mm	139.70 mm	J55	20.83 kg/m	540.56 m
13	CASING JOINT(S)	161.990 m	124.13 mm	139.70 mm	J55	20.83 kg/m	545.06 m
1	PUP JOINT	4.190 m	124.13 mm	139.70 mm	J55	20.83 kg/m	707.05 m
1	CASING JOINT(S)	12.510 m	124.13 mm	139.70 mm	J55	20.83 kg/m	711.24 m
1	CASING FLOAT COLLAR	0.340 m	124.13 mm	139.70 mm	J55	20.83 kg/m	723.75 m
1	CASING JOINT(S)	12.510 m	124.13 mm	139.70 mm	J55	20.83 kg/m	724.09 m
1	CASING FLOAT SHOE	0.400 m	124.13 mm	139.70 mm	J55	20.83 kg/m	736.60 m

Cement Data**ANADARKO SW ARROWHEAD M-35****ORIG DRILLING****03/03/03****08/03/03**

Job Type: Drilling Date: 03/03/03 Completion Date: 08/03/03						
Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	NEAT	CLASS G	0.00 m	201.00 m	11.1 m ³
Job Type: Drilling Date: 08/03/03 Completion Date: 08/03/03						
Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	THIXMIX II	CLASS G	0.00 m	737.00 m	18.0 m ³

Survey Plan View

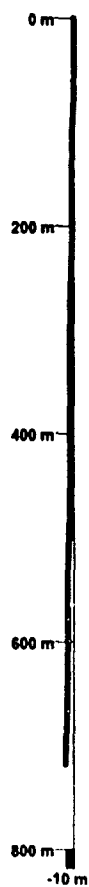
North/South



East/West

Vertical Section

TVD



Vertical Section @ 180.0 deg.

Anadarko Canada Corporation

Operations Summary Report

Page 1 of 8

Legal Well Name: ANADARKO NETLA A-68

Common Well Name: NETLA A-68

Event Name: ORIG DRILLING

Contractor Name: AKITA

Rig Name: AKITA

Start: 02/07/2002

Rig Release: 03/16/2002

Rig Number: 55

Spud Date: 02/23/2002

End: 03/16/2002

Group:

Date	From To	Hours	Code	Sub Code	Phase	Description of Operations
02/20/2002	00:00 - 00:00	24.00	01	A	MIRU	RIG MOVE 100 % RIGGED UP 50 % ,
02/21/2002	00:00 - 00:00	24.00	01	A	MIRU	RIGGING UP DIVERTER & RIG 75 % RIGGED UP, WELDING UP CRACK IN MUD TANK, LAYING MATTING ON MUD TANK SIDE OF RIG,
02/22/2002	00:00 - 22:30	22.50	01	A	MIRU	RIG UP, REPAIR ELECTRIC MOTE CONTROL BOP CABLE TO KOOMEY UNIT,
	22:30 - 23:30	1.00	06	J	MIRU	MAKE UP BHA AND PRESSURE TEST DIVERTER TO 1000 KPA, (KB TO DIVERTER FLANGE 4.12 M)
02/23/2002	23:30 - 00:00	0.50	21	A	MIRU	RIG SERVICE, SAFETY MEETING, PRESPUD MEETING,
	00:00 - 01:00	1.00	02	B	DRLSUR	SPUD AT 00.01 HOURS, DRILL 311 MM HOLE TO 29 M,
	01:00 - 01:15	0.25	07	A	DRLSUR	RIG SERVICE,
	01:15 - 04:00	2.75	06	J	DRLSUR	TRIP CHANGE BHA,
	04:00 - 09:00	5.00	02	B	DRLSUR	DRILL SURFACE HOLE FROM 29 M TO 89 M,
	09:00 - 09:30	0.50	10		DRLSUR	ACCUMULATED SURVEY TIMES,
	09:30 - 10:00	0.50	05	K	DRLSUR	CIRCULATE HOLE CLEAN,
	10:00 - 12:00	2.00	06	J	DRLSUR	TRIP CHANGE BHA,
	12:00 - 17:45	5.75	02	B	DRLSUR	DRILL SURFACE HOLE FROM 89 M TO 171 M,
	17:45 - 18:30	0.75	05	K	DRLSUR	EXTEND FLOW LINE NIPPLE,
	18:30 - 22:30	4.00	02	B	DRLSUR	DRILL SURFACE HOLE FROM 171 M TO 247 M,
	22:30 - 22:45	0.25	07	A	DRLSUR	RIG SERVICE,
	22:45 - 00:00	1.25	10		DRLSUR	ACCUMULATED SURVEY TIMES,
02/24/2002	00:00 - 10:15	10.25	02	B	DRLSUR	DRILL 311 MM HOLE FROM 247 M TO 429 M,
	10:15 - 11:45	1.50	10		DRLSUR	ACCUMULATED SURVEY TIMES,
	11:45 - 12:00	0.25	07	A	DRLSUR	RIG SERVICE,
	12:00 - 21:45	9.75	02	B	DRLSUR	DRILL 311 MM HOLE FROM 429 M TO 535 M,
	21:45 - 22:45	1.00	10		DRLSUR	ACCUMULATED SURVEY TIMES,
	22:45 - 23:45	1.00	05	K	DRLSUR	CIRCULATE CONDITION MUD, MUD CLOBBED UP
02/25/2002	23:45 - 00:00	0.25	07	A	DRLSUR	RIG SERVICE, FUNCTION DIVERTER CLOSE 14 SEC.,
	00:00 - 01:45	1.75	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE FROM 535 M TO 550 M,
	01:45 - 02:15	0.50	05	K	DRLSUR	CIRCULATE BOTTOMS UP,
	02:15 - 13:00	10.75	06	H	DRLSUR	TRIP OUT OF HOLE BACK REAM CIRULATE, (JUNK FORMATION ABOVE BIT),
	13:00 - 15:00	2.00	06	A	DRLSUR	TRIP IN BHA,
	15:00 - 15:45	0.75	09		DRLSUR	SLIP & CUT DRILLING LINE,
	15:45 - 23:15	7.50	06	A	DRLSUR	PICK UP SINGLES, REAM BRIDGES MOST OF THE WAY IN THE HOLE,
	23:15 - 23:30	0.25	07	A	DRLSUR	RIG SERVICE,
02/26/2002	23:30 - 00:00	0.50	05	A	DRLSUR	CIRCULATE CONDITION MUD,
	00:00 - 01:15	1.25	02	B	DRLSUR	DRILL 311 MM SURFACE HOLE FROM 550 M TO 560 M,
	01:15 - 01:45	0.50	05	K	DRLSUR	CIRCULATE CONDITION HOLE,
	01:45 - 02:00	0.25	10		DRLSUR	RUN SURVEY AT 551 M,
	02:00 - 06:00	4.00	06	H	DRLSUR	WIPER TRIP UP TO DC., BRIDGE AT 345 M,
	06:00 - 07:30	1.50	05	K	DRLSUR	CIRCULATE CONDITION HOLE,
	07:30 - 08:45	1.25	06	H	DRLSUR	WIPER TRIP UP TO 300 M OK,
	08:45 - 09:00	0.25	05	K	DRLSUR	CIRCULATE CONDITION HOLE,
	09:00 - 11:45	2.75	06	G	DRLSUR	TRIP OUT OF HOLE LAYDOWN 9" DC, HOLE GOOD ON TRIP OUT,
	11:45 - 17:00	5.25	12	A	DRLSUR	HELD SAFETY MEETING, RIG UP AND RUN 40 JTS OF K-55 59.5 kg/m 244.5 mm CASING
	17:00 - 18:15	1.25	05	H	DRLSUR	CIRCULATE HOLE CLEAN,
	18:15 - 22:15	4.00	12	C	DRLSUR	RUN DP CEMENT STINGER TO 538 M,
	22:15 - 23:45	1.50	05	H	DRLSUR	CIRCULATE CONDITION MUD FOR CEMENTING
02/27/2002	23:45 - 00:00	0.25	12	A	DRLSUR	HELD SAFETY MEETING, RIG TO CEMENT,
	00:00 - 01:30	1.50	12	C	DRLSUR	CEMENT 244.5 mm SURFACE CASING SHOE AT 559 M, WITH 6 m3

Operations Summary Report

Legal Well Name: ANADARKO NETLA A-68

Common Well Name: NETLA A-68

Spud Date: 02/23/2002

Event Name: ORIG DRILLING

Start: 02/07/2002

End: 03/16/2002

Contractor Name: AKITA

Rig Release: 03/16/2002

Group:

Rig Name: AKITA

Rig Number: 55

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
02/27/2002	00:00 - 01:30	1.50	12	C	DRLSUR	OF 2.27% SAPP PREFLUSH, 31.7 TONNES OF G-1-0 CLASS G CEMENT, 1% CaCl ₂ , 24 m3 SLURRY WT 1900 kg/m3 DISPLACE DP W/ 3.20 m3 WATER,
	01:30 - 03:30	2.00	05	K	DRLSUR	DISPLACE MUD OUT OF CASING TO WATER,
	03:30 - 04:15	0.75	06	G	DRLSUR	RIG DOWN IMPORT TOOLS PACK OF HEAD,
	04:15 - 05:45	1.50	05	F	DRLSUR	BLOW MUD LINES & KELLY RAT HOLE W/ STEAM,
	05:45 - 08:45	3.00	06	F	DRLSUR	TRIP OUT CEMENT STINGER,
	08:45 - 15:00	6.25	14	A	DRLSUR	NIPPLE DOWN DIVERTER,
	15:00 - 22:45	7.75	14	A	DRLSUR	CUT CONDUCTOR CLEAN OUT CELLAR WELL ON CASING BOWL(TEST WELD TO 15000 KPA OK,)
02/28/2002	22:45 - 23:00	0.25	07	A	DRLSUR	RIG SERVICE,
	23:00 - 00:00	1.00	14	A	DRLSUR	NIPPLE UP BOPS,
	00:00 - 14:00	14.00	14	A	DRLIN1	NIPPLE UP BOP STACK, CHOKE LINES, FLARE STACK LINES, TEST CASING AND BLIND RAMS TO 1400 KPA LOW 21000 KPA HIGH 10 MINS EACH, TESTED CHOKE MANIFOLD VALVES LINES REPAIRED LEAKS, 1400 KPA LOW 21000 KPA HIGH EACH,
03/01/2002	14:00 - 00:00	10.00	15	A	DRLIN1	REPAIR UPPER AND LOWER PIPE RAMS, TURN RAM BODY FOR DOOR OPENNING,
	00:00 - 14:00	14.00	08	D	DRLIN1	TEST BOPS, UPPER & LOWER PIPE RAMS, KILL & CHOKE VALVES, CHECK VALVES, CHOKE & KILL LINES, UPPER KELLY COCK, TO 1400 KPA LOW 21000 KPA HIGH 10 MINS. EACH, ANNULAR BOP TO 1400 KPA LOW 10500 KPA HIGH 10 MINS EACH, LOWER KELLY COCK WILL BE CHANGED OUT WHEN HOT SHOT ARRIVES,
03/02/2002	00:00 - 05:00	5.00	08	A	DRLIN1	WORK ON STAND PIPE VALVES,
	05:00 - 06:30	1.50	15	B	DRLIN1	TEST STANDPIPE AND VALVES TO 21000 KPA,
	06:30 - 08:30	2.00	06	J	DRLIN1	TRIP IN HOLE, JACK RIG,
	08:30 - 10:30	2.00	05	A	DRLIN1	DISPLACE HOLE TO INVERT MUD,
	10:30 - 16:15	5.75	06	J	DRLIN1	TRIP OUT CHANGE BHA,
	16:15 - 16:45	0.50	21	B	DRLIN1	HELD SAFETY MEETING, BOP DRILL, FIRE DRILL,
	16:45 - 17:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION MOTOR KILLS OK,
	17:00 - 17:45	0.75	05	A	DRLIN1	MWD SHALLOW TEST,
	17:45 - 20:00	2.25	06	J	DRLIN1	TRIP IN HOLE BREAK CIRCULATION,
	20:00 - 20:15	0.25	21	A	DRLIN1	HELD SAFETY MEETING WITH NIGHT CREW, REGARDING INVERT MUD,
03/03/2002	20:15 - 22:00	1.75	02	C	DRLIN1	DRILL OUT FLOAT COLLAR, CEMENT, SHOE TRACK, DRILL TO 565 M,
	22:00 - 23:00	1.00	05	B	DRLIN1	CIRCULATE BOTTOMS UP, DO EQUIVARIANT LEAKOFF TEST MUD WT DENSITY OF 2100 kg.m3, OK,
	23:00 - 00:00	1.00	02	H	DRLIN1	DRILL 215.9 MM HOLE FROM 560 M TO 580 M,
	00:00 - 05:15	5.25	02	H	DRLIN1	DRILL 215.9 mm HOLE FROM 580 M TO 705 M,
	05:15 - 05:30	0.25	05	J	DRLIN1	CIRCULATE CLEAN OUT FLOW LINE PLUGGED W/ SHALE,
	05:30 - 05:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION REMOTE CHOKE,
	05:45 - 14:30	8.75	02	H	DRLIN1	DRILL 215.9 mm HOLE WITH SLIDES FROM 705 M TO 857 M,
	14:30 - 14:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS CLOSE 6 SEC.,
	14:45 - 22:30	7.75	02	H	DRLIN1	DRILL 215.9 mm HOLE WITH SLIDES FROM 857 M TO 1003M,
	22:30 - 00:00	1.50	10		DRLIN1	ACCUMULATED SURVEY TIMES,
03/04/2002	00:00 - 07:15	7.25	02	H	DRLIN1	DRILL 215.9 mm HOLE WITH SLIDES FROM 1003 M TO 1090 M,
	07:15 - 07:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR BOP CLOSE IN 12 SEC.,
	07:30 - 09:00	1.50	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	09:00 - 22:15	13.25	02	H	DRLIN1	DRILL 215.9 mm HOLE WITH SLIDES FROM 1090 M TO 1321 M,
	22:15 - 22:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS, CLOSE 6 SEC.,
	22:30 - 00:00	1.50	10		DRLIN1	ACCUMULATED SURVEY TIMES,

Anadarko Canada Corporation Operations Summary Report

Legal Well Name: ANADARKO NETLA A-68

Common Well Name: NETLA A-68

Event Name: ORIG DRILLING

Contractor Name: AKITA

Rig Name: AKITA

Start: 02/07/2002

Rig Release: 03/16/2002

Rig Number: 55

Spud Date: 02/23/2002

End: 03/16/2002

Group:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
03/05/2002	00:00 - 08:00	8.00	02	H	DRLIN1	DRILL AND SLIDE FROM 1321 M TO 1447 M,
	08:00 - 08:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION REMOTE CHOKE,
	08:15 - 09:00	0.75	05	K	DRLIN1	CIRCULATE BOTTOM UP,
	09:00 - 09:45	0.75	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	09:45 - 15:00	5.25	06	A	DRLIN1	TRIP OUT OF HOLE WITH FLOW CHECKS AT 1446 M, 1350 M, 560 M, AT BHA,
	15:00 - 16:30	1.50	06	A	DRLIN1	CHANGE BIT, CHECK MWD TOOL, SET MUD MOTOR UP TO 1.83 DEGREES.,
	16:30 - 18:00	1.50	06	A	DRLIN1	TRIP INTO 590 M,
	18:00 - 18:30	0.50	10		DRLIN1	SHALLOW TEST MWD TOOL, CHANGE STRIPPER RUBBER ON KELLY,
	18:30 - 21:30	3.00	06	A	DRLIN1	TRIP IN HOLE, FILL PIPE AT 900 M,
	21:30 - 23:30	2.00	02	H	DRLIN1	DRILL & SLIDE 215.9 MM HOLE FROM 1447 M TO 1476 M,
03/06/2002	23:30 - 00:00	0.50	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	00:00 - 01:45	1.75	02	H	DRLIN1	DRILL & SLIDE 215.9 MM HOLE FROM 1447 M TO 1505 M,
	01:45 - 02:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS CLOSE 4 SEC.,
	02:00 - 02:15	0.25	09	E	DRLIN1	CHANGE LOWER KELLY GUARD,
	02:15 - 09:30	7.25	02	H	DRLIN1	DRILL & SLIDE 215.9 MM HOLE FROM 1505 M TO 1582 M,
	09:30 - 12:00	2.50	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	12:00 - 16:00	4.00	02	H	DRLIN1	DRILL & SLIDE 215.9 MM HOLE FROM 1582 M TO 1697 M,
	16:00 - 16:15	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION ANNULAR BOP CLOSE 20 SEC.,
	16:15 - 22:15	6.00	02	H	DRLIN1	DRILL & SLIDE 215.9 MM HOLE FROM 1697 M TO 1813 M,
	22:15 - 00:00	1.75	10		DRLIN1	ACCUMULATED SURVEY TIMES,
03/07/2002	00:00 - 07:45	7.75	02	H	DRLIN1	DRILL & SLIDE 215.9 mm HOLE FROM 1813 M TO 1928 M,
	07:45 - 08:00	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION UPPER PIPE RAMS CLOSE 6 SEC.,
	08:00 - 10:00	2.00	02	H	DRLIN1	DRILL & SLIDE 215.9 mm HOLE FROM 1928 M TO 1982 M,
	10:00 - 12:00	2.00	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	12:00 - 15:45	3.75	02	H	DRLIN1	DRILL & SLIDE 215.9 mm HOLE FROM 1982 M TO 2028 M,
	15:45 - 16:30	0.75	10		DRLIN1	ACCUMULATED SURVEY TIMES,
	16:30 - 17:15	0.75	05	I	DRLIN1	CIRCULATE UP SAMPLE,
	17:15 - 17:30	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION LOWER PIPE RAMS CLOSE 6 SEC.,
	17:30 - 21:00	3.50	06	H	DRLIN1	WIPPER TRIP TO 1400 M HOLE IN GOOD SHAPE,
	21:00 - 21:15	0.25	21	B	DRLIN1	BOP DRILL,
03/08/2002	21:15 - 00:00	2.75	05	D	DRLIN1	CIRCULATE WAITING SCHLUMBERGER,
	00:00 - 03:00	3.00	05	K	DRLIN1	CIRCULATE CONDITION MUD,
	03:00 - 04:30	1.50	06	H	DRLIN1	5 STAND WIPPER TRIP, HOLE IN GOOD SHAPE,
	04:30 - 08:00	3.50	05	K	DRLIN1	CIRCULATE CONDITION HOLE,
	08:00 - 13:15	5.25	06	C	DRLIN1	TRIPPING OUT OF HOLE W/ FLOW CHECKS,
	13:15 - 14:15	1.00	09		DRLIN1	SLIP & CUT DRILLING LINE,
	14:15 - 18:30	4.25	06	C	DRLIN1	TRIP OUT OF HOLE LAY DOWN DC, MUD MOTOR, MONELS, MWD TOOLS,
	18:30 - 18:45	0.25	07	A	DRLIN1	RIG SERVICE, FUNCTION BLIND RAMS,
	18:45 - 00:00	5.25	39	D	DRLIN1	RIG UP SCHLUMBERGER AND LOG,
	00:00 - 02:00	2.00	39	D	DRLIN1	LOGGING WITH SCHLUMBERGER,
03/09/2002	02:00 - 02:45	0.75	14	B	DRLIN1	PULL WEAR BUSHING,
	02:45 - 04:45	2.00	12	A	DRLIN1	HELD SAFETY MEETING W/ RIG CREW, POWER TONG & LAYDOWN TRUCK, RIG TO RUN CASING
	04:45 - 17:00	12.25	12	A	DRLIN1	RUN 145 JTS, OF 177.8 mm 38.7 kg/m L-80 LT&C CASING SHOE AT 2024 M,
	17:00 - 18:45	1.75	12	C	DRLIN1	CIRCULATE CONDITION HOLE FOR CEMENTING CASING,
	18:45 - 21:00	2.25	12	C	DRLIN1	CEMENT CASING W/ PREFLUSH 6 m3 DIESEL, PREFLUSH 3 m3 NOWFLUSH 6C, SCAVENGER 3 m3 1:1:2 .05% CD-31, FILL CEMENT 1:1:2 G .05% CD-31, 18.67 TONNES SLURRY VOLUME

Operations Summary Report

Legal Well Name: ANADARKO NETLA A-68

Common Well Name: NETLA A-68

Event Name: ORIG DRILLING

Contractor Name: AKITA

Rig Name: AKITA

Spud Date: 02/23/2002

Start: 02/07/2002 End: 03/16/2002

Rig Release: 03/16/2002 Group:

Rig Number: 55

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
03/09/2002	18:45 - 21:00	2.25	12	C	DRLIN1	17.47 m3 DENSITY 1682 kg/m3, 30% EXCESS, TAIL CEMENT 0:1:0 G, .20% R-6N, .80% NFL-2, 1%CaCL2, 7 TONNES CMT SLURRY VOLUME 5.28 m3, DENSITY 19001 kg/m3, 30% EXCESS, DISPLACE W/ WATER 40.08 m3, BUMP PLUG HELD 21000 KPA, 5 MINS OK,
03/10/2002	21:00 - 00:00	3.00	13		DRLIN1	TRANSFER INVERT MUD TO TANK FARM, CLEAN MUD TANKS,
	00:00 - 05:00	5.00	13		DRLPRO	TRANSFER INVERT TO TANK FARM, CLEAN MUD TANKS,
	05:00 - 08:00	3.00			DRLPRO	LAY DOWN LANDING JT, CLEAN BOP STACK, SET SEAL ASSEMBLY,
	08:00 - 09:30	1.50	14	B	DRLPRO	ENERGIZE SEAL ASSEMBLY TEST TO 21000 KPA,
	09:30 - 09:45	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION HCR VALVE,
03/11/2002	09:45 - 17:30	7.75	08	D	DRLPRO	WAIT ON AND CHANGE OUT BLIND RAM RUBBERS, TEST TO 20000 KPA, PICK UP DC STAND IN DERRICK,
	17:30 - 18:15	0.75	14	3	DRLPRO	SET WEAR BUSHING,
	18:15 - 18:30	0.25	21	A	DRLPRO	HELD SAFETY MEETING ON H2S, DRILLING PRODUCTION HOLE,
	18:30 - 21:30	3.00	06	A	DRLPRO	TRIP IN FILLING DRILL PIPE, 900 M,
	21:30 - 21:45	0.25	21	A	DRLPRO	HELD SAFETY MEETING ON H2S DRILLING PRODUCTION HOLE,
	21:45 - 22:00	0.25	07	A	DRLPRO	RIG SERVICE,
	22:00 - 00:00	2.00	06	A	DRLPRO	TRIP IN PICK UP PIPE TAG CEMENT AT 2006 M,
	00:00 - 01:00	1.00	06	F	DRLPRO	TRIP IN HOLE FILL DP,
	01:00 - 05:15	4.25	05	B	DRLPRO	CIRCULATE CONDITION MUD,
	05:15 - 08:00	2.75	02	C	DRLPRO	DRILL OUT CEMENT, FLOAT COLLAR, CEMENT SHOE, CLEAN TO BOTTOM 2028 M,
	08:00 - 08:30	0.50	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2028 M TO 2031 M,
	08:30 - 09:15	0.75	05	B	DRLPRO	CIRCULATE BOTTOMS UP,
	09:15 - 10:00	0.75	15	C	DRLPRO	FORMATION INTERGERTY TEST HELD 5500 KPA 10 MINS MUD WT 1010 kg/m3, EQUIVANT MUD WT 1290 kg/m3,
	10:00 - 11:45	1.75	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2031 M TO 2035 M,
	11:45 - 12:00	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION UPPER PIPE RAMS CLOSE 6 SEC.,
03/12/2002	12:00 - 12:30	0.50	05	K	DRLPRO	CIRCULATE BOTTOMS UP,
	12:30 - 13:30	1.00	06	A	DRLPRO	TRIPPING OUT OF HOLE W/ FLOW CHECKS,
	13:30 - 13:45	0.25	21	B	DRLPRO	BOP DRILL, FIRE DRILL,
	13:45 - 17:15	3.50	06	A	DRLPRO	TRIP CUT OF HOLE W/ FLOW CHECKS,
	17:15 - 17:30	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS,
	17:30 - 18:15	0.75	06	A	DRLPRO	MAKE UP BIT TRIP INTO 300 M,
	18:15 - 19:15	1.00	09		DRLPRO	SLIP & CUT DRILLING LINE,
	19:15 - 23:30	4.25	06	A	DRLPRO	TRIP IN HOLE FILLING DP AT 900 M 1700M, BREAK CIRCULATION,
	23:30 - 00:00	0.50	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2035 M TO 2036 M,
	00:00 - 01:15	1.25	02	I	DRLPRO	DRILL 155.6 mm HOLE FROM 2036 M TO 2040 M,
	01:15 - 01:30	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION LOWER PIPE RAMS CLOSE 7 SEC.,
	01:30 - 03:15	1.75	02	I	DRLPRO	DRILL 155.6 mm HOLE FROM 2040 M TO 2047 M,
	03:15 - 10:00	6.75	05	C	DRLPRO	LOST CIRCULATION .30 m3 PER MIN., MIX AND PUMP LCM PILLS, SLOWED LOSSES TO 1 m3 HOUR,
	10:00 - 10:45	0.75	02	I	DRLPRO	DRILL 155.6 mm HOLE FROM 2047 M TO 2050 M,
	10:45 - 11:15	0.50	05	I	DRLPRO	CIRCULATE UP SAMPLE, LOSSES 1 m3 PER HOUR,
03/12/2002	11:15 - 11:30	0.25	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2050 M TO 2052 M, LOSSES 1 m3 PER HOUR,
	11:30 - 12:00	0.50	05	I	DRLPRO	CIRCULATE UP SAMPLE,
	12:00 - 12:15	0.25	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2052 M TO 2055 M, LOSSES INCREASED TO 6 m3 PER HOUR,
	12:15 - 16:00	3.75	05	C	DRLPRO	MIX AND PUMP LCM PILLS UNTIL LOSSES DOWN TO 1 m3 PER HOUR,
	16:00 - 17:15	1.25	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2055 M TO 2060 M, LOSSES INCREASED TO .90 m3 PER MIN. AT 2060 M,

ANADARKO Canada Corporation

Operations Summary Report

Page 5 of 5

Legal Well Name: ANADARKO NETLA A-68

Common Well Name: NETLA A-68

Event Name: ORIG DRILLING

Contractor Name: AKITA

Rig Name: AKITA

Start: 02/07/2002

Rig Release: 03/16/2002

Rig Number: 55

Spud Date: 02/23/2002

End: 03/16/2002

Group:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
03/12/2002	17:15 - 00:00	6.75	05	C	DRLPRO	MIX AND SPOT LCM PILLS, UNABLE TO KEEP HOLE FULL RUN OUT OF VOLUME, THREE WATER TRUCKS UP TO MID NIGHT, FOUR MORE ON THERE WAY SHOULD ARRIVE BEFOR DAY LIGHT, 5 LCM PILLS,
03/13/2002	00:00 - 12:00	12.00	05	C	DRLPRO	MIX AND PUMP 5 LCM PILLS AND MONITOR WELL PUMPING IN TO ANNULUS START TO GET SOME RETURNS WHEN DISPLACING LCM PILLS,
	12:00 - 12:45	0.75	05	C	DRLPRO	CASING PRESSURE BUILD TO 1021 KPA, BULL HEAD 3 m3 DOWN ANNULUS UNTIL PRESSURE DROP TO 0 KPA, PUMPING LCM PILL # 6 WELL STARTED TO UNLOAD, CLOSE IN WELL, GO THOUGHT CHOKE GETTING FLAME ABOUT 3 METER HIGH, FINISH DISPLACING PILL,
	12:45 - 20:00	7.25	05	C	DRLPRO	MONITOR WELL PUMP 1 m3 EVERY 15 MINS TO KEEP FROM FREEZING UP MUD SYSTEM, NO MORE CASING PRESSURE, ATTEMPTED TO GET READY TO DRILL AHEAD BLIND WATER TRUCKS COULD NOT LOAD FAST ENOUGH TO KEEP UP, ONLY ROOM FOR ONE TRUCK ON THE LAKE AT A TIME, HIGH VOLUME PUMP COMING TO PUMP FROM LAKE TO SHORE.
	20:00 - 22:00	2.00	05	C	DRLPRO	
03/14/2002	22:00 - 00:00	2.00	05	C	DRLPRO	MONITOR WELL NO ANNULAR CASING PRESSURE BUILD UP,
	00:00 - 12:00	12.00	05	C	DRLPRO	MIX AND PUMP FOUR 17 m3 LCM PILLS, MONITOR WELL BETWEEN PILL MIXING, WHEN PUMPING PILLS PARTICLE RETURNS, NO GAS, HICK IN MUD PUMPS & HOLE FILL PUMPS EVERY 10 MINS TO KEEP FROM FREEZING,
	12:00 - 19:45	7.75	05	C	DRLPRO	MONITOR WELL KICK IN PUMPS ERVERY 10 MINS,
	19:45 - 00:00	4.25	05	C	DRLPRO	BREAK CIRCULATION, CIRCULATE BOTTOMS UP AT .70 m3 PER MIN. LOST 1.5 m3, FROM 2038 M CIRCULATE BOTTOMS UP EVERY 2 M AT 24:00 HOURS AT 2048 M, VOLUME STAYING STABLE, AT .70 m3 PER MIN., BY PASS SHALE SHAKERS, CIRCULATE BOTTOMS UP EVERY 2 m TO 2060 M CIRCULATE BOTTOMS UP.
03/15/2002	00:00 - 05:45	5.75	05	C	DRLPRO	
	05:45 - 06:15	0.50	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2060 M TO 2061 M STARTED TO TAKE LOSSES,
	06:15 - 07:30	1.25	05	C	DRLPRO	PUMP LCM PILL, MONITOR WELL,
	07:30 - 11:00	3.50	02	H	DRLPRO	DRILL 155.6 mm HOLE FROM 2061 M TO 2078 M, WITH TOTAL LOSSES, PUMPING AT .92 m3 PER MIN.,
	11:00 - 15:15	4.25	05	C	DRLPRO	MIX AND PUMP 23 M3 LCM PILLS,
	15:15 - 21:00	5.75	05	C	DRLPRO	CLEAN MUD TANKS, PUMPING DOWN ANNULUS, MONITORING WELL BEFOR TRIPPING OUT OF HOLE,
03/16/2002	21:00 - 00:00	3.00	06	C	DRLPRO	TRIP OUT OF HOLE WHILE PUMPING DOWN ANNULUS .66 m3 PER MIN.,
	00:00 - 01:30	1.50	06	C	DRLPRO	TRIP OUT OF HOLE, PUMPING INTO ANNULUS .66 m3 PER MIN.
	01:30 - 01:45	0.25	07	A	DRLPRO	RIG SERVICE, FUNCTION BLIND RAMS,
	01:45 - 08:00	6.25	01	A	DRLPRO	RIG UP IPS LUBRICATE, TEST TO 4000 KPA, RUN GAUGE RING,
	08:00 - 10:30	2.50	33		DRLPRO	RUN AND SET PACKER AT 2012 M,
	10:30 - 11:00	0.50	15	D	DRLPRO	TEST PACKER TO 17000 KPA,
	11:00 - 13:30	2.50	06	C	DRLPRO	RUN BOND LOG, RIG OUT IPS,
	13:30 - 00:00	10.50	06	G	DRLPRO	TRIP IN HOLE, POH LAYING DOWN DRILL PIPE AND BHA,

Well Summary Report

Legal Name: ANADARKO NETLA A-68
Common Name: NETLA A-68

Well Location

Country: CANADA
API #: Well ID: State/Prov: NORTHWEST TERRITORIES County:
Location: 300/A-68 Lat: 60° 50' Long: 122° 30'
Field Name: NETLA
Block: Slot No: Platform:
License No: 1936 License Date: 02/11/2002 Licensee: ACE
Spud Date/Time: 02/23/2002 - 00:01 P&A Date:

Surface / Bottom Hole Coordinates

	Surface Location	Bottom Hole Location
Latitude:	60.78539	
Longitude:	122.69414	
Distance North/(-)South:	(m)	(m)
Distance East/(-)West:	(m)	(m)
Measured From:		

Reference Elevations

Permanent Datum: KELLY BUSHING Datum Elev: 654.01 (m)
Kelly Bushing: 654.01 (m) Water TMD: (m)
Ground Level/Mudline: 649.30 (m) Measured Depth:
Casing Flange: 648.80 (m) Date Measured: TVD:
Tubing Hanger: Date Measured: Plugback TMD:
KB to Datum: Fill: 1.00 (m)
KB to GL/Mudline: 4.71 (m) / 5.21 (m) Deviated Well: D

Operator / Well Information

Operator: ANADARKO CANADA ENERGY LTD.
Region: BC Division: District: NETLA
Well Type: NEW Status: EVALUATION
Geological Play:
Authorized TVD: 2,350.00 (m) Authorized TMD: 2,400.00 (m)

Event Summary

Event Type	Objective	Start Date	End Date	Auth. Cost	Last Est.
ORIG DRILLING	DRILL & CASE	02/07/2002	03/16/2002		02/07/2002

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/02/2003 Report: 1 DFS: DOL:

Event Name: ORIG DRILLING

Spud: 03/03/2003 RR: 03/08/2003

Rig Name:

TMD:

TVD:

Progress:

KB: 351.00 (m) GL: 346.28 (m) KB to GL: 4.72 (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: 30,205

Cum Cost: 30,205

AFE Est: 1,496,000 AFE No.: 400798

Current Status: PRESSURE TEST DIVERTER, PREPARE TO SPUD 311MM HOLE MIX SPUD MUD

24hr Forecast: DRILL 311MM HOLE TO 201M, RUN AND CEMENT 219MM CASING,

Operations Summary

From To	Hours	Code	Sub Code	Phase	Description of Operations
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00:00 - 07:30	7.50	24	B	P MIRU	WAIT ON DAYLIGHT TO SPOT RIG
07:30 - 23:59	16.48	01	A	P MIRU	SPOT RIG AND RIG UP

DAILY OPERATIONAL COMMENTS(24hr Summary):
SPOT RIG RIG UP DIVERTER PREMIX MUD

LOT/FIT

Formation Data

Gas Readings

FMW (kg/m³)

MAASP (kPa)

Max Mud Wt(kg/m³)

Formation Name

Top (m)

Conn Avg/Max (mg/L)

Bkgr Avg/Max (mg/L)

Trip Avg/Max (mg/L)

H2S (%)

SURFACE-

Daily Drilling Reborn

DOL:

Start: 03/03/2003 End: 03/08/2003

Bit Data			Pipe Data		BHA Desc.:		
Bit No.			Min ID		Item	Jts	Length
Run			DC OD				
Size			DC				
Manu.			HWDP OD				
Type							
Serial No.			HWDP				
TFA							
Depth In			BHA				
Depth Out							
Cum. Depth			DP OD				
Cum. Hours							
WOB (Min)			String Rot		Safety Drills		
WOB (Max)			Weight				
RPM (Min)			Pick-Up				
RPM (Max)			Weight				
Cond (iODL)			Slack Off				
Cond (BGOR)			Weight		Last BOP Test (P)		
Jets 1/2/3					Last BOP Test (F)		
Jets 4/5/6					Last BOP Drill		

Survey Data

[illegible]

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/03/2003 Report: 2 DFS:

DOL: 1.00

Event Name: ORIG DRILLING

Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15	TMD: 195.00 (m)	TVD: 195.00 (m)	Progress: 195.00 (m)
	KB: 351.00 (m)	GL: 346.28 (m)	KB to GL: 4.72 (m)
Rig Super: BRIAN PREECE 780-499-5890	Rot. Hours: 12.50	AV ROP: 15.60	Hole Size: 311.00 (mm)
Wellsite Eng: AIDAN CAMPBELL	Last Casing:	Shoe TMD:	Shoe TVD:
Daily Cost: 51,403	Cum Cost: 81,608	AFE Est: 1,496,000	AFE No.: 400798

Current Status: RUN 219 MM CASG.

24hr Forecast: CMT CASG WELD ON BOWL NIPPLE UP TEST DRILL OUT LOT

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 03:45	3.75	01	A	P PRSPD	NIPPLE UP DIVERTER
03:45 - 04:30	0.75	06	A	P PRSPD	MAKE UP BIT, PRESSURE TEST DIVERTER TO 1000 KPA OK
04:30 - 06:00	1.50	05	A	P PRSPD	PRE-MIX SPUD MUD
06:00 - 06:15	0.25	21	A	P PRSPD	SAFETY AND PRE SPUD MEETING
06:15 - 07:00	0.75	02	B	P DRLSUR	SPUD AND DRILL 311 HOLE F/ O M TO 33M TAG BTM CONDUCTOR @ 20m
07:00 - 07:15	0.25	07	A	P DRLSUR	RIG SERVICE
07:15 - 07:30	0.25	10		P DRLSUR	SURVEY @ 20M 3/4 DEG
07:30 - 08:00	0.50	02	B	P DRLSUR	DRILL 311 HOLE F/ 33 M TO 43M
08:00 - 08:15	0.25	07	A	P DRLSUR	RIG SERVICE FUNCTION DIVERTER
08:15 - 12:30	4.25	02	B	P DRLSUR	DRILL 311 HOLE F/ 43 M TO 125 M
12:30 - 13:15	0.75	10		P DRLSUR	ACC. SURVEYS
13:15 - 14:30	1.25	05	C	P DRLSUR	SLIGHT LOSSES @ 111M TOTAL LOSSES @ 125M MIX AND SPOT LCM PILL SOAK 15 MIN (15M3 TOTAL LOST)
14:30 - 16:30	2.00	02	B	P DRLSUR	DRILL 311MM HOLE F/ 125 M TO 148M
16:30 - 16:45	0.25	07	A	P DRLSUR	RIG SERVICE
16:45 - 17:00	0.25	10		P DRLSUR	SURVEY @ 135M MIS RUN
17:00 - 17:45	0.75	02	B	P DRLSUR	DRILL 311 HOLE F/ 148M TO 158M
17:45 - 18:00	0.25	10		P DRLSUR	SURVEY @ 145M 3/4 DEG
18:00 - 22:15	4.25	02	B	P DRLSUR	DRILL 311MM HOLE F/ 158M TO 195M
22:15 - 22:30	0.25	05	A	P DRLSUR	CONDITION MUD AND CIRCULATE NO LOSSES
22:30 - 22:45	0.25	10		P DRLSUR	SURVEY @ 182M 1/2 DEG
22:45 - 23:59	1.23	06	H	P DRLSUR	WIPER TRIP, STRAP OUT NO CORRECTION .11 DIFF

DAILY OPERATIONAL COMMENTS(24hr Summary):
 NIPPLE UP AND TEST DIVERTER DRILL. SURFACE HOLE TO 195M
 LOSSES F/ 111M TO 125 M CURE W/ LCM 15M3 LOSSES WIPER TRIP
 HOLE GOOD 182 SURVEY 1/2 DEGREE NO LOSSES

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)	Bkgr Avg/Max (mg/L)	Trip Avg/Max (mg/L)	H2S (%)
			SURFACE-					

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/03/2003 Report: 2 DFS:

DOL: 1.00

Event Name: ORIG DRILLING

Start: 03/03/2003 End: 03/08/2003

Pump Data				Mud Check				Mud Products	
Pump	F-650	F-650		Type 1:	GEL CHEM			Additive	# Units
Liner (mm)	152.0	152.0		Time 2000 / OTH		Ca+ (mg/L)		BARAZAN D PLU	1
Stroke (mm)	203.0	203.0		Depth (m)	178.00	K+ (mg/L)		BARAFOS	2
EFF	90.0	90.0		Temp (°C)	30	Polymer (ppm)		CAUSTIC	1
Press (kPa)	5,720	6,580		Density (kg/m³)	1,090	CaCl2 (%)		DETERGENT	2
SPM	110	110		ECD (kg/m³)		NaCl (%)		BARO-SEAL-ME	4
Output (L/min)	1,094.03	1,094.03		Viscosity (s/l)	46	Sand (%)		SODA ASH	1
Velocities				PV (mPa*s)		Tot. Solids		AQUAGEL	151
Drill Pipe (m/min)		34.4		YP (Pa)		% Oil		SAWDUST	12
Drill Collar (m/min)		40.5		GELS (Pa)		% H2O		CARBONOX	2
Riser (m/min)				API WL (mL)		Oil/H2O			
Lag Time (min)				HTHP WL (mL)		HGSolid (ppm)			
Slow Pump				API FC (mm)		LGSolid (ppm)			
Pump				MBT (kg/m³)		ES (mV)			
Pump				Lime (kg/m³)		Oil Ret (%)			
Pump				pH	9.50				
				Pm (c.n²)				Mud Cost	
				PI/Mf (cm³ / cm³)				Daily	\$2,108.62
				Comment1:				Cumulative	\$2,744.00

Bit Data			Pipe Data			BHA Desc.: SURFACE		
Bit No.	1A		Min ID (mm)			Item	Jts	Length (m)
Run	1		DC OD (mm)			Tri-Cone Bit	1	0.30
Size (mm)	311.00		DC (m)			Be!! Sub	1	0.77
Manu.	Smith		HWDP OD (mm)			Drill Collar	8	74.42
Type	GTCS1		HWDP (m)			Drilling Jar	1	5.07
Serial No.	B22173					Drill Collar	4	36.26
TFA (mm²)	850.6					Cross Over	1	0.91
Depth In (m)			BHA	173.33		Heavy Weight Drill Pipe	6	55.60
Depth Out (m)	201.00							
Cum. Depth (m)	195.00		DP OD (mm)					
Cum. Hours	12.50							
WOB (Min)(daN)	3		String Rot (daN)	20				
WOB (Max)(daN)	10		Weight					
RPM (Min)	80		Pick-Up (daN)	21				
RPM (Max)	161		Weight					
Cond (IODL)	2/3/FC/A		Slack Off (daN)	19				
Cond (BGR)	3/1/NO/TD		Weight					
Jets 1/2/3	19.0/19.0/19.0							
Jets 4/5/6								

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
20.00	0.750	0.000	20.00	0.13	0.00	0.13	1.13	1.13
50.00	0.750	0.000	50.00	0.52	0.00	0.52	0.00	0.00
80.00	1.000	0.000	79.99	0.98	0.00	0.98	0.25	0.25
112.00	1.250	0.000	111.99	1.61	0.00	1.61	0.23	0.23
145.00	0.750	0.000	144.98	2.19	0.00	2.19	0.45	-0.45
182.00	0.500	0.000	181.98	2.59	0.00	2.59	0.20	-0.20
195.00	0.250	0.000	194.98	2.67	0.00	2.67	0.58	-0.58

Anadarko Petroleum Corporation

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35
Event Name: ORIG DRILLING

Date: 03/04/2003 Report: 3 DFS: 1.00 DOL: 2.00
Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15	TMD: 201.00 (m)	TVD: 201.00 (m)	Progress: 6.00 (m)
	KB: 351.00 (m)	GL: 346.28 (m)	KB to GL: 4.72 (m)
Rig Super: BRIAN PREECE 780-499-5890	Rot. Hours:	AV ROP:	Hole Size: 311.00 (mm)
Wellsite Eng: AIDAN CAMPBELL	Last Casing: 219.1 (mm)	Shoe TMD: 201.00 (m)	Shoe TVD: 201.00 (m)
Daily Cost: 52,633	Cum Cost: 134,240	AFE Est: 1,496,000	AFE No.: 400798

Current Status: TEST BOPS

24hr Forecast: DRILL OUT PREFORM LOT DRILL AHEAD

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:45	0.75	06	H	PDRLSUR	RIH TO 195M NO FILL
00:45 - 01:00	0.25	07	A	PDRLSUR	RIG SERVICE
01:00 - 01:45	0.75	02	B	PDRLSUR	DRILL 311 HOLE F/ 195 M TO 201 M
01:45 - 02:15	0.50	05	F	PDRLSUR	CIR AND CONDITION MUD SURVEY @ 195M 1/2 DEGREE
02:15 - 03:30	1.25	06	G	PDRLSUR	FLOW CHECK POOH TO RUN CASG
03:30 - 03:45	0.25	21	A	PDRLSUR	HOLD SAFETY MEETING ON RUNNING CASG
03:45 - 06:15	2.50	12	A	PDRLSUR	R/U AND RUN 15 JTS 219 MM 35.7 KG/M J55 CASG LAND @ 201 M
06:15 - 07:45	1.50	05	F	PDRLSUR	CIR @ 1.1M3/MIN 800 KPA CONDITION MUD FOR CMT JOB
07:45 - 08:15	0.50	12	C	PDRLSUR	MIX AND PUMP 11.3 M3 0:1:0 CLASS G 3% CACL CMT DISPLACE W/ 6.25M3 H2O BUMP PLUG TO 6000KPA HELD 3 MIN BLEAD OFF FLOATS HELD
08:15 - 12:15	4.00	13		PDRLSUR	WOC
12:15 - 18:00	5.75	14	A	PDRLSUR	NIPPLE DOWN DIVERTER CUT CASG L/D DIVERTER CUT CONDUCTOR FINAL CUT ON CASG WELD ON BOWL COOL BOWL TEST TO 7000 KPA OK
18:00 - 20:30	2.50	14	B	PDRLSUR	NIPPLE UP BOPS
20:30 - 23:59	3.48	15	A	PDRLSUR	PRESSURE TESTS, 1400KPA-14000KPA 10 MINUTE TESTS, BLIND RAMS, CHOKE MANIFOLD HCR VALVES MANUAL VALVES STABBING VALVE INSIDE BOP KELLY HOSE UPPER KELLY COCK TEST CASG TO 16200 KPA FUNCTION POP VALVES TEST MOTOR KILLS

DAILY OPERATIONAL COMMENTS(24hr Summary):

DRILL TO 201 M RUN AND CMT 219MM CASG 1.5 M3 GOOD CMT
RETURNS N/D DIVERTER N/U BOPS TEST BOPS TEST CASG TO 16200
KPA

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (g/cm³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,445.4	2,850	1,000.0	SURFACE-		Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

3012

Antonio Capelato Cipriani

Date: 03/04/2003 Report: 3 DFS: 1.00 DOL: 2.00

Start: 03/03/2003 End: 03/08/2003

Pump Data				Mud Check			Mud Products	
Pump	F-650	F-650		Type 1:	GEL CHEM		Additive	# Units
Liner (mm)	152.0	152.0		Time/Loc	07:30 /	Ca+ (mg/L)	BARAZAN D PLU	1
Stroke (mm)	203.0	203.0		Depth (m)	201.00	K+ (mg/L)	DESCO	2
EFF	90.0	90.0		Temp (°C)		Polymer ^(ppm)	AQUAGEL	17
Press (kPa)	5,720	5,720		Density (kg/m³)	1,040	CaCl₂ (%)		
SPM	110	110		ECD (kg/m³)		NaCl (%)		
Output (L/min)	1,094.03	1,094.03		Viscosity (s/l)	44	Sand (%)		
Velocities				PV (mPa·s)		Tot. Solids		
Drill Pipe (m/min)				YP (Pa)		% Oil		
Drill Collar (m/min)				GELS (Pa)		% H₂O		
Riser (m/min)				API WL (mL)	8.0	Oil/H₂O		
Lag Time (min)				HHP WL (mL)		HGSolid ^(lb/m³)		
				API FC (min)		LGSolid ^(lb/m³)		
				MBT (kg/m²)		ES (mV)		
				Lime (kg/m²)		Oil Ret (%)		
Slow Pump				pH	9.50		Mud Cost	
Pump				Pm (cm³)			Daily	\$577.58
Pump				Pt/Mf (cm³ / cm³)			Cumulative	\$3,321.00
Pump				Comment1:				

Bit Data			Pipe Data		BHA Desc.: SURFACE	Jts	Length (m)
Bit No.	1A		Min ID (mm)		Tri-Cone Bit	1	0.3
Run	1		DC OD (mm)		Bell Sub	1	0.7
Size (mm)	311.00		DC (m)		Drill Collar	8	74.4
Manu.	Smith		HWDP OD (mm)		Drilling Jar	1	5.0
Type	GTC S1				Drill Collar	4	36.2
Serial No.	B22179		HWDP (m)		Cross Over	1	0.9
TFA (mm²)	850.6				Heavy Weight Drill Pipe	6	55.6
Depth In (m)			BHA	173.33			
Depth Out (m)	201.00						
Cum. Depth (m)	201.00		DP OD (mm)				
Cum. Hours	12.50						
WOB (Min) (daN)	3		String Rot (daN)				
WOB (Max) (daN)	10		Weight				
RPM (Min)	80		Pick-Up (daN)				
RPM (Max)	161		Weight				
Cond (IODL)	2/3/FC/A		Slack Off (daN)				
Cond (BGOR)	3/ 1/NO/TD		Weight				
Jets 1/2/3	19.0/19.0/19.0				Last BOP Test (P)		
Jets 4/5/6					Last BOP Test (F)		
					Last BOP Drill		

Survey Data

[illegible]

Anadarko Services Corporation

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/05/2003 Report: 4 DFS: 2.00 DOL: 3.00

Event Name: ORIG DRILLING

Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15

TMD: 500.00 (m) TVD: 500.00 (m) Progress: 299.00 (m)

KB: 351.00 (m) GL: 346.28 (m) KB to GL: 4.72 (m)

Rig Super: BRIAN PREECE 780-499-5890

Rot. Hours: 13.25 AV ROP: 22.57 Hole Size: 200.00 (mm)

Wellsite Eng: AIDAN CAMPBELL

Last Casing: 219.1 (mm) Shoe TMD: 201.00 (m) Shoe TVD: 201.00 (m)

Daily Cost: 137,425

Cum Cost: 271,665 AFE Est: 1,496,000 AFE No.: 400798

Current Status: DRILL 200 MM HOLE @ 620 M

24hr Forecast: DRILL TO TD WIPER TRIP DROP GYRO POOH LOG

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:45	0.75	15	A	P DRLSUR	TEST BOPS
00:45 - 02:00	1.25	06	A	P DRLSUR	M/U BHA AND RIH TO 165M
02:00 - 06:00	4.00	15	A	P DRLSUR	TEST BOPS ANNULAR PIPE RAMS MUD LINES BACK TO PUMP TO 1400 KPA AND 14000 KPA ALL TESTS 10 MIN PREFORM ACC. FUNCTION TEST PRESS 20500 KPA ANN 4500 KPA 5 SEC PIPE RAMS 1000 KPA 4 SEC HCR 500 KPA 2 SEC TOTAL PRESS 6000 KPA 14500 KPA LEFT PRE CHARGE 7000 KPA
06:00 - 06:15	0.25	21	B	P DRLSUR	HOLD BOP DRILL W/ CREW WELL SEC 65 SEC
06:15 - 08:00	1.75	02	C	P DRLSUR	TAG CMT @ 187M DRILL F/C CMT F/S TO 201M
08:00 - 08:15	0.25	02	B	P DRLSUR	DRILL 200 MM HOLE F/ 201 M TO 206 M
08:15 - 08:30	0.25	05	B	P DRLSUR	CIR HOLE CLEAN
08:30 - 09:00	0.50	15	C	P DRLSUR	PREFORM LOT W/ 1000 KG/M3 EQUIVIENT MW 2446 NO LEAK OFF W GRADIANT OF 24 KG/M 2852 SURFACE PRESS
09:00 - 09:15	0.25	02	B	P DRLSUR	BOP DRILL W/ CREW WELL SEC 90 SEC
09:15 - 11:15	2.00	02	B	P DRLSUR	DRILL 200 MM HOLE F/ 206 M TO 244 M
11:15 - 11:30	0.25	07	A	P DRLSUR	RIG SERVICE FUNCTION PIPE RAMS 3 SEC
11:30 - 11:45	0.25	10		P DRLSUR	SURVEY @ 232 M .50 DEGREE
11:45 - 13:45	2.00	02	B	P DRLSUR	DRILL 200 MM HOLE F/ 244M TO 291 M
13:45 - 14:00	0.25	10		P DRLSUR	SURVEY @ 278M .25 DEGREE
14:00 - 18:15	4.25	02	B	P DRLSUR	DRILL 200 MM HOLE F/ 291M TO 396M
18:15 - 18:30	0.25	07	A	P DRLSUR	RIG SERVICE
18:30 - 23:15	4.75	02	B	P DRLSUR	DRILL 200MM HOLE F/ 396M TO 500M
23:15 - 23:59	0.73	10		P DRLSUR	ACCUMULATED SURVEYS

DAILY OPERATIONAL COMMENTS(24hr Summary):

TEST BOPS, RIH WITH 200MM BIT, DRILL OUT, PERFORM LOT 24KPA/M, DRILL TO 500M

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m ³)	MAASP (kPa)	Max Mud Wt (kg/m ³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	200/300
2,410.3	2,749	1,050.0	SCATTER SAND	472.00	Bkgr Avg/Max (mg/L)	70/130
					Trip Avg/Max (mg/L)	
					42S (%)	

Daily Press Herald

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/05/2003 Report: 4 DFS: 2.00 DOL: 3.00

Event Name: ORIG DRILLING

Start: 03/03/2003 End: 03/08/2003

Pump Data				Mud Check				Mud Products	
Pump	F-650			Type 1:	GEL CHEM			Additive	# Units
Liner (mm)	152.0			Time	2.00	OTH	Ca+ (mg/L)	BI CARB	8
Stroke (mm)	203.0			Depth (m)	448.00		K+ (mg/L)	AQUAGEL	59
EFF	90.0			Temp (°C)	30		Polymer ^{ppm}	PAC-R	2
Press (kPa)	6,410			Density (kg/m³)	1,070		CaCl2 (%)	CARBONOX	4
SPM	110			ECD (kg/m³)			NaCl (%)		
Output (L/min)	1,094.03			Viscosity (s/l)	47		Sand (%)		
Velocities				PV (mPa*s)			Tot. Solids		
				YP (Pa)			% Oil		
Drill Pipe (m/min)		57.7		GELS (Pa)			% H2O		
Drill Collar (m/min)		90.7		API WL (mL)	8.5		Oil/H2O		
Riser (m/min)				HTHP WL (mL)			HGSolid ^{ppm}		
Lag Time (min)		18		API FC (min)			LGSolid ^{ppm}		
Slow Pump				MBT (kg/m³)			ES (mV)		
				Lime (kg/m³)			Oil Ret (%)		
Pump F-650	2,100 (kPa)	64.65 (L/min)		pH	10.00			Mud Cost	
Pump	(kPa)	(L/min)		Pm (cm²)				Daily	\$1,163.10
Pump	(kPa)	(L/min)		PI/MI (cm² / cm²)				Cumulative	\$4,484.00
				Comment1:					

Bit Data			Pipe Data		BHA Desc. PRODUCTION			
Item	Q	W	Item	Q	Item	Q	Length	
Bit No.	1		Min ID	(mm)	62.000	Polycrystalline Diamond Bit	1	0.27
Run	2		DC OD	(mm)		Bit Sub	1	0.77
Size (mm)	200.00		DC	(m)		Drill Collar	3	28.22
Manu.	GeoDiamond		HWDP OD	(mm)		Intergral Blade Stabilizer	1	1.48
Type	M474YPX					Drill Collar	5	46.20
Serial No.	JSZ381		HWDP	(m)		Drilling Jar	1	5.07
TFA (mm²)	237.6					Drill Collar	4	36.26
Depth In (m)	201.00		BHA		487.18	Cross Over	1	0.91
Depth Out (m)	651.00					Heavy Weight Drill Pipe	6	55.60
Cum Depth (m)	299.00		DP OD	(mm)		Drill Pipe	33	312.40
Cum. Hours	13.25							
WOB (Min)(daN)	3		String Pot	(daN)	23			
WOB (Max)(daN)	5		Weight					
RPM (Min)	75		Pick-Up	(daN)	24			
RPM (Max)	110		Weight			Safety Drills		
Cond (IODL)			Slack Off	(daN)	22	Last BOP Test (P)	03/05/2003	
Cond (BGR)			Weight			Last BOP Test (F)	03/05/2003	
Jets 1/2/3	7.1/7.1/7.1					Last BOP Drill	03/05/2003	
Jets 4/5/6	7.1/7.1/7.1							

Survey Data

[illegible]

ANADARKO OIL FIELD COMPANY Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/06/2003 Report: 5 DFS: 3.00 DOL: 4.00

Event Name: ORIG DRILLING

Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15

TMD: 707.00 (m) TVD: 707.00 (m) Progress: 207.00 (m)

Rig Super: BRIAN PREECE 780-439-5890

KB: 351.00 (m) GL: 346.28 (m) KB to GL: 4.72 (m)

Wellsite Eng: AIDAN CAMPBELL

Rot. Hours: 16.00 A/V ROP: 12.94 Hole Size: 200.00 (mm)

Last Casing: 219.1 (mm) Shoe TMD: 201.00 (m) Shoe TVD: 201.00 (m)

Daily Cost: 195,037

Cum Cost: 466,703 AFE Est: 1,496,000 AFE No.: 400798

Current Status: DRILL 200MM HOLE TO 737M

24hr Forecast: DRILL TO TD, WIPER TRIP, GYRO RUN, LOG, RUN CASING AND CMT

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 00:15	0.25	07	A	P DRLPRO	RIG SERVICE
00:15 - 05:00	4.75	02	B	P DRLPRO	DRILL 200MM HOLE FROM 500M TO 620M
05:00 - 05:45	0.75	05	I	P DRLPRO	CIRC UP SAMPLE
05:45 - 07:30	1.75	02	B	P DRLPRO	DRILL 200 MM HOLE F/ 620M TO 643M
07:30 - 08:00	0.50	10		P DRLPRO	ACC. SURVEYS
08:00 - 09:30	1.50	02	B	P DRLPRO	DRILL 643M TO 651M
09:30 - 10:00	0.50	05	K	P DRLPRO	CIRC BTMS UP
10:00 - 10:15	0.25	10		P DRLPRO	SURVEY @ 642M 1 DEGREE
10:15 - 13:00	2.75	06	A	P DRLPRO	FLOW CHECK POOH W/ FLOW CHECKS TIGHT @ 458M P/U KELLY WORK TIGHT SPOT POOH W/ FLOW CHECKS
13:00 - 15:45	2.75	06	A	P DRLPRO	MU NEW BIT AND BHA RIH REAM @ 408M TO 418M 429M TO 440M 620M TO 630M WASH 630M TO 651M
15:45 - 17:00	1.25	02	B	P DRLPRO	DRILL 200MM HOLE F/ 651M TO 661M
17:00 - 17:15	0.25	07	A	P DRLPRO	RIG SERVICE
17:15 - 23:59	6.73	02	B	P DRLPRO	DRILL 200MM HOLE FROM 661M TO 707M

DAILY OPERATIONAL COMMENTS(24hr Summary):

DRILL 200MM HOLE TO 651M, POOH, RIH WITH TRI-CONE 200MM BIT, DRILL TO 707M

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m ³)	MAASP (kPa)	Max Mud Wt(kg/m ³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,410.3	2,668	1,090.0	BANFF	703.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Box Office Review

Well Name: ANADARKO SW ARROWHEAD M-35

Date: 03/06/2003 Report: 5 DFS: 3.00 DOL: 4.00

Event Name: ORIG DRILLING

Start: 03/03/2003 End: 03/08/2003

Pump Data				Mud Check				Mud Products	
Pump	F-650			Type 1: GEL CHEM			Additive	# Units	
Liner (mm)	152.0			Time 13.80 / OTH		Ca+ (mg/L)	BARAZAN D PLU	1	
Stroke (mm)	203.0			Depth (m)	704.00	K+ (mg/L)	BARITE	12	
EFF	90.0			Temp (°C)	30	Polymer ^{ppm}	AQUAGEL	23	
Press (kPa)	3,150			Density (kg/m³)	1,090	CaCl2 (%)	CARBONOX	1	
SPM	110			ECD (kg/m³)		NaCl (%)			
Output (L/min)	1,094.03			Viscosity (s/lb)	51	Sand (%)			
Velocities				PV (mPa*s)		Tot. Solids			
				YP (Pa)		% Oil			
Drill Pipe (m/min)		57.7		GELS (Pa)		% H2O			
Drill Collar (m/min)		90.7		API WL (ml)	7.5	Oil/H2O			
Riser (m/min)				HTHP WL (ml)		HGSolid ^{ppm}			
Lag Time (min)				API FC (mm)		LGSolid ^{ppm}			
Slow Pump				MBT (kg/m³)		ES (mV)			
				Line (kg/m³)		Oil Ret (%)			
Pump F-650	2,000 (kPa)	646.47 (L/min)		pH	9.50		Mud Cost		
Pump	(kPa)	(L/min)		Pm (cm²)			Daily	\$623.26	
Pump	(kPa)	(L/min)		Pf/Mf (cm² / cm²)			Cumulative	\$5,108.00	
				Comment1:					

Bit Data			Pipe Data			BHA Desc.: PRODUCTION 2		
Bit No.	2	1	Min ID (mm)	62.000	Item	Jts	Length	
Run	2	2	DC OD (mm)		Tri-Cone Bit	1	0.27	
Size (mm)	200.00	200.00	DC (m)		Bit Sub	1	0.77	
Manu.	Smith	GeoDiamond	HWDP OD (mm)		Drill Collar	8	74.42	
Type	F12	M474YPX	HWDP (m)		Drilling Jar	1	5.07	
Serial No.	MK4350	JS7381			Drill Collar	4	36.26	
TFA (mm²)	290.3	237.6			Cross Over	1	0.91	
Depth In (m)	651.00	201.00	BHA	725.62	Heavy Weight Drill Pipe	6	55.60	
Depth Out (m)	737.00	651.00			Drill Pipe	58	552.32	
Cum. Depth (m)	56.00	450.00	DP OD (mm)					
Cum. Hours	8.00	21.25						
WOB (Min)(daN)	8	3	String Rot (daN)	21				
WOB (Max)(daN)	10	8	Weight					
RPM (Min)	80	75	Pick-Up (daN)	29				
RPM (Max)	110	110	Weight					
Cond (IODL)	2/2/BT/H		Slack Off (daN)	2	Safety Drills			
Cond (BGR)	E/1/LT/TD		Weight		Last BOP Test (P)		03/05/2003	
Jets 1/2/3	11.1/11.1/11.1	7.1/7.1/7.1			Last BOP Test (F)		03/05/2003	
Jets 4/5/6		7.1/7.1/7.1			Last BOP Drill		03/05/2003	

Survey Date: 11/11/2011

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Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35
Event Name: ORIG DRILLING

Date: 03/07/2003 Report: 0 DFS: 4.00 DOL: 5.00
Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15	TMD: 737.00 (m)	TVD: 737.00 (m)	Progress: 30.00 (m)
	KB: 351.00 (m)	GL: 346.28 (m)	KB to GL: 4.72 (m)
Rig Super: BRIAN PREECE 780-499-5890	Rot. Hours: 5.75	AV ROP: 5.22	Hole Size: 200.00 (mm)
Wellsite Eng: AIDAN CAMPBELL	Last Casing: 219.1 (mm)	Shoe TMD: 201.00 (m)	Shoe TVD: 201.00 (in)
Daily Cost: 74,736	Cum Cost: 545,438	AFE Est: 1,496,000	AFE No.: 400798

Current Status: RUN 139.7MM 20.8 KG/M CASG

24hr Forecast: RUN AND CMT CASG SET SLIPS RIG OUT PREPARE FOR MOVE TO J74

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 04:00	4.00	02	B	P DRLPRO	DRILL 200MM HOLE FROM 707M TO 728M
04:00 - 04:15	0.25	10		P DRLPRO	DEVIATION SURVEY @ 719M 1 DEGREE
04:15 - 04:30	0.25	07	A	P DRLPRO	RIG SERVICE
04:30 - 06:15	1.75	02	B	P DRLPRO	DRILL 200MM HOLE FROM 728M TO 737M
06:15 - 07:00	0.75	05	D	P DRLPRO	CIR BTMMS UP PRIOR TO WIPER TRIP
07:00 - 10:30	3.50	06	C	P DRLPRO	WIPER TRIP TO THE SHOE @ 201M W/ FLOW CHECKS SLM NO CORRECTION (REAM 571M TO 602 M)
10:30 - 13:00	2.50	05	D	P DRLPRO	CIR HOLE CLEAN CONDITION MUD
13:00 - 13:15	0.25	21	A	P DRLPRO	SAFETY MEETING ON GYRO
13:15 - 13:45	0.50	10		P DRLPRO	PUMP GYRO SURVEY DOWN
13:45 - 15:45	2.00	06	C	P DRLPRO	BLOW KELLY FLOW CHECK POOH TO LOG W/ FLOW CHECKS AND GYRO SURVEY
15:45 - 16:00	0.25	07	A	P DRLPRO	RIG SERVICE
16:00 - 20:00	4.00	11	A	P DRLPRO	WIRELINE LOGS, AIT/CNL/LDT/SONIC/GR/DAC
20:00 - 20:15	0.25	07	A	P DRLPRO	RIG SERVICE
20:15 - 21:45	1.50	06	H	P DRLPRO	MAKE UP BIT, RIH
21:45 - 22:45	1.00	05	F	P DRLPRO	CONDITION MUD AND CIRCULATE
22:45 - 23:00	0.25	21	A	P DRLPRO	SAFETY MEETING, LAYING DOWN DRILL STRING
23:00 - 23:59	0.98	06	A	P DRLPRO	LAYDOWN DRILL STRING, FLOWCHECK @ 737M, 643M, 368M

DAILY OPERATIONAL COMMENTS(24hr Summary):
DRILL TO TD 737M WIPER TRIP, DROP GYRO, POOH LOG, RIH, CONDITION AND CIRCULATE, LAY DOWN DRILL STRING

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m ³)	MAASP (kPa)	Max Mud Wt (g/m ³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,410.3	2,668	1,000.0	BANFF	703.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Prayer:

Daily Drilling Report

Date: 03/07/2003 Report: 6 DFS: 4.00 DOL: 5.00

Start: 03/03/2003 End: 03/08/2003

Pump Data				Mud Check				Mud Products	
Pump	F-650			Type 1: GEL CHEM			Additive	# Units	
Liner (mm)	152.0			Time 22:30 / OTH		Ca+ (mg/L)	CAUSTIC	1	
Stroke (mm)	203.0			Depth (m)	737.00	K+ (mg/L)	BARITE	36	
EFF	90.0			Temp (°C)	30	Polymer (ppm)	AQUAGEL	25	
Press (kPa)	5,200			Density (kg/m³)	1,090	CaCl2 (%)	PAC-R	1	
SPM	105			ECD (kg/in³)		NaCl (%)	CARBONOX	3	
Output (L/min)	1,044.30			Viscosity (s/l)	77	Sand (%)			
Velocities				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)		LG Solid (kg/m³)			
				MBT (kg/m³)		ES (mV)			
				Line (kg/m³)		Oil Ret (%)			
Slow Pump				Mud Cost					
Pump F-650	2,000 (kP	646.47 (L/min)		pH	9.00		Daily	\$884.79	
Pump	(kPa)	(L/min)		Pm (cm³)			Cumulative	\$5,992.00	
Pump	(kPa)	(L/min)		PI/Mf (cm³ / cm³)					
Comment1:									

Bit Data			Pipe Data		BHA Desc.: PRODUCTION 2		
					Item	Jts.	Length
Bit No.	2		Min ID (mm)	62.000	Tri-Cone Bit	1	0.27
Run	2		DC OD (mm)		Bit Sub	1	0.77
Size (mm)	200.00		DC (m)		Drill Collar	8	74.42
Manu.	Smith		HWDP OD (mm)		Drilling Jar	1	5.07
Type	F12				Drill Collar	4	36.26
Serial No.	MK4350		HWDP (m)		Cross Over	1	0.91
TFA (mm²)	290.3				Heavy Weight Drill Pipe	6	55.60
Depth In (m)	651.00		BHA	725.62	Drill Pipe	58	552.32
Depth Out (m)	737.00						
Cum. Depth (m)	86.00		DP OD (mm)				
Cum. Hours	13.75						
WOB (Min)(daN)	8		String Rot (daN)	29			
WOB (Max)(daN)	10		Weight				
RPM (Min)	80		Pick-Up (daN)	30			
RPM (Max)	110		Weight				
Cond (IQDL)	2/2/BT/H		Slack Off (daN)	28			
Cond (BGOR)	E/ 1/LT/TD		Weight				
Jets 1/2/3	11.1/11.1/11.1				Last BOP Test (P)		03/05/2003
Jets 4/5/6					Last BOP Test (F)		03/05/2003
					Last BOP Drill		03/05/2003

Survey Data

[illegible]

Daily Drilling Report

Well Name: ANADARKO SW ARROWHEAD M-35
Event Name: ORIG DRILLING

Date: 03/08/2003 Report: 7 DFS: 5.00 DOL: 6.00
Spud: 03/03/2003 RR: 03/08/2003

Rig Name: AKITA 15	TMD: 737.00 (m)	TVD: 737.00 (m) Progress:
	KB: 351.00 (m)	GL: 346.28 (m) KB to GL: 4.72 (m)
Rig Super: BRIAN PREECE 780-499-5890	Rot. Hours:	AV ROP: Hole Size: 200.00 (mm)
Wellsite Eng: AIDAN CAMPBELL	Last Casing: 219.1 (mm)	Shoe TMD: 201.00 (m) Shoe TVD: 201.00 (m)
Daily Cost: 76,685	Cum Cost: 622,123	AFE Est: 1,496,000 AFE No.: 400798

Current Status: PREPARE FOR RIG MOVE

24hr Forecast: MOVE F/ M-35 TO J-74 RIG UP

Operations Summary

From - To	Hours	Code	Sub Code	Phase	Description of Operations
00:00 - 02:00	2.00	06	G	P EVALPR	L/D DRILL STRING
02:00 - 02:15	0.25	21	A	P EVALPR	SAFETY MEETING ON RUNING CASG
02:15 - 07:00	4.75	12	A	P EVALPR	RUN 57 JTS 139.7 MM 20.8 KG/M CASG LAND @ 736M
07:00 - 09:45	2.75	05	F	P EVALPR	CIR AND CONDITION MUD PRIOR TO CMT. JOB
09:45 - 10:00	0.25	21	A	P EVALPR	SAFETY MEETING PRIOR TO CMT. JOB
10:00 - 11:15	1.25	12	C	P EVALPR	PUMP 3 M3 WATER 3M3 SCAVENGER 18 M3 CMT SLURRY DROP PLUG DISPLACE W/ 9.2 M3 WATER BUMP PLUG W/ 13500 KPA HOLD 10 MIN BLEAD BACK FLOAT HELD OK 1M3 GOOD CMT RETURNS
11:15 - 14:00	2.75	14	B	P EVALPR	NIPPLE DOWN BOPS SET SLIPS W/ 11000 DECS CUT CASG BLOW DOWN CASG TACK WELD CAP ON CASG
14:00 - 17:00	3.00	01	C	P RDMO	CLEAN MUD TANKS
17:00 - 23:59	6.98	01	B	P RDMO	PREPARE FOR RIG MOVE RIG RELEASED @ 2400 03/08/2003 TO MOVE TO J-74

DAILY OPERATIONAL COMMENTS(24hr Summary):
RUN AND CMT CASG. 1M3 GOOD CMT RETURNS CLEAN TANKS
PREPARE FOR RIG MOVE

LOT/FIT			Formation Data		Gas Readings	
EMW (kg/m³)	MAASP (kPa)	Max Mud Wt (g/cm³)	Formation Name	Top (m)	Conn Avg/Max (mg/L)	
2,410.3	2,668	1,090.0	BANFF	703.00	Bkgr Avg/Max (mg/L)	
					Trip Avg/Max (mg/L)	
					H2S (%)	

Daily Drilling Report

Start: 03/03/2003 End: 03/08/2003

Bit Data			Pipe Data		BHA Desc:		
					Item	Unit	Quantity
Bit No.			Min ID				
Run			DC OD				
Size			DC				
Manu.			HWDP OD				
Type							
Serial No.			HWDP				
TFA							
Depth In			BHA				
Depth Out							
Cum. Depth			DP OD				
Cum. Hours							
WOB (Min)			String Rot				
WOB (Max)			Weight				
RPM (Min)			Pick-Up				
RPM (Max)			Weight				
Cond (IOPD)			Slack Off				
Cond (RGOR)			Weight				
Jets 1/2/3							
Jets 4/5/6							
					Safety Drills		
					Last BOP Test (P) 03/05/2003		
					Last BOP Test (F) 03/05/2003		
					Last BOP Drill 03/05/2003		

Survey Data

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ANADARKO Canada Corporation

Operations Summary Report

Legal Well Name: ANADARKO SW ARROWHEAD M-35
 Common Well Name: SW ARROWHEAD M-35
 Event Name: ORIG DRILLING
 Contractor Name: AKITA
 Rig Name: AKITA

Start: 03/02/2003
 Rig Release: 03/08/2003
 Rig Number: 15

Spud Date: 03/03/2003
 End: 03/08/2003
 Group:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
03/02/2003	00:00 - 07:30	7.50	24	B	MIRU	WAIT ON DAYLIGHT TO SPOT RIG
	07:30 - 23:59	16.48	01	A	MIRU	SPOT RIG AND RIG UP
03/03/2003	00:00 - 03:45	3.75	01	A	PRPSPD	NIPPLE UP DIVERTER
	03:45 - 04:30	0.75	06	A	PRPSPD	MAKE UP BIT, PRESSURE TEST DIVERTER TO 1000 KPA OK
	04:30 - 06:00	1.50	05	A	PRPSPD	PRE-MIX SPUD MUD
	06:00 - 06:15	0.25	21	A	PRPSPD	SAFETY AND PRE SPUD MEETING
	06:15 - 07:00	0.75	02	B	DRLSUR	SPUD AND DRILL 311 HOLE F/ O M TO 33M TAG BTM CONDUCTOR @ 20M
	07:00 - 07:15	0.25	07	A	DRLSUR	RIG SERVICE
	07:15 - 07:30	0.25	10		DRLSUR	SURVEY @ 20M 3/4 DEG
	07:30 - 08:00	0.50	02	B	DRLSUR	DRILL 311 HOLE F/ 33 M TO 43M
	08:00 - 08:15	0.25	07	A	DRLSUR	RIG SERVICE FUNCTION DIVERTER
	08:15 - 12:30	4.25	02	B	DRLSUR	DRILL 311 HOLE F/ 43 M TO 125 M
	12:30 - 13:15	0.75	10		DRLSUR	ACC. SURVEYS
	13:15 - 14:30	1.25	05	C	DRLSUR	SLIGHT LOSSES @ 111M TOTAL LOSSES @ 125M MIX AND SPOT LCM PILL SOAK 15 MIN (15M3 TOTAL LOST)
	14:30 - 16:30	2.00	02	B	DRLSUR	DRILL 311MM HOLE F/ 125 M TO 148M
	16:30 - 16:45	0.25	07	A	DRLSUR	RIG SERVICE
	16:45 - 17:00	0.25	10		DRLSUR	SURVEY @ 135M MIS RUN
	17:00 - 17:45	0.75	02	B	DRLSUR	DRILL 311 HOLE F/ 148M TO 158M
	17:45 - 18:00	0.25	10		DRLSUR	SURVEY @ 145M 3/4 DEG
	18:00 - 22:15	4.25	02	B	DRLSUR	DRILL 311MM HOLE F/ 158M TO 195M
	22:15 - 22:30	0.25	05	A	DRLSUR	CONDITION MUD AND CIRCULATE NO LOSSES
	22:30 - 22:45	0.25	10		DRLSUR	SURVEY @ 182M 1/2 DEG
	22:45 - 23:59	1.23	06	H	DRLSUR	WIPER TRIP, STRAP OUT NO CORRECTION .11 DIFF
03/04/2003	00:00 - 00:45	0.75	06	H	DRLSUR	RIH TO 195M NO FILL
	00:45 - 01:00	0.25	07	A	DRLSUR	RIG SERVICE
	01:00 - 01:45	0.75	02	B	DRLSUR	DRILL 311 HOLE F/ 195 M TO 201 M
	01:45 - 02:15	0.50	05	F	DRLSUR	CIR AND CONDITION MUD SURVEY @ 195M 1/2 DEGREE
	02:15 - 03:30	1.25	06	G	DRLSUR	FLOW CHECK POOH TO RUN CASG
	03:30 - 03:45	0.25	21	A	DRLSUR	HOLD SAFETY MEETING ON RUNNING CASG
	03:45 - 06:15	2.50	12	A	DRLSUR	R/U AND RUN 15 JTS 219 MM 35.7 KG/M J55 CASG LAND @ 201 M
	06:15 - 07:45	1.50	05	F	DRLSUR	CIR @ 1.1M3/MIN 800 KPA CONDITION MUD FOR CMT JOB
	07:45 - 08:15	0.50	12	C	DRLSUR	MIX AND PUMP 11.3 M3 0:1:0 CLASS G 3% CACL CMT DISPLACE W/ 6.25M3 H2O BUMP PLUG TO 6000KPA HELD 3 MIN BLEAD OFF FLOATS HELD
	08:15 - 12:15	4.00	13		DRLSUR	WOC
	12:15 - 18:00	5.75	14	A	DRLSUR	NIPPLE DOWN DIVERTER CUT CASG L/D DIVERTER CUT CONDUCTOR FINAL CUT ON CASG WELD ON BOWL COOL BOWL TEST TO 7000 KPA OK
	18:00 - 20:30	2.50	14	B	DRLSUR	NIPPLE UP BOPS
	20:30 - 23:59	3.48	15	A	DRLSUR	PRESSURE TESTS, 1400KPA-14000KPA 10 MINUTE TESTS, BLIND RAMS, CHOKER MANIFOLD HCR VALVES MANUAL VALVES STABBING VALVE INSIDE BOP KELLY HOSE UPPER KELLY COCK TEST CASG TO 16200 KPA FUNCTION POP VALVES TEST MOTOR KILLS
03/05/2003	00:00 - 00:45	0.75	15	A	DRLSUR	TEST BOPS
	00:45 - 02:00	1.25	06	A	DRLSUR	M/U BHA AND RIH TO 165M
	02:00 - 06:00	4.00	15	A	DRLSUR	TEST BOPS ANNULAR PIPE RAMS MUD LINES BACK TO PUMP TO 1400 KPA AND 14000 KPA ALL TESTS 10 MIN PREFORM ACC. FUNCTION TEST PRESS 20500 KPA ANN 4500 KPA 5 SEC PIPE RAMS 1000 KPA 4 SEC HCR 500 KPA 2 SEC TOTAL PRESS 6000 KPA 14500 KPA LEFT PRE CHARGE 7000 KPA

Anadarko Canada Corporation Operations Summary Report

Legal Well Name: ANADARKO SW ARROWHEAD M-35
 Common Well Name: SW ARROWHEAD M-35
 Event Name: ORIG DRILLING
 Contractor Name: AKITA
 Rig Name: AKITA

Spud Date: 03/03/2003
 Start: 03/02/2003
 End: 03/08/2003
 Rig Release: 03/08/2003
 Group:
 Rig Number: 15

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
03/05/2003	06:00 - 06:15	0.25	21	B	DRLSUR	HOLD BOP DRILL W/ CREW WELL SEC 65 SEC
	06:15 - 08:00	1.75	02	C	DRLSUR	TAG CMT @ 187M DRILL F/C CMT F/S TO 201M
	08:00 - 08:15	0.25	02	B	DRLSUR	DRILL 200 MM HOLE F/ 201 M TO 206 M
	08:15 - 08:30	0.25	05	B	DRLSUR	CIR HOLE CLEAN
	08:30 - 09:00	0.50	15	C	DRLSUR	PREFORM LOT W/ 1000 KG/M3 EQUIVIENT MW 2446 NO LEAK OFF W GRADIANT OF 24 KG/M 2852 SURFACE PRESS
	09:00 - 09:15	0.25	02	B	DRLSUR	BOP DRILL W/ CREW WELL SEC 90 SEC
	09:15 - 11:15	2.00	02	B	DRLSUR	DRILL 200 MM HOLE F/ 206 M TO 244 M
	11:15 - 11:30	0.25	07	A	DRLSUR	RIG SERVICE FUNCTION PIPE RAMS 3 SEC
	11:30 - 11:45	0.25	10		DRLSUR	SURVEY @ 232 M .50 DEGREE
	11:45 - 13:45	2.00	02	B	DRLSUR	DRILL 200 MM HOLE F/ 244M TO 291 M
	13:45 - 14:00	0.25	10		DRLSUR	SURVEY @ 278M .25 DEGREE
	14:00 - 18:15	4.25	02	B	DRLSUR	DRILL 200 MM HOLE F/ 291M TO 396M
	18:15 - 18:30	0.25	07	A	DRLSUR	RIG SERVICE
	18:30 - 23:15	4.75	02	B	DRLSUR	DRILL 200MM HOLE F/ 396M TO 500M
	23:15 - 23:59	0.73	10		DRLSUR	ACCUMULATED SURVEYS
03/06/2003	00:00 - 00:15	0.25	07	A	DRLPRO	RIG SERVICE
	00:15 - 05:00	4.75	02	B	DRLPRO	DRILL 200MM HOLE FROM 500M TO 620M
	05:00 - 05:45	0.75	05	I	DRLPRO	CIRC UP SAMPLE
	05:45 - 07:30	1.75	02	B	DRLPRO	DRILL 200 MM HOLE F/ 620M TO 643M
	07:30 - 08:00	0.50	10		DRLPRO	ACC. SURVEYS
	08:00 - 09:30	1.50	02	B	DRLPRO	DRILL 643M TO 651M
	09:30 - 10:00	0.50	05	K	DRLPRO	CIRC BTMS UP
	10:00 - 10:15	0.25	10		DRLPRO	SURVEY @ 642M 1 DEGREE
	10:15 - 13:00	2.75	06	A	DRLPRO	FLOW CHECK POOH W/ FLOW CHECKS TIGHT @ 458M P/U KELLY WORK TIGHT SPOT POOH W/ FLOW CHECKS
	13:00 - 15:45	2.75	06	A	DRLPRO	M/U NEW BIT AND BHA RIH REAM @ 408M TO 418M 429M TO 440M 620M TO 630M WASH 630M TO 651M
03/07/2003	15:45 - 17:00	1.25	02	B	DRLPRO	DRILL 200MM HOLE F/ 651M TO 661M
	17:00 - 17:15	0.25	07	A	DRLPRO	RIG SERVICE
	17:15 - 23:59	6.73	02	B	DRLPRO	DRILL 200MM HOLE FROM 661M TO 707M
	00:00 - 04:00	4.00	02	B	DRLPRO	DRILL 200MM HOLE FROM 707M TO 728M
	04:00 - 04:15	0.25	10		DRLPRO	DEVIATION SURVEY @ 719M 1 DEGREE
	04:15 - 04:30	0.25	07	A	DRLPRO	RIG SERVICE
	04:30 - 06:15	1.75	02	B	DRLPRO	DRILL 200MM HOLE FROM 728M TO 737M
	06:15 - 07:00	0.75	05	D	DRLPRO	CIR BTMS UP PRIOR TO WIPER TRIP
	07:00 - 10:30	3.50	06	C	DRLPRO	WIPER TRIP TO THE SHOE @ 201M W/ FLOW CHECKS SLM NO CORRECTION (REAM 571M TO 602 M)
	10:30 - 13:00	2.50	05	D	DRLPRO	CIR HOLE CLEAN CONDITION MUD
	13:00 - 13:15	0.25	21	A	DRLPRO	SAFETY MEETING ON GYRO
	13:15 - 13:45	0.50	10		DRLPRO	PUMP GYRO SURVEY DOWN
	13:45 - 15:45	2.00	06	C	DRLPRO	BLOW KELLY FLOW CHECK POOH TO LOG W/ FLOW CHECKS AND GYRO SURVEY
	15:45 - 16:00	0.25	07	A	DRLPRO	RIG SERVICE
	16:00 - 20:00	4.00	11	A	DRLPRO	WIRELINE LOGS, AIT/CNL/LDT/SONIC/GR/DAC
03/08/2003	20:00 - 20:15	0.25	07	A	DRLPRO	RIG SERVICE
	20:15 - 21:45	1.50	06	H	DRLPRO	MAKE UP BIT, RIH
	21:45 - 22:45	1.00	05	F	DRLPRO	CONDITION MUD AND CIRCULATE
	22:45 - 23:00	0.25	21	A	DRLPRO	SAFETY MEETING, LAYING DOWN D'ILL STRING
	23:00 - 23:59	0.98	06	A	DRLPRO	LAYDOWN DRILL STRING, FLOWCHECK @ 737M, 643M, 368M
	00:00 - 02:00	2.00	06	G	EVALPR	L/D DRILL STRING
	02:00 - 02:15	0.25	21	A	EVALPR	SAFETY MEETING ON RUNING CASG
	02:15 - 07:00	4.75	12	A	EVALPR	RUN 57 JTS 139.7 MM 20.8 KG/M CASG LAND @ 736M

ANADARKO OPERATIONS

Operations Summary Report

Legal Well Name: ANADARKO SW ARROWHEAD M-35

Common Well Name: SW ARROWHEAD M-35

Spud Date: 03/03/2003

Event Name: ORIG DRILLING

Start: 03/02/2003

End: 03/08/2003

Contractor Name: AKITA

Rig Release: 03/08/2003

Group:

Rig Name: AKITA

Rig Number: 15

Date	From	To	Hours	Code	Sub Code	Phase	Description of Operations
03/08/2003	07:00 - 09:45		2.75	05	F	EVALPR	CIR AND CONDITION MUD PRIOR TO CMT. JOB
	09:45 - 10:00		0.25	21	A	EVALPR	SAFETY MEETING PRIOR TO CMT. JOB
	10:00 - 11:15		1.25	12	C	EVALPR	PUMP 3 M3 WATER 3M3 SCAVENGER 18 M3 CMT SLURRY DROP PLUG DISPLACE W/ 9.2 M3 WATER BUMP PLUG W/ 13500 KPA HOLD 10 MIN BLEAD BACK FLOAT HELD OK 1M3 GOOD CMT RETURNS
	11:15 - 14:00		2.75	14	B	EVALPR	NIPPLE DOWN BOPS SET SLIPS W/ 11000 DECS CUT CASG BLOW DOWN CASG TACK WELD CAP ON CASG
	14:00 - 17:00		3.00	01	C	RDMO	CLEAN MUD TANKS
	17:00 - 23:59		6.98	01	B	RDMO	PREPARE FOR RIG MOVE RIG RELEASED @ 2400 03/08/2003 TO MOVE TO J-74

Well Summary Report

Legal Name: ANADARKO SW ARROWHEAD M-35
Common Name: SW ARROWHEAD M-35

Well Location

Country: CANADA
API #: Well ID: State/Prov: NORTHWEST TERRITORIES County:
Location: 300/M- 35 Lat: 60° 30' Long: 123° 0'
Field Name: CHINKEH
Block: Slot No: Platform:
License No: 1989 License Date: 02/20/2003 Licensee: ACE
Spud Date/Time: 03/03/2003 - 07:00 P&A Date:

Surface / Bottom Hole Coordinates

	Surface Location	Bottom Hole Location
Latitude:	60.41594	
Longitude:	-123.12306	
Distance North/(-)South:	(m)	(m)
Distance East/(-)West:	(m)	(m)
Measured From:		

Reference Elevations

Permanent Datum: KELLY BUSHING Datum Elev: 351.00 (m)
Kelly Bushing: 351.00 (m) Water TMD: (m)
Ground Level/Mudline: 346.28 (m) Measured Depth:
Casing Flange: (m) Date Measured: TVD:
Tubing Hanger: Date Measured: Plugback TMD:
KB to Datum: Fill: (m)
KB to GL/Mudline: 4.72 (m) / (m) Deviated Well: V

Operator / Well Information

Operator: ANADARKO CANADA ENERGY LTD.
Region: FORT ST. JOHN Division: District: NWT
Well Type: NEW Status: SUSPENDED
Geological Play:
Authorized TVD: 525.00 (m) Authorized TMD: 525.00 (m)

Event Summary

Event Type	Collective	Start Date	End Date	Auth. Cost	Last Est
ORIG COMPLETION	DEVELOPMENT COMPLETION	03/21/2003	03/27/2003		
ORIG DRILLING	EXPLORATORY DRILLING	03/02/2003	03/08/2003		02/21/2003

Baroid



Baroid Drilling Fluids

Post Well Audit

ANADARKO et al Ft Liard

M-35

May 20, 2003

HALLIBURTON



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Post Well Audit

Operator	Anadarko
Well Name	ACC Liard Arrowhead M-35
Field / Block	Arrowhead/
Country	Canada
Legal Description	M-35
Geographic Area / County	
District	
Contractor	AKITA Drilling Ltd
Rlg Name	Akita 15
Recap Date	5/20/2003
Reference Number	
Prepared By	Al Toney



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Cover Letter

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

Re: ACC Fort Liard M-35

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



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Table of Content

Cover Letter
Cover Page
Table of Contents
Well Summary Report
Net Well Cost Breakdown
Total Cost Breakdown
Product Price List
Conclusions & Recommendations
Interval Summary
Interval Discussion
Interval Cost Breakdown
Interval Inventory Summary
Operations Log Recap
Bit & Hydraulics Records
Personnel Register
Deviation



Well Summary

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Well Data

Spud Date	Mar/02/03	Products/Fluids Drilling Cost	\$11,952.74
TD Date	Mar/07/03	Products/Fluids Completion Cost	\$0.00
Project		Solids Control/ Waste Management Cost	\$164.70
Days on Well	5	Products/Fluids Cementing Cost	\$0.00
From Date	Mar/02/03	Products Lost/Damaged Cost	\$0.00
To Date	Mar/7/03	Engineering Services Cost	\$2,100.00
Drilling Days	1	Equipment Cost	\$0.00
Rotating Hours	48.00	Transport / Packaging	\$440.00
Average ROP	m/hr 19.5	Other Cost	\$0.00
Maximum Density	kg/m3 0	Total Well Cost	\$14,657.44
Total Measured Depth	m 736.0	Planned Cost	\$0.00
True Vertical Depth	m 736.0	Cost per Fluid Volume	\$ / m3 1,136.24
Distance Drilled	m 0.0	Cost per m Drilled	\$ / m 0.00
Maximum Deviation	degrees 1.25	Cost / Volume of Hole Drilled	\$ / m3 0.00
Maximum Horiz. Displacement	m 0.0	Fluid Volume / Hole Volume	m3 / m3 0.000
Bottom Hole Temperature	Deg C	Fluid Volume / Length Drilled	m3/m 0.000

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 inm	Hole MD m	Hole TVD m
8.625 K-55 24.0	03/04/2003 08:00	0.0	0.0	201.0	201.0	219	205	311	201.0	201.0
5.5 K-55 14.0	03/08/2003 12:00	0.0	0.0	736.0	736.0	139	127	200	736.0	736.0

Mud Program

Interval #	Mud Type	Interval Days	BHT Deg C	Max. Dens kg/m3	Planned Fluid Cost	Actual Fluids and Products Cost	Variance
01	AQUAGEL Mud	6		0	\$ 0.00	\$ 4,360.05	\$ 4,360.05
01	Spud Mud	6		0	\$ 0.00	\$ 1,616.32	\$ 1,616.32
02	AQUAGEL Mud	1		0	\$ 0.00	\$ 4,360.05	\$ 4,360.05
02	Spud Mud	1		0	\$ 0.00	\$ 1,616.32	\$ 1,616.32

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Net Well Cost Breakdown

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Cost Breakdown I	\$	Interval 01	Interval 02	Total
Fluids/Products : Drilling		5,976.37	5,976.37	11,952.74
Fluids Products : Comp/Filtration				
Solids Control/Waste Managment		164.70		164.70
Fluids/Products : Cementing				
Engineering Services		1,050.00	1,050.00	2,100.00
Fluids/Products : Lost Damaged				
Other Cost				
Equipment cost				
Transport / Packaging Cost		220.00	220.00	440.00
Total Cost		7,411.07	7,246.37	14,657.44

Cost Breakdown II	\$	Interval 01	Interval 02	Total
Total Products Cost		6,141.07	5,976.37	12,117.44
Total Fluids Cost				
Total Charges Cost		1,270.00	1,270.00	2,540.00
Total Cost		7,411.07	7,246.37	14,657.44
Planned Cost				
Variance		7,411.07	7,246.37	14,657.44

Volumes Breakdown	m3	Interval 01	Interval 02	Total
Total Base Fluids Additions				
Total Chemical Additions		5.99	5.99	11.98
Total Baffle Additions		0.46	0.46	0.92
Total Water Additions				
Total Fluid Built		6.45	6.45	12.90
Total Fluids Received				
Total Mixing Additions				
Total Influx Additions				
Total Other Additions				
Total Fluid Volume		6.45	6.45	12.90

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Total Cost Breakdown

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Material	Unit Size	Quantity	Total Cost
Engineering/Services			
Drilling Fluids Engineer	day(s)	2.00	\$ 1,050.00
		Subtotal	\$ 1,050.00
Prod/Fluids : Drilling			
AQUAGEL	45 Kg bag	276.00	\$ 2,246.64
BARAFOS	23 Kg bag	3.00	\$ 272.70
BARAZAN D PLUS	25 lb bag	3.00	\$ 748.62
barite	40 Kg bag	48.00	\$ 536.16
BAROID DETERGENT	20 l pail	6.00	\$ 223.38
BARO-SEAL MEDIUM	16 Kg bag	4.00	\$ 102.52
bicarbonate of soda	50 lb bag	8.00	\$ 227.60
CARBONOX	50 lb bag	10.00	\$ 74.60
caustic soda	25 Kg bag	4.00	\$ 176.36
Desco CF	25 lb bag	2.00	\$ 144.66
PAC-R	50 lb bag	5.00	\$ 1,063.50
sawdust	20 lb bag	40.00	\$ 146.40
soda ash	25 Kg bag	1.00	\$ 13.23
		Subtotal	\$ 5,976.37
Solids Control/Waste Mgmt			
sawdust	20 lb bag	45.00	\$ 164.70
		Subtotal	\$ 164.70
Transport/Packaging			
Trailer Rental	day(s)	4.00	\$ 220.00
		Subtotal	\$ 220.00
		Total Well Cost	\$ 7,411.07

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Products List

Well : ACC Liard Arrowhead M-35

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/Surfactant	20 l pail	1.000 \$	37.23
BARAZAN D PLUS	Viscosifier/Suspension Agent	25 lb bag	1.600 \$	249.54
bica. bonate 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



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Conclusions & Recommendations

CONCLUSIONS & RECOMMENDATIONS

311 mm - Surface Hole - AQUAGEL Mud - 0 to 201 m

Conclusions:

Use of BARAFOS and BAROID Drilling Detergent, as well as careful drilling practices, were employed to avoid mud rings. Lost circulation was manageable with the materials at hand. 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 - 201 to 736 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 736 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.



Interval Summary

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Interval #	01	Bt Size	0 mm	Hole Size Maximum	0.000 mm
Interval Start Date	Mar/02/2003	Planned Cost	\$	0.00	
Interval End Date	Mar/07/2003	Total Interval Cost	\$	7,411.07	
Interval TD Date	Mar/07/2003	Programmed Variance	\$	7,411.07	
Drilling Days	1.00	Total Products Cost	\$	6,141.07	
Rotating / Drilling Hours	48.00 / 48.00	Total Fluids Cost	\$	0.00	
Top of Int. MD/TVD	m 0.0'	Total Charges Cost	\$	1,270.00	
End of Int. MD/TVD	m 201.0' / 201.0	Total Cementing Cost	\$	0.00	
Footage	m	Fluid Cost per Vol unit	\$/m3	1,142.14	
Average ROP	m/hr 4.2	Fluid Cost / Hole Drilled	\$/m	0.00	
Max. Hole Angle	degrees 1.25	Fluid Cost / Vol Drilled	\$/m3	0.00	
Casing Size	mm 219	Total Fluid Volume	m3	6.45	
Casing Shoe MD	m 201.0	Vol Fluid / Vol Drilled	m3/m3	0.00	
Casing Length	m 201.0	Vol Fluid / Hole Drilled	m3/m	0.00	
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				
soda ash	25 Kg bag	Spud Mud	1.00	\$ 13.23
caustic soda	25 Kg bag	Spud Mud	1.00	\$ 44.09
caustic soda	25 Kg bag	AQUAGEL Mud	3.00	\$ 132.27
bicarbonate of soda	50 lb bag	AQUAGEL Mud	8.00	\$ 227.60
		Total		\$ 417.19
Filtration Control				
CARBONOX	50 lb bag	AQUAGEL Mud	10.00	\$ 74.60
PAC-R	50 lb bag	AQUAGEL Mud	5.50	\$ 1,063.50
		Total		\$ 1,138.10
Lost Circulation/Bridging Agent				
BARO-SEAL MEDIUM	16 Kg bag	Spud Mud	4.00	\$ 102.52
sawdust	20 lb bag	No Fluid	45.00	\$ 164.70
sawdust	20 lb bag	Spud Mud	40.00	\$ 146.40
		Total		\$ 413.62
Thinner/Deflocculant				
Desco CF	25 lb bag	AQUAGEL Mud	2.00	\$ 144.66
BARAFOS	23 Kg bag	Spud Mud	3.60	\$ 272.70
		Total		\$ 417.36
Viscosifier/Suspension Agent				
BARAZAN D PLUS	25 lb bag	AQUAGEL Mud	3.00	\$ 748.62
AQUAGEL	45 Kg bag	Spud Mud	100.00	\$ 814.00
AQUAGEL	45 Kg bag	AQUAGEL Mud	176.00	\$ 1,432.64
		Total		\$ 2,995.26
Weighting Material				
barite	40 Kg bag	AQUAGEL Mud	48.00	\$ 536.16
		Total		\$ 536.16
Detergent/Surfactant				
BAROID DETERGENT	20 l pail	Spud Mud	6.00	\$ 223.38

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Interval Summary

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Interval #	01	Bt Size	0 mm	Hole Size Maximum	0.000 mm
				Total	\$ 223.38
				Total Products and Base Fluids Cost	
				\$	6,141.07

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Northwest Territory

Halliburton Baroid Canada
M-35



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Interval Discussion

Interval No: 1

Top of Interval: m
Bottom of Interval: 201.0 m

INTERVAL DISCUSSION

311 mm Surface Hole to 201 m

From: Mar 3 **To:** Mar 4

Drilling Fluid: AQUAGEL Caustic

Formations: Ground water

Objectives:

Drill to 219.1 mm casing point at approx. 200 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 at 06:15 on March 3, 2003. Drilled this interval with bit 1 to 201 m.

Please Note - that no mud checks were called for during this well and no problems with fluid properties were reported.

Issues Discussion:

Encountered lost circulation from 111 m to 125 m, losing approximately 20 m³ of mud. Healed losses with Sawdust and BAROSEAL additions.

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 control the filtration rate.



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Interval Discussion

Interval No: 2

Top of Interval: 201.0 m
Bottom of Interval: 736.0 m

INTERVAL DISCUSSION

200 mm Main Hole - From: 201 m To: 736 m

From: Mar 5 To: Mar 7

Drilling Fluid: AQUAGEL Caustic

Formations: Scatter Sand, Garbutt, Spirit River, Chinkeh, and Fantasque

Objectives:

Drill to 139.7 mm casing point at approx. 525 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 201 m to 651 m. Trip for bit 2. Drill to TD at 736 m.
Please Note - that no mud checks were called for during this well and no problems with fluid properties were reported.

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 (SAFP) and BAROID Drilling Detergent were mixed to treat and avoid mud rings. CARBONOX was mixed to tighten the filtercake and control the filtration rate.



Interval Cost Breakdown

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Interval #	01	From Report Date	3/2/2003	Top of Interval	0.0	m
Hole Size	0	To Report Date	3/7/2003	Bottom of Interval	201.0	m
Material		Unit Size	Quantity	Total Cost		
Engineering/Services						
Drilling Fluids Engineer		day(s)	2.00	\$ 1,050.00		
			Subtotal	\$ 1,050.00		
Prod/Fluids : Drilling						
AQUAGEL		45 Kg bag	276.00	\$ 2,246.64		
BARAFOS		23 Kg bag	3.00	\$ 272.70		
BARAZAN D PLUS		25 lb bag	3.00	\$ 748.62		
barite		40 Kg bag	48.00	\$ 536.16		
BAROID DETERGENT		20 l pail	6.00	\$ 223.38		
BARO-SEAL MEDIUM		16 Kg bag	4.00	\$ 102.52		
bicarbonate of soda		50 lb bag	8.00	\$ 227.60		
CARBONOX		50 lb bag	10.00	\$ 74.60		
caustic soda		25 Kg bag	4.00	\$ 176.36		
Desco CF		25 lb bag	2.00	\$ 144.66		
PAC-R		50 lb bag	5.00	\$ 1,063.50		
sawdust		20 lb bag	40.00	\$ 146.40		
soda ash		25 Kg bag	1.00	\$ 13.23		
			Subtotal	\$ 5,976.37		
Solids Control/Waste Mgmt						
sawdust		20 lb bag	45.00	\$ 164.70		
			Subtotal	\$ 164.70		
Transport/Packaging						
Trailer Rental		day(s)	4.00	\$ 220.00		
			Subtotal	\$ 220.00		
			Interval Cost	\$ 7,411.07		
			Programmed Cost	\$ 0.00		
			Programmed Variance	\$ 7,411.07		

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Interval Inventory Report

Well : ACC Liard Arrowhead M-35
Operator: Anadarko

Interval #	01	From Report Date	3/2/2003	Top of Interval	0.0	m	
Hole Size	0	mm	To Report Date	3/7/2003	Bottom of Interval	201.0	m
Product Name	Unit	Starting	Received	Used	Returned	Ending	Weight
							kg
AQUAGEL	45 Kg bag		376.00	276.00		100.00	4,500.0
BARAFOS	23 Kg bag		7.00	3.00		4.00	92.0
BARAZAN D PLUS	25 lb bag		19.00	3.00		16.00	181.4
barite	40 Kg bag		581.00	48.00		533.00	21,319.8
BARC-ID DETERGENT	20 l pail		21.00	6.00		15.00	299.8
BARC-SEAL MEDIUM	16 Kg bag		120.00	4.00		116.00	1,856.0
bicarbonate of soda	50 lb bag		10.00	8.00		2.00	45.4
CARBONOX	50 lb bag		59.00	10.00		49.00	1,111.3
caustic soda	25 Kg bag		28.00	4.00		24.00	600.0
Cellophane (Cellophane)	11 Kg bag		99.00				
Desco CF	25 lb bag		14.00	2.00		12.00	136.1
PAC-R	50 lb bag		38.00	5.00		33.00	748.4
sawdust	20 lb bag		275.00	85.00		190.00	1,723.7
soda ash	25 Kg bag		19.00	1.00		18.00	450.0
Total Weight of Products in Stock, kg							33,083.9
Total Weight of Products in Stock, Metric Tons							33.06

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Operations Log Recap

For report #001A on 3/2/2003	
Activity	Operation at depth(m) 0
Rig Activity	Rigging Up FOR LOST CIRCULATION: Mix a 10+ m3 LCM pill starting with 80 - 100 viscosity mud, then mix Sawdust and BAROSEAL in a 3:1 ratio until just pumpable. Spot pill above the thief zone, pull up and let soak. Increase density with Barite if flows are encountered. Treat seepage losses with a 5:1 ratio of Sawdust and BAROSEAL as required to control losses. PRIOR TO CASING POINT: Raise viscosity by about 20 sec/L with AQUAGEL and BARAZAN in a 5:1 ratio. FOR CEMENTING: Lower viscosity to 40 - 45 sec/L with Desco and water as required.
Fluid Treatments	SPUD REPORT: Put 4 pails of Detergent in boiler room to warm. Fill tanks and mix 1 Soda Ash, then just enough Caustic to get a 8.5 to 9 pH (1/2 sack). Mix AQUAGEL with max agitation and just enough for a 40 - 45 vis (try not to overshoot by mixing too fast). FOR DRILLING SURFACE: Maintain vis 45 - 60 sec/L with AQUAGEL or as required to clean hole. Mix 2 sx of CARBONOX, 1 pail of Detergent, and 1 sack of BARAFOS (SAPP) into the active, then as directed for MUD RINGS. Use chem barrel to trickle Caustic for a pH of 8.5 - 9. Control viscosity and weight with SCE and water at the shaker as required. FOR MUD RINGS: Control drill with maximum pump rate and mix Detergent and BARAFOS as directed - at the stump or in pills.
For report #002A on 3/7/2003	
Activity	Operation at depth(m) 736
Rig Activity	Rigging Out Spudded well at 06:15 hours on March 3, 2003. Drilled 311 mm hole to 201 m. Lost circulation (partial returns) from 111 m to 125 m - lost approx. 20 m3 of spud mud. Drilled 200 mm hole to 651 m. Tripped for bit 3 at 651 m. Drilled 200 mm hole to 736 m.
Fluid Treatments	No treatment recommendations for this report.



Bit Record

Well : ACC Liard Arrowhead M-35

Operator: Anadarko

Run No	Bit No	Bit Size mm	Bit Manufacturer	Bit Type	Bit Style	ADC 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	GTCSI	MT		B22179	3x19	201.0	201.0	0.0	0.0	0	0	0.000	Spud Mud	0	0.00		
2	2RR	200	GEO DIAMON	MA74YPX	FC		JS7381	4x7.1	651.0	450.0	0.0	0.0	0	0	0.000	AQUAGEL Mud	0	0.00		
3	3	200	SMITH	F12YGP	IN		MK4350	3x11.1	736.0	85.0	0.0	0.0	0	0	0.000	AQUAGEL Mud	0	0.00		

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



Well: ACC Liard Arrowhead M-35
Operator: Anadarko

Personnel Register

Baroid Field Service Representatives: Curtis Scoville and John Heppleston.

Baroid Technical Service Representative: Al Toney.



Deviation Actual

Well: ACC Liard Arrowhead M-35

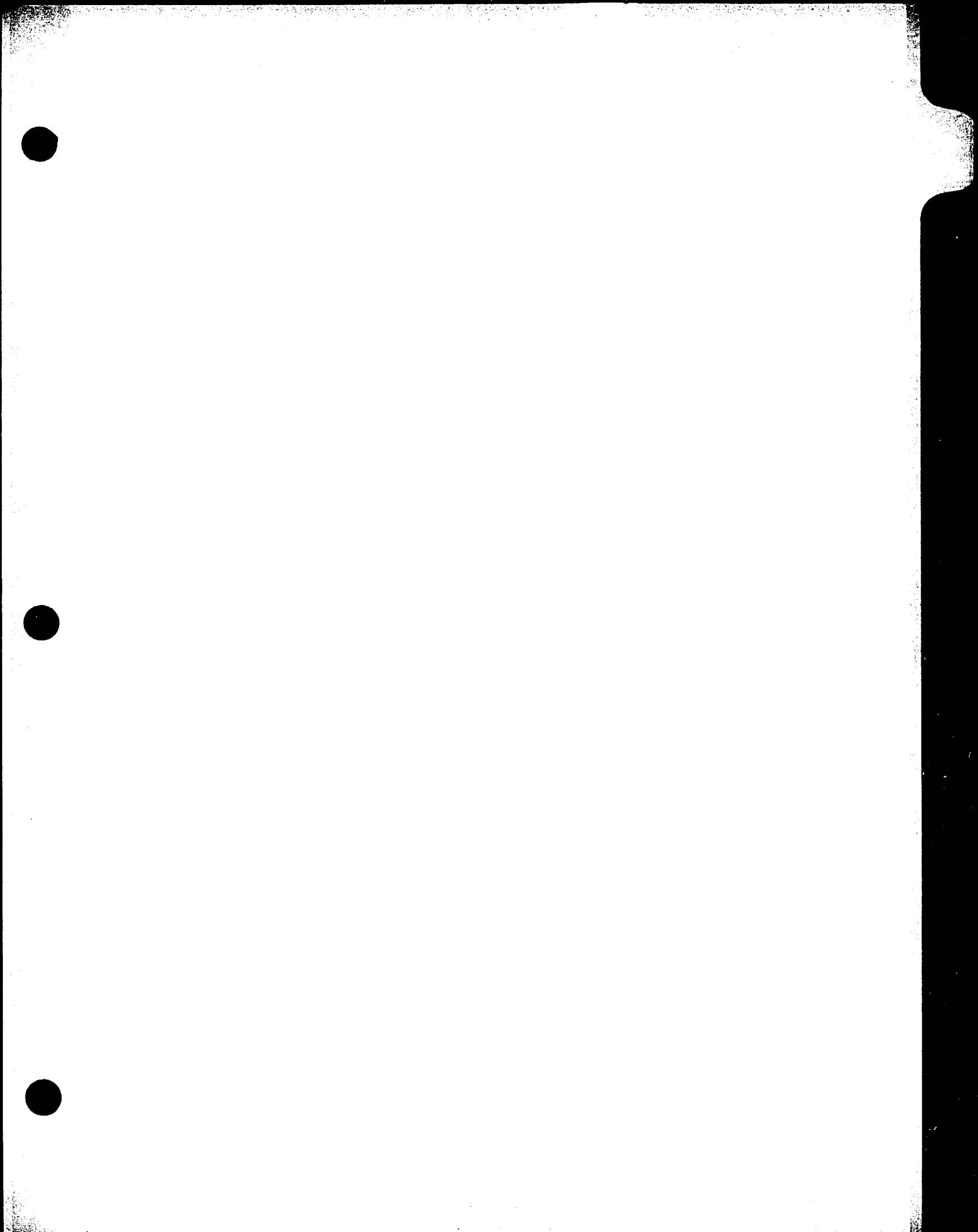
Operator: Anadarko

Survey Date	MD m	TVD m	Angle	Direction	Horiz Displacement m
3/7/2003	231.0	231.0	0.50	0.0	
3/7/2003	278.0	278.0	0.25	0.0	
3/7/2003	383.0	383.0	1.00	0.0	
3/7/2003	434.0	434.0	1.25	0.0	
3/7/2003	480.0	480.0	1.00	0.0	

Canada

Arrowhead
Northwest Territory

Halliburton Baroid Canada
M-35



ANADARKO CANADA CORPORATION

SOUTH WEST ARROW HEAD RIVER

M-35

A Gyrodata Directional Survey

for

ANADARKO CANADA CORPORATION

Well Name: **SOUTH WEST ARROW HEAD RIVER,**
Surface Location: **M-35,**

Job Number: **C0303GDM077**

Run Date: **03/10/2003 11:56:51 AM**

Surveyor: **Blane Hoddow**

Calculation Method: **MINIMUM CURVATURE**

Survey Latitude: **60.245740 ° N** Longitude: **123.723000 ° W**

Azimuth Correction: **None**

Gyro: Bearings are Relative to True North

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Local Horizontal Reference

A Gyrodata Directional Survey

ANADARKO CANADA CORPORATION

Well Name: **SOUTH WEST ARROW HEAD RIVER**

Surface Location: **M-35**

Job Number: **C0303GDM077**

MEASURED DEPTH meters	I N C L deg.	AZIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. meters	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 4.0 METRES.							
34.6	0.06	238.63	34.6	0.0	238.6	0.01 S 0.02 W	0.05
52.8	0.22	337.90	52.8	0.0	296.8	0.02 N 0.04 W	0.40
71.5	0.20	287.07	71.5	0.1	307.3	0.06 N 0.08 W	0.29
94.7	0.41	302.98	94.7	0.2	302.1	0.12 N 0.19 W	0.29
112.8	0.33	289.82	112.8	0.3	300.4	0.17 N 0.29 W	0.19
132.0	0.36	324.82	132.0	0.4	302.3	0.24 N 0.38 W	0.33
150.6	0.11	238.71	150.6	0.5	303.1	0.28 N 0.43 W	0.60
169.3	0.31	187.43	169.3	0.5	296.0	0.22 N 0.45 W	0.41
188.0	0.56	182.19	188.0	0.5	279.7	0.08 N 0.46 W	0.41
206.9	0.73	191.10	206.9	0.5	255.0	0.13 S 0.49 W	0.31
226.0	0.65	193.61	226.0	0.6	236.4	0.36 S 0.54 W	0.13
244.7	0.65	194.80	244.7	0.8	226.2	0.56 S 0.59 W	0.02
263.8	0.75	201.23	263.8	1.0	220.1	0.78 S 0.66 W	0.19
282.9	0.74	203.75	282.9	1.3	216.7	1.01 S 0.76 W	0.05
301.9	0.75	210.51	301.9	1.5	215.2	1.23 S 0.87 W	0.14
320.9	0.75	210.38	320.9	1.8	214.5	1.45 S 0.99 W	0.01
340.2	0.74	206.48	340.1	2.0	213.8	1.67 S 1.11 W	0.08
359.3	0.73	203.78	359.3	2.2	212.8	1.89 S 1.22 W	0.06
378.0	0.75	199.29	377.9	2.5	211.7	2.11 S 1.31 W	0.10
396.8	0.70	203.61	396.8	2.7	210.8	2.33 S 1.39 W	0.12
415.7	0.72	213.75	415.7	3.0	210.7	2.54 S 1.51 W	0.20
434.7	0.74	214.20	434.6	3.2	210.9	2.74 S 1.64 W	0.03
453.1	0.77	218.49	453.1	3.4	211.3	2.94 S 1.79 W	0.10
472.1	0.81	220.22	472.1	3.7	211.9	3.14 S 1.95 W	0.07
491.4	0.82	221.99	491.4	4.0	212.5	3.35 S 2.13 W	0.05
509.9	0.74	219.41	509.9	4.2	213.0	3.54 S 2.30 W	0.14
528.9	0.81	217.18	528.9	4.5	213.3	3.74 S 2.46 W	0.11
548.1	0.94	222.17	548.0	4.8	213.7	3.96 S 2.64 W	0.23
567.3	0.92	217.51	567.2	5.1	214.1	4.20 S 2.84 W	0.12
586.5	1.21	223.69	586.5	5.4	214.5	4.47 S 3.08 W	0.48
605.9	0.97	221.54	605.8	5.8	215.1	4.74 S 3.33 W	0.37
625.1	0.78	217.73	625.1	6.1	215.3	4.97 S 3.52 W	0.32
644.4	0.63	223.24	644.4	6.3	215.5	5.15 S 3.67 W	0.26
663.9	0.49	248.12	663.9	6.5	216.0	5.26 S 3.82 W	0.42
683.1	0.56	261.11	683.0	6.6	216.9	5.30 S 3.99 W	0.21
702.4	0.67	271.92	702.3	6.8	218.3	5.32 S 4.20 W	0.25

ANADARKO CANADA CORPORATIONWell Name: **SOUTH WEST ARROW HEAD RIVER**Surface Location: **M-35**Job Number: **C0303GDM077**

MEASURED DEPTH meters	I N C L deg.	AzIMUTH deg.	VERTICAL DEPTH meters	CLOSURE DIST. AZIMUTH meters deg.	HORIZONTAL COORDINATES meters	DOGLE SEVERITY deg/30m
721.6	0.61	282.90	721.6	6.9 219.8	5.29 S 4.41 W	0.22
733.4	0.52	294.97	733.4	6.9 220.7	5.25 S 4.52 W	0.38

Final Station Closure: Distance: **6.93 m** Az: **220.69 °**

Casing and Cementing Report

Well Name	ANADARKO SW ARROWHEAD M-35		Well License Number	1989	
Event	ORIG COMPLETION	21/03/03	Well License Date	20/02/03	
Objectives	DEVELOPMENT COMPLETION		Field	CHINKEH	
Rig Name & No.	<no data>	<no data>	Event Final TMD / TVD	727.00 m	/ 0.00 m
KB Elev.	351.00 m		Sidetrack KO Depth / PB Depth	0.00 m	/ 0.00 m
KB to GL	4.72 m	Deviation V	Event Final Well Plug Back Depth/PBTVD	0.00 m	/ 0.00 m

Component Information	Depth	Equipment Diagram	Cement Interval
42 - CASING JOINT(S) - IPSCO - 540.560 m	0.23 m		0.00 m - 201.00 m
	9.67 m		
	12.71 m		
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.370 m	186.78 m		
1 - CASING JOINT(S) - OPESO - 13.400 m	187.15 m		
1 - CASING FLOAT SHOE - WEATHERFORD - 0.450 m	200.55 m		
	201.00 m		
1 - PUP JOINT - IPSCO - 4.500 m	540.56 m		
13 - CASING JOINT(S) - IPSCO - 161.990 m	545.06 m		
	566.48 m		
	569.52 m		0.00 m - 737.00 m
	570.09 m		
	571.32 m		
	571.56 m		
	574.66 m		
	574.92 m		
	575.07 m		
1 - PUP JOINT - IPSCO - 4.190 m	707.05 m		
1 - CASING JOINT(S) - IPSCO - 12.510 m	711.24 m		
1 - CASING FLOAT COLLAR - WEATHERFORD - 0.340 m	723.75 m		
1 - CASING JOINT(S) - IPSCO - 12.510 m	724.09 m		
1 - CASING FLOAT SHOE - WEATHERFORD - 0.400 m	736.60 m		
	737.00 m		

String Details

ANADARKO SW ARROWHEAD M-35

ORIG COMPLETION 03/03/03

<no data>

String Name	Installed Date	String Status	Length	String Landed Depth	Suspension Point	String Depth Correction
SURFACE CASING	04/03/03	INSTALLED	201.0 m	201.0 m		0.0 m
PRODUCTION CAS	07/03/03	INSTALLED	737.0 m	737.0 m		0.0 m
PACKER ASSEMBL	28/03/03	INSTALLED	575.1 m	575.1 m	SURFACE EQUIPM	0.0 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
14	CASING JOINT(S)	186.780 m	202.49 mm	219.08 mm	J55	35.72 kg/m	0.00 m
1	CASING FLOAT COLLAR	0.370 m	202.49 mm	219.08 mm	J55	35.72 kg/m	186.78 m
1	CASING JOINT(S)	13.400 m	202.49 mm	219.08 mm	J55	35.72 kg/m	187.15 m
1	CASING FLOAT SHOE	0.450 m	202.49 mm	219.08 mm	J55	35.72 kg/m	200.55 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
42	CASING JOINT(S)	540.560 m	124.13 mm	139.70 mm	J55	20.83 kg/m	0.00 m
1	PUP JOINT	4.500 m	124.13 mm	139.70 mm	J55	20.83 kg/m	540.56 m
13	CASING JOINT(S)	161.990 m	124.13 mm	139.70 mm	J55	20.83 kg/m	545.06 m
1	PUP JOINT	4.120 m	124.13 mm	139.70 mm	J55	20.83 kg/m	707.05 m
1	CASING JOINT(S)	12.510 m	124.13 mm	139.70 mm	J55	20.83 kg/m	711.24 m
1	CASING FLOAT COLLAR	0.340 m	124.13 mm	139.70 mm	J55	20.83 kg/m	723.75 m
1	CASING JOINT(S)	12.510 m	124.13 mm	139.70 mm	J55	20.83 kg/m	724.09 m
1	CASING FLOAT SHOE	0.400 m	124.13 mm	139.70 mm	J55	20.83 kg/m	736.60 m

# of Joints	Name	Length	Min. I.D.	Nom. Size	Grade	Weight	Depth
1	TUBING HANGER	0.230 m	0.00 mm	19.05 mm		0.00 kg/m	0.00 m
1	TUBING JOINT(S)	9.440 m	59.61 mm	73.00 mm	J55	9.67 kg/m	0.23 m
1	PUP JOINT	3.040 m	59.61 mm	73.00 mm	J55	9.67 kg/m	9.67 m
59	TUBING JOINT(S)	553.770 m	59.61 mm	73.00 mm	J55	9.67 kg/m	12.71 m
1	PUP JOINT	3.040 m	59.61 mm	73.00 mm	J55	9.67 kg/m	566.48 m
1	ON-OFF TOOL	0.570 m	122.56 mm	139.70 mm	J55	23.07 kg/m	569.52 m
1	PACKER	1.230 m	122.56 mm	139.70 mm	J55	23.07 kg/m	570.09 m
1	CROSSOVER	0.240 m	48.29 mm	60.33 mm	J55	6.99 kg/m	571.32 m
1	PUP JOINT	3.100 m	48.29 mm	60.33 mm	J55	6.99 kg/m	571.56 m
1	NO GO NIPPLE	0.260 m	48.29 mm	60.33 mm	J55	6.99 kg/m	574.66 m
1	WIRELINE RE-ENTRY	0.150 m	48.29 mm	60.33 mm	J55	6.99 kg/m	574.92 m

Cement Data**ANADARKO SW ARROWHEAD M-35****ORIG COMPLETION 03/03/03****<no data>**

Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	NEAT	CLASS G	0.00 m	201.00 m	11.1 m ³
Stage Desc.	Slurry Type	Slurry Desc.	Slurry Class	Interval From	Interval To	Slurry Total Volume
SINGLE STAGE	TAIL	THIXMIX II	CLASS G	0.00 m	737.00 m	18.0 m ³

Survey Plan View

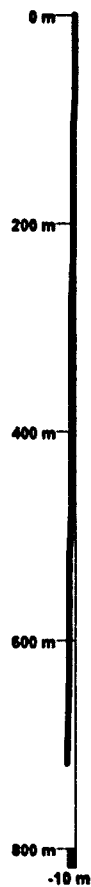
North/South



East/West

Vertical Section

TVD



Vertical Section @ 180.0 deg.

Anadarko SW Arrowhead

M-35

Well Summary

Initial Completion

March 21/03 To March 27/03

Supervisors: Joe Graves

Anadarko Canada Corporation
Operations Summary Report

Page 1 of 2

Legal Well Name: ANADARKO SW ARROWHEAD M-35
Common Well Name: SW ARROWHEAD M-35
Event Name: ORIG COMPLETION
Contractor Name:
Rig Name:

Spud Date: 3/3/2003
End:
Group:

Start: 3/21/2003
Rig Release: 3/8/2003
Rig Number:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/21/2003	08:00 - 09:30	1.50	30	A	EVALPR	MOVE CONCORD #4 FROM J-74 TO LOCATION, SPOT RIG AND CONDUCT SAFETY MEETING, RIG IN SERVICE RIG AND EQUIPMENT
	09:30 - 12:00	2.50	33		EVALPR	RIG IN IPS ELECTRIC LINE AND RUN GR, CCL, CBL, VDL FROM PBTD AT 708.4 MKB TO SURFACE. BOND GOOD, POOH AND RIG OUT IPS.
	12:00 - 14:00	2.00	30		EVALPR	TALLY 73 MM TUBING AND WAQIT ON COOPER-CAMERON TO INSTAL WELL HEAD. SDFD AT 1400 HRS.
3/22/2003	07:30 - 08:00	0.50	48	F	EVALPR	CONDUCT SAFETY MEETING
	08:00 - 11:20	3.33	30		EVALPR	INSTAL BOP'S AND PRESSURE TEST RAMS TO 14000 KPA HIGH AND 1400 KPA LOW, ANNULAR TO 10000 KPA. RUN IN HOLE WITH 120.8 MM BIT AND CASING SCRAPER FOR 139.7 MM CASING, TAG PBTD AT 708 MKB, CIRCULATE HOLE TO INHIBITED 3% KCL WATER (8.5 M3), SWAB BACK 4.5 M3 OF FLUID AND POOH WITH BIT AND SCRAPER 1120 HRS
	11:20 - 12:15	0.92	35	C	EVALPR	RIG IN IPS AND PERFORATE 587 - 591 MKB WITH 101.6 MM ERHSC, 32 GRAM, 17 SPM 60 DEGREE PHASING AT 1152 HRS. POOH WITH WIRELINE, NO SIGN OF GAS.
	12:15 - 12:30	0.25	47		EVALPR	PICK UP TAIL PIPE ASSEMBLY AND PACKER AND START IN HOLE. IN WITH FIRST JOINT OF TUBING AND WELL CAME IN, .5 M3 TO 1 M3 OF KCL WATER SPILL DUE TO DELAY IN SHUTTING IN AND SECURING WELL.
	12:30 - 13:30	1.00	47		EVALPR	CLEAN UP SPILL
	13:30 - 18:00	4.50	47		EVALPR	ATEMPT TO TOP KILL WELL, PUMPED A TOTAL OF 5.85 M3 OF 3% KCL INTO WELL, SHUT IN PRESSURE 5000 KPA AT 1800 HRS.
3/23/2003	07:30 - 07:45	0.25	48		EVALPR	CONDUCT SAFETY MEETING.
	07:15 - 09:10	1.92	30		EVALPR	BLEED OFF WELL HEAD PRESSURE (1600 KPA), WELL DEAD, PULL UP AND INSPECT PACKER, RUN IN HOLE WITH TAIL PIPE, PACKER AND 73 MM TUBING. SET PACKER AT 574.21 MKB IN 5000 DAN COMPRESSION LANDED IN TUBING HANGER, BOTTOM OF TAIL PIPE AT 578.48 MKB, 48.02 MM "R" NIPPLE AT 578.05, ON-OFF TOOL WITH 47.63 MM "F" PROFILE AT 572.91 MKB.
	09:10 - 10:10	1.00	30	B	EVALPR	PUMP 22 L DIESEL FUEL DOWN ANNULUS AND PRESSURE TEST PACKER ETC TO 18,000 KPA, TEST GOOD, REMOVE BOP'S AND INSTAL WELL HEAD.
	10:10 - 11:30	1.33	41		EVALPR	RIG UP AND SWAB IN WELL, SEVEN SWABS AND RECOVERED 2.62 M3 OF FLUID, SALINITY 5000 PPM AND PH 7, WELL FLOWINF, SHUT IN AT 1130 HRS
	11:30 - 13:30	2.00	30		EVALPR	TWO HOUR SHUT IN 3000 KPA.
	13:30 - 18:00	4.50			EVALPR	WELL BLEED OFF IN FIVE MINUTES, PULLED ONE SWAB AND WELL FLOWING. SHUT IN AT 1600 HRS, RECORD BUILD UPS, 3050 KPA AR 1800 HRS. SDFN.
3/24/2003	08:00 - 08:30	0.50	48		EVALPR	CONDUCT SAFETY MEETING WITH ALL PERSONEL.
	08:30 - 18:00	9.50	30		EVALPR	SITP 3000 KPA AND SICP 400 KPA, RECORD PRESSURES AND WAIT ON TEST EQUIPMENT. PRESSURES UNCHANGED AT 1700 HRS. SHUT DOWN FOR DAY. (TEST EQUIPMENT HELD UP AT SECURITY GATE, ONLY ALLOWED TO TRAVEL ON 72 ROAD FROM 2000 HRS TO 1200 HRS FOLLOWING DAY.)
	18:00 - 19:30	1.50	33		EVALPR	RIG IN RAPID WIRELINE AND SET TANDEM ELECTRONIC RECORDSERS ON DART IN "R" NIPPLE AT 578.05 MKB. ON BOTTOM AT 1813 HRS. POOH AND RIG OUT AT 1930 HRS.
3/25/2003	07:30 - 09:30	2.00	32	D	EVALPR	WELL SHUT IN OVER NIGHT AND OPENED ON CLEAN UP FOR TWO HOURS AT 0730 HRS. FINAL GAS RATE .53 10/3-M/3 PER DAY

Anadarko Canada Corporation
Operations Summary Report

Page 2 of 2

Legal Well Name: ANADARKO SW ARROWHEAD M-35
Common Well Name: SW ARROWHEAD M-35
Event Name: ORIG COMPLETION
Contractor Name:
Rig Name:

Spud Date: 3/3/2003
End:
Group:
Rig Number:

Date	From - To	Hours	Code	Sub Code	Phase	Description of Operations
3/25/2003	07:30 - 09:30	2.00	32	D	EVALPR	AND TUBING FLOWING PRESSURE 770 KPA AT 0930 HRS. SHUT IN AND RECORD PRESSURE BUILD UP FOR 12 HRS.
	09:30 - 19:30	10.00			EVALPR	TUBING SHUT IN PRESSURE 3005 KPA AT 1130 HRS. AND 3010 KPA AT 1930 HRS , START FLOW TEST WELL AT 1930 HRS ON 19.05 MM CHOKE.
3/26/2003	00:00 - 06:00	6.00	32	D	EVALPR	OPENED WELL ON 36 HR TEST AT 2130 2003/03/25. 19.05 MM CHOKE AND 19.05 MM ORFICE PLATE IN PLACE AT MIDNIGHT , GAS RATE 6.46 10/3-M/3 PER DAY, FLOWING AT 180 KPA TUBING BACK PRESSURE, RECOVERED 2.83 M3 OF FLUID IN TWO AND A HALF HRS. SALINITY 10,000 PPM AND PH 9. GAS RATE AT 0600 HRS 8.42 10/3-M/3 WITH 280 KPA TUBING BACK PRESSURE PRODUCED 6.81 M3 OF FLUID
	06:00 - 12:00	6.00	32	D	EVALPR	AT 1200 HRS GAS RATE 9.36 10/3-M/3 WITH 350 KPA BACK PRESSURE AND A TOTAL OF 10.13 M3 OF FLUID RECOVERED, SALINITY 9000 PPM AND PH 9
	12:00 - 19:00	7.00	32	D	EVALPR	GAS RATE 10.25 10/3-M/3 PER DAY, TUBING FLOWING PRESSURE 385 KPA, PRODUCED 3.21 M3 OF FLUID IN LAST 6 HRS SALINITY 9000 PPM AND PH 9
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
	08:15 - 13:31	5.27	32	D	EVALPR	AT 08:00 AM, THE CHINKEH FORMATION REMAINS FLOWING ON A 19.05 MM CHOKE, FTHP = 435.0 KPA, GAS RATE = 11.36 E3M3/D, FLUID SAMPLES SHOW A SALINITY OF 9,000 PPM WITH A PH = 9, WATER PRODUCTION = .43 M3 PER/HR. AT 09:30 AM THE WELL WAS SHUT IN, FTHP AT THAT TIME = 420.0 KPA, GAS RATE = 11.53 E3M3/D, SALINITY = 9000 PPM WITH A PH = 9, WATER PRODUCTION = .62 M3 PER/HR. TESTERS INTRUCTED TO OBTAIN GAS AND WATER SAMPLES FOR THE LAB, TESTERS WERE ALSO INSTRUCTED TO PERFORM PRESSURE BUILD-UPS WHILE RIGGING OUT. SITP AT 13:30 HRS 3960.0 KPA. PREPARE TO MOVE OFF OF THE LOCATION WHEN ROAD BANDS PERMIT, SDFD AT 13:31 HRS

Perforating Report

Legal Well Name: ANADARKO SW ARROWHEAD M-35
 Common Well Name: SW ARROWHEAD M-35
 Event Name: ORIG COMPLETION

Report #: 1
 Start: 3/21/2003

Spud Date: 3/3/2003
 Report Date: 3/22/2003
 End:

General

Contractor: IPS WIRELINE
 Job Method: PERFORATE
 Perforated Assembly: PRODUCTION CASING

Supervisor: JOE GRAVES 250-261-0
 Conveyed Method: WIRELINE

Initial Conditions

Fluid Type: CACL2 WATER
 Surf. Pressure: (kPa)
 Fluid Level TVD: (m)
 Hydro Pressure: (kPa)
 Condition:

Fluid Density: (kg/m³)
 Res. Pressure: (kPa) @ (m)
 Fluid Head TVD: (m)
 Pressure Diff.: (kPa)

Summary

Gross Int.: 587.00 to 591.00 (m)
 # of Int.: 1
 Total Shots: 68
 AV Shot Dens.: 17.00 (/m)

Time Start/End: /
 Net Shot: 4.0 (m)
 Final Press. / Time: (kPa) / :

Perforated Intervals

Time	Formation	CCL @ (m)	CCL-TS (m)	TS-BS (m)	Top (m)	Base (m)	SI(/m)	Diam. (mm)	Carr. Type	Cr. Size (mm)	Phasing (°)	Carr. Manuf.	Chg. Desc	Cg. Size (g)	Chg. Manuf.	Misrun
	CHINKEH	586.00	1.00	4.00	587.00	591.00	17.00	101.000	ERHSC	101.000	60.000	GRISS		36.00		

Anadarko Canada Corporation
Wellbore Equipment Report

Page 1 of 1

Legal Well Name: ANADARKO SW ARROWHEAD M-35
Common Well Name: SW ARROWHEAD M-35
Event Name: ORIG COMPLETION

Report #: 1
Start: 3/21/2003

Spud Date: 3/3/2003
Report Date: 3/28/2003
End:

Assembly Name: PACKER ASSEMBLY
Suspended From: SURFACE EQUIPMENT @ (m)
TMD Correction: (m)
Landed TMD: 575.07 (m)

Install Date: 3/28/2003
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
18.00	TUBING HANGER	COOPER CAMERON	1					0.23		HIPPON		EUE	
73.00	TUBING JOINT(S)	IPSCO	1	68.81	73.03	9.67	J65	9.44	0.23	IPSCO		EUE	
73.00	PUP JOINT	IPSCO	1	68.81	73.03	9.67	J65	3.04	9.67	IPSCO		EUE	
73.00	TUBING JOINT(S)	IPSCO	59	68.81	73.03	9.67	J65	663.77	12.71	IPSCO		EUE	
73.00	PUP JOINT	IPSCO	1	68.81	73.03	9.67	J65	3.04	666.48	IPSCO		EUE	
139.70	ON-OFF TOOL	139.7 MM HALLIBURTON ON/OFF CON	1	122.56	139.70	23.07	J65	0.57	666.52	GUINERSON		EUE	C/W 47.63 MM BAKER "F"
139.70	PACKER	139.7 MM HALLIBURTON PLS 10 K	1	122.56	139.70	23.07	J65	1.23	670.09			EUE	
60.33	CROSSOVER	73.0 MM X 60.3 MM	1	48.29	60.33	6.99	J65	0.24	671.32	IPSCO		EUE	
60.33	PUP JOINT	IPSCO	1	48.29	60.33	6.99	J65	3.10	671.56	IPSCO		EUE	
60.33	NO GO NIPPLE	48.02 MM BAKER "R" C/W 44.7 MM NOGO	1	48.29	60.33	6.99	J65	0.26	674.86	BAKER		EUE	
60.33	WIRELINE RE-ENTRY	IPSCO	1	48.29	60.33	6.99	J65	0.15	674.92	IPSCO		EUE	

Final Pipe Tally Report

Legal Well Name: ANADARKO SW ARROWHEAD M-35

Spud Date: 3/3/2003

Common Well Name: SW ARROWHEAD M-35

Report #: 1

Report Date: 3/21/2003

Event Name: ORIG COMPLETION

Start: 3/21/2003

End:

Date Run: 3/21/2003

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		32			9.25	300.41	
2			9.57	18.94		33			9.22	309.63	
3			9.58	28.52		34			9.58	319.21	
4			9.62	38.14		35			9.58	328.79	
5			9.58	47.72		36			9.37	338.16	
6			9.58	57.30		37			9.57	347.73	
7			9.57	66.87		38			9.64	357.37	
8			9.56	76.43		39			9.25	366.62	
9			9.58	86.01		40			9.26	375.88	
10			9.30	95.31		41			9.49	385.37	
11			9.56	104.87		42			9.37	394.74	
12			9.25	114.12		43			9.57	404.31	
13			9.56	123.68		44			9.26	413.57	
14			9.48	133.16		45			9.33	422.90	
15			9.31	142.47		46			9.57	432.47	
16			9.30	151.77		47			8.55	441.02	
17			9.25	161.02		48			9.30	450.32	
18			9.27	170.29		49			9.58	459.90	
19			9.31	179.60		50			9.30	469.20	
20			9.45	189.05		51			9.26	478.46	
21			8.99	198.04		52			9.28	487.74	
22			9.20	207.24		53			9.50	497.24	
23			9.35	216.59		54			9.60	506.84	
24			9.18	225.77		55			9.27	516.11	
25			8.95	234.72		56			9.47	525.58	
26			9.54	244.26		57			9.24	534.82	
27			9.29	253.55		58			9.60	544.42	
28			9.50	263.05		59			9.35	553.77	
29			9.27	272.32		60			9.57	563.34	
30			9.28	281.60		61					
31			9.56	291.16							

Summary Information

Well Name ANADARKO SW ARROWHEAD M-35
 Event ORIG COMPLETION 21/03/2003
 Event 2nd Obj COMPLETION - GAS
 Field CHINKEH
 Lahee OUT
 KB Elev. 351.00 m

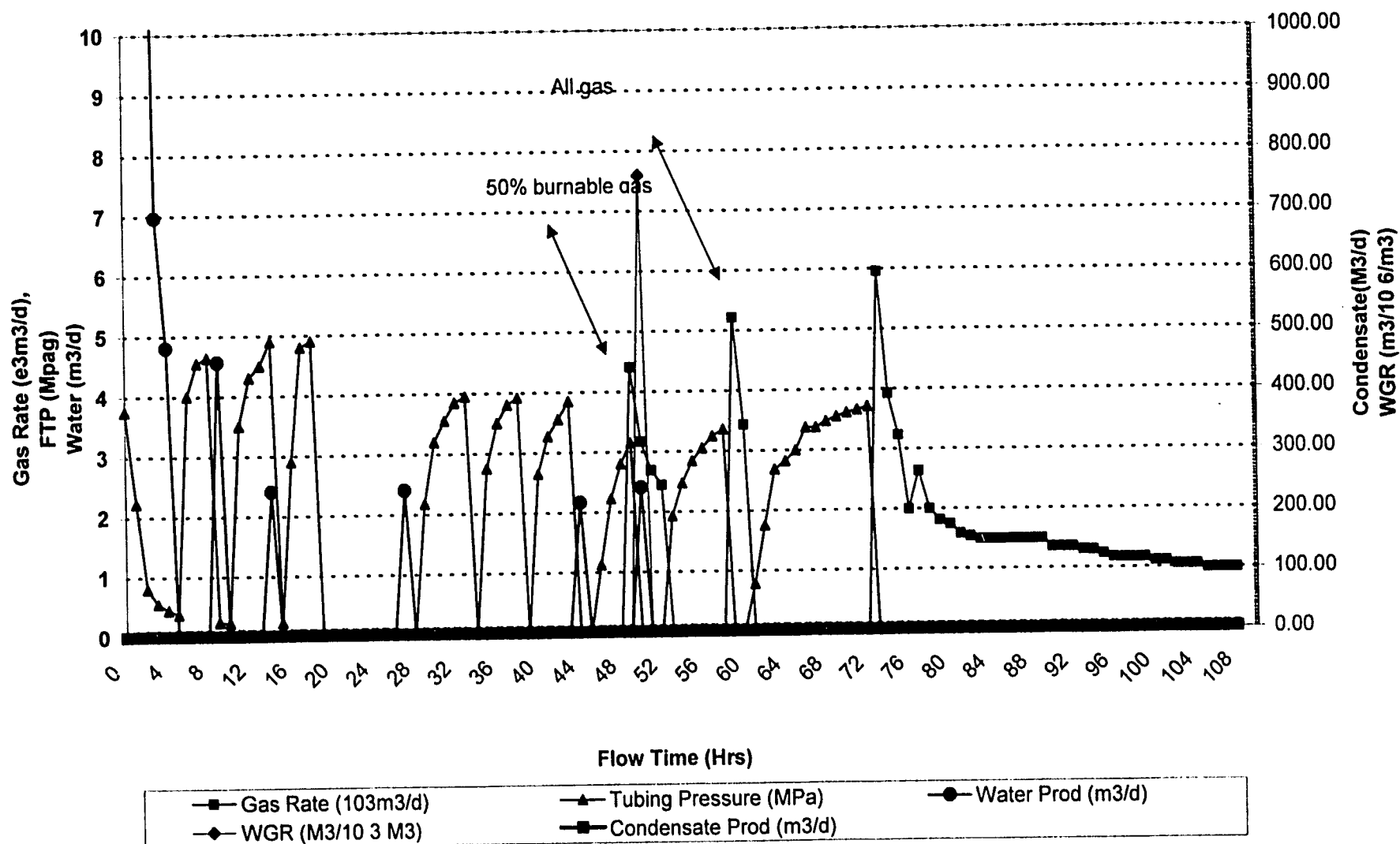
Well License # 1989
 Spud Date 03/03/2003
 Rlg Name <no data> <no data>
 TMD 0.00 m
 TVD 0.00 m
 AFE Cost 0

PERF INTVL	Equipment Diagram	TMD
COOPER CAMERON - NIPPON -		
IPSCO - IPSCO -		0.23 m
IPSCO - IPSCO -		9.67 m
IPSCO - IPSCO -		12.71 m
		201.00 m
IPSCO - IPSCO -		566.48 m
139.7 MM HALLIBURTON ON/OFF CON - GUIBERSON - C/W 47.63 MM BAKER "F"		569.52 m
139.7 MM HALLIBURTON PLS 10 K - -		570.09 m
73.0 MM X 60.3 MM - IPSCO -		571.32 m
IPSCO - IPSCO -		571.56 m
48.02 MM BAKER "R" C/W 44.7 MM NO/GO - BAKER -		574.66 m
IPSCO - IPSCO -		574.92 m
587.00 m - 591.00 m - CHINKEH		591.00 m
		737.00 m



1999

Anadarko Arrowhead J-74 Metric Chinkeh Formation





eREPORT



Prepared for:
Mike Varga
Anadarko Canada Corporation
#1, 875-100th Avenue sw
Fort St John, BC, V1J 1W9

Anadarko S.W. Arrowhead
M-35
Chinkeh
Flow Test
March 25-27, 2003



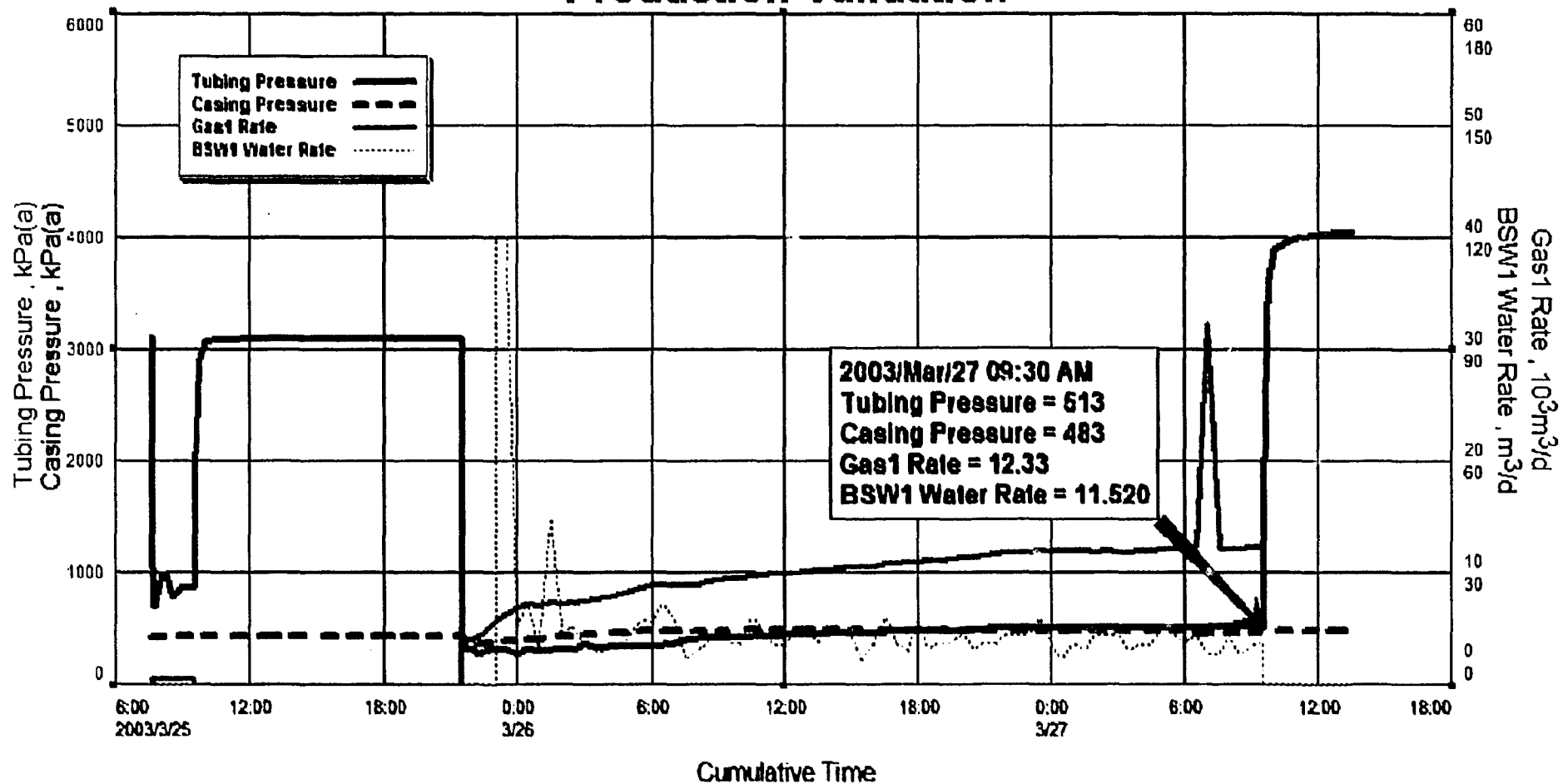
Data Validation



Anadarko Canada Corporation
M-35
Start Test Date: 2003/03/25
Final Test Date: 2003/03/27

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

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: Phone:
E-Mail: Fax:

Well Information

Well Name: Anadarko S.W. Arrowhead
Operator: Anadarko Canada Corporation
Surface Location:
Downhole Location: M-35

Test Information

Company: Arctic Energy Systems Inc.
Test Rep: Cory Young Supervisor: T.Fath
Test Type: Flow Test Test Unit: 02
Start Date: 2003/03/25 Start Time: 07:30:00
End Date: 2003/03/27 End Time: 13:31:00
Report Date: 2003/04/03 Job Number: 1370
Prepared By: Lizzy Davies Qualified By: David Leech

Remarks:

WELL INFORMATION

Well Information

Well Name: Anadarko S.W. Arrowhead
 Operator: Anadarko Canada Corporation
 Well Location: M-35
 Surface Location:
 Field: Arrowhead
 Well Type:
 Pool: 587.0 - 591.0 mKB
 Formation: Chinkeh

Perforation Type:

Pool Datum: m
 Datum Depth: mm
 Producing Through: Size: mm
 Elevation Referenced From: 346.28 m GL
 Elevation Referenced To: 351.00 m KB
 Offset: 4.72 m

Remarks:

Production Intervals

Production Interval & MPP Reference To:			KB	MPP Pressure Reference:	
	From - m	To - m		Depth - m	Pressure - kPa
1	587.00	591.00	1	589.00	

Anadarko Canada Corporation
M-35
2003/03/25
2003/03/27

FieldNotes METER REPORT

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

Orifice Meter 1

Meter Type:
Meter Size:
Previous Gas Production:
Tap Type:
Tap Location:

Orifice
97.33 mm
0.000 10³m³
F
D

Gas Gravity(G): 0.568
CO2: 1.26 %
H2S: 0.00 %
N2: 0.26 %
Critical Temperature (Tc): 191.80 K
Critical Pressure (PC): 4629.00 kPa

Produced Volume 1

Meter Type:
Measurement Type:
Previous Oil Production:
Previous Water Production:
Oil Gravity:

Produced Volume
C
0.000 m³
0.000 m³

Anadarko Canada Corporation
M-35
Start Test Date: 2003/03/25
Final Test Date: 2003/03/27

FieldNotes

Field Measurements

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

	Clock	Cum	Cum Flow C	TBG	CSG	WHChoke	Static	Diff	MR Orifice	Gas	Gas	fld	Inc	BS	Inc	Cum.	Inc	Cum.	Cum.
Date	Time	Time	Time	Pres	Pres	Size	Pres	Pres	Size	Rate	Cum	lev	Fld	BSW	BSW	BSW	Oil	Oil	Fluid
yyyy/mm/dd hh:mm:ss	hr	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	10 ³ m ³ /d	10 ³ m ³	m ³	m ³	%	m ³	m ³	m ³
1 2003/03/25	07:30:00	0.0000		3118	418														
2	07:31:00	0.0167		Open well to flow on a 18/64 or 7.14mm choke															
3	07:35:00	0.0833		1043	418		7.14	93	0.00	0	0.00	0.00	0.00						
4	07:40:00	0.1667	0.0833	698	418														
5	07:45:00	0.2500	0.1667	748	418	2	7.14						0.00	0.00		0.00	0.00	0.00	0.00
6	08:00:00	0.5000	0.4167	988	418	2		109	1.74	-16	12.70	0.51	0.01	0.00	0.00		0.00	0.00	0.00
7	08:15:00	0.7500	0.6667	973	433	1	7.14	109	1.99	-16	12.70	0.55	0.01						
8	08:30:00	1.0000	0.9167	783	433	1		109	1.74	-13	12.70	0.51	0.02						
9	09:00:00	1.5000	1.4167	878	433	2	7.14	121	1.74	-10	12.70	0.53	0.03						
10	09:30:00	2.0000	1.9167	863	433	2		124	1.99	-7	12.70	0.57	0.04	0.00	0.00		0.00	0.00	0.00
11	09:31:00	2.0167		Shut in well record pressure build - up.															
12	09:35:00	2.0833		2078	433														
13	09:40:00	2.1667		2713	433														
14	09:45:00	2.2500		2908	433														
15	10:00:00	2.5000		3073	433														
16	10:15:00	2.7500		3093	433														
17	10:30:00	3.0000		3093	433														
18	11:00:00	3.5000		3093	433														
19	11:30:00	4.0000		3098	433														
20	12:00:00	4.5000		3098	433														
21	13:00:00	5.5000		3098	433														
22	14:00:00	6.5000		3098	433														
23	15:00:00	7.5000		3103	433														
24	16:00:00	8.5000		3103	433														
25	17:00:00	9.5000		3103	433														
26	18:00:00	10.5000		3103	433														
27	19:00:00	11.5000		3103	433														
28	20:00:00	12.5000		3103	433														
29	21:00:00	13.5000		3103	433														
30	21:30:00	14.0000		3103	433			0	0.00	0		0.00	0.04						
31	21:30:00	14.0000	1.9167	Open well on 48/64 or 19.05mm choke.															
32	21:35:00	14.0833	2.0000	438	433														
33	21:37:00	14.1167	2.0333	Fluid to surface.															
34	21:40:00	14.1667	2.0833	313	368														
35	21:45:00	14.2500	2.1667	313	368														
36	21:50:00	14.3333	2.2500	Meter in service with 0.5 inch plate or 12.70mm.															
37	22:00:00	14.5000	2.4167	313	368	3	19.05	148	72.21	2	12.70	4.02	0.13		0				
38	22:15:00	14.7500	2.6667	278	368	3	19.05	155	82.67	4	12.70	4.42	0.17	0.00	0.00	0	0.00	0.00	0.00
39	22:30:00	15.0000	2.9167	298	373	3	19.05	162	89.14	6	12.70	4.69	0.22	0.00	0.00	0	0.00	0.00	0.00

Anadarko Canada Corporation
M-35
Start Test Date: 2003/03/25
Final Test Date: 2003/03/27

FieldNotes

Field Measurements

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

	Clock	Cum	Cum Flow	CSG	WH Choke	Static	Diff	MR Orifice	Gas	Gas	fld	Inc	BS	Inc	Cum.	Inc	Cum.	Cum.							
Date	Time	Time	Time	Pres	Pres	Size	Pres	Pres	Size	Rate	Cum	lev	Fld	BSW	BSW	Oil	Oil	Fluid							
yyyy/mm/dd hh:mm:ss	hr	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	10 ³ m ³ /d	10 ³ m ³	m ³	m ³	%	m ³	m ³	m ³	m ³	m ³				
40	2003/03/25	22:38:00	15.1333	3.0500	Meter out of service																				
41		22:42:00	15.2000	3.1167	Meter in service with 0.750 inch plate or 19.05mm																				
42		23:00:00	15.5000	3.4167	333	383	3	19.05	114	42.08	10	19.05	5.85	0.33	0.00	0.00	0	0.00	0.00	0.00	0.00				
43		23:00:00	15.5000	3.4167	Sample shows Salinity-10,000ppm, PH-8.																				
44		23:15:00	15.7500	3.6667	Fluid level obtained in sightglass, 1.90m3 fluid required to see level.																				
45		23:30:00	16.0000	3.9167	313	388	3	19.05	114	49.80	14	19.05	6.39	0.45	2.51	2.51	100	2.51	2.51	0.00	0.00	2.51			
46	2003/03/26	00:00:00	16.5000	4.4167	273	393	3	19.05	121	54.78	15	19.05	6.92	0.59	2.83	0.32	100	0.32	2.83	0.00	0.00	2.83			
47		00:30:00	17.0000	4.9167	333	403	3	19.05	121	58.76	16	19.05	7.19	0.74	3.30	0.47	100	0.47	3.30	0.00	0.00	3.30			
48		01:00:00	17.5000	5.4167	308	413	3	19.05	121	57.27	16	19.05	7.08	0.89	3.50	0.20	100	0.20	3.50	0.00	0.00	3.50			
49		01:00:00	17.5000	5.4167	Sample shows Salinity-10,000ppm, PH-9.																				
50		01:30:00	18.0000	5.9167	313	423	2	19.05	121	61.75	17	19.05	7.39	1.04	4.42	0.92	100	0.92	4.42	0.00	0.00	4.42			
51		02:00:00	18.5000	6.4167	323	433	2	19.05	121	59.76	18	19.05	7.24	1.19	4.71	0.29	100	0.29	4.71	0.00	0.00	4.71			
52		02:00:00	18.5000	6.4167	Sample shows Salinity-10,000ppm, PH-9.																				
53		02:30:00	19.0000	6.9167	323	438	3	19.05	121	62.75	18	19.05	7.45	1.34	5.03	0.32	100	0.32	5.03	0.00	0.00	5.03			
54		03:00:00	19.5000	7.4167	383	443	3	19.05	121	64.49	20	19.05	7.54	1.50	5.26	0.23	100	0.23	5.26	0.00	0.00	5.26			
55		03:30:00	20.0000	7.9167	333	453	3	19.05	121	67.23	21	19.05	7.72	1.66	5.45	0.19	100	0.19	5.45	0.00	0.00	5.45			
56		04:00:00	20.5000	8.4167	348	458	3	19.05	121	69.47	21	19.05	7.87	1.82	5.64	0.19	100	0.19	5.64	0.00	0.00	5.64			
57		04:00:00	20.5000	8.4167	Sample shows Salinity-9,000ppm, PH-9.																				
58		04:30:00	21.0000	8.9167	348	463	3	19.05	121	71.96	20	19.05	8.05	1.99	5.86	0.22	100	0.22	5.86	0.00	0.00	5.86			
59		05:00:00	21.5000	9.4167	353	463	3	19.05	127	75.70	20	19.05	8.47	2.16	6.12	0.26	100	0.26	6.12	0.00	0.00	6.12			
60		05:30:00	22.0000	9.9167	363	473	3	19.05	127	78.93	21	19.05	8.67	2.34	6.48	0.36	100	0.36	6.48	0.00	0.00	6.48			
61		05:59:00	22.4833	10.4000	353	473	3	19.05	133	81.67	21	19.05	9.01	2.52	6.81	0.33	100	0.33	6.81	0.00	0.00	6.81			
62		05:59:00	22.4833	10.4000	Sample shows Salinity-9,000ppm PH-9.																				
63		06:00:00	22.5000	10.4167	Total ho' flowed - 10.5hours.																				
64		06:00:00	22.5000	10.4167	Cum gas flared - 3.39 10 ³ m ³																				
65		06:00:00	22.5000	10.4167	Cum fluid produced - 6.81m3																				
66		06:30:00	23.0000	10.9167	368	473	3	19.05	131	83.17	21	19.05	9.06	2.71	7.28	0.47	100	0.47	7.28	0.00	0.00	7.28			
67		07:00:00	23.5000	11.4167	378	473	3	19.05	128	84.16	21	19.05	9.03	2.90	7.65	0.37	100	0.37	7.65	0.00	0.00	7.65			
68		07:10:00	23.6667	11.5833	Adjust separator back pressure.																				
69		07:30:00	24.0000	11.9167	413	473	3	19.05	231	53.78	22	19.05	8.99	3.09	7.79	0.14	100	0.14	7.79	0.00	0.00	7.79			
70		08:00:00	24.5000	12.4167	418	473	3	19.05	231	54.28	22	19.05	9.04	3.28	7.98	0.19	100	0.19	7.98	0.00	0.00	7.98			
71		08:00:00	24.5000	12.4167	Sample shows Salinity-9,000ppm PH-9.																				
72		08:30:00	25.0000	12.9167	418	478	4	19.05	238	54.78	22	19.05	9.21	3.47	8.21	0.23	100	0.23	8.21	0.00	0.00	8.21			
73		09:00:00	25.5000	13.4167	423	478	4	19.05	241	56.03	23	19.05	9.37	3.66	8.54	0.33	100	0.33	8.54	0.00	0.00	8.54			
74		09:30:00	26.0000	13.9167	433	478	4	19.05	245	57.02	23	19.05	9.52	3.86	8.78	0.24	100	0.24	8.78	0.00	0.00	8.78			
75		10:00:00	26.5000	14.4167	423	493	4	19.05	245	58.02	23	19.05	9.61	4.05	9.01	0.23	100	0.23	9.01	0.00	0.00	9.01			
76		10:00:00	26.5000	14.4167	Sample shows Salinity-9,000ppm PH-9.																				
77		10:30:00	27.0000	14.9167	433	493	4	19.05	245	59.26	25	19.05	9.69	4.26	9.38	0.37	100	0.37	9.38	0.00	0.00	9.38			
78		10:35:00	27.0833	15.0000										2.69	-6.69		-6.69	9.38	0.00	0.00	9.38				

Anadarko Canada Corporation
M-35
Start Test Date: 2003/03/25
Final Test Date: 2003/03/27

FieldNotes

Field Measurements

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

	Clock	Cum	Cum Flow	CSG	WHChoke	Static	Diff	MR Orifice	Gas	Gas	fld	Inc	BS	Inc	Cum.	Inc	Cum.	Cum.						
Date	Time	Time	Time	Pres	Pres	Size	Pres	Pres	Size	Rate	Cum	lev	Fld	BSW	BSW	Oil	Oil	Fluid						
yyyy/mm/dd hh:mm:ss	hr	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	10 ³ m ³ /d	10 ³ m ³	m ³	m ³	%	m ³	m ³	m ³	m ³				
40	2003/03/25	22:38:00	15.1333	3.0500	Meter out of service																			
41		22:42:00	15.2000	3.1167	Meter in service with 0.750 Inch plate or 19.05mm																			
42		23:00:00	15.5000	3.4167	333	383	3	19.05	114	42.08	10	19.05	5.85	0.33	0.00	0.00	0	0.00	0.00	0.00				
43		23:00:00	15.5000	3.4167	Sample shows Salinity-10,000ppm, PH-8.																			
44		23:15:00	15.7500	3.6667	Fluid level obtained in sightglass, 1.90m3 fluid required to see level.																			
45		23:30:00	16.0000	3.9167	313	388	3	19.05	114	49.80	14	19.05	6.39	0.45	2.51	2.51	100	2.51	2.51	0.00	0.00	2.51		
46	2003/03/26	00:00:00	16.5000	4.4167	273	393	3	19.05	121	54.78	15	19.05	6.92	0.59	2.83	0.32	100	0.32	2.83	0.00	0.00	2.83		
47		00:30:00	17.0000	4.9167	333	403	3	19.05	121	58.76	16	19.05	7.19	0.74	3.30	0.47	100	0.47	3.30	0.00	0.00	3.30		
48		01:00:00	17.5000	5.4167	308	413	3	19.05	121	57.27	16	19.05	7.08	0.89	3.50	0.20	100	0.20	3.50	0.00	0.00	3.50		
49		01:00:00	17.5000	5.4167	Sample shows Salinity-10,000ppm, PH-9.																			
50		01:30:00	18.0000	5.9167	313	423	2	19.05	121	61.75	17	19.05	7.39	1.04	4.42	0.92	100	0.92	4.42	0.00	0.00	4.42		
51		02:00:00	18.5000	6.4167	323	433	2	19.05	121	59.76	18	19.05	7.24	1.19	4.71	0.29	100	0.29	4.71	0.00	0.00	4.71		
52		02:00:00	18.5000	6.4167	Sample shows Salinity-10,000ppm, PH-9.																			
53		02:30:00	19.0000	6.9167	323	438	3	19.05	121	62.75	18	19.05	7.45	1.34	5.03	0.32	100	0.32	5.03	0.00	0.00	5.03		
54		03:00:00	19.5000	7.4167	383	443	3	19.05	121	64.49	20	19.05	7.54	1.50	5.26	0.23	100	0.23	5.26	0.00	0.00	5.26		
55		03:30:00	20.0000	7.9167	333	453	3	19.05	121	67.23	21	19.05	7.72	1.66	5.45	0.19	100	0.19	5.45	0.00	0.00	5.45		
56		04:00:00	20.5000	8.4167	348	458	3	19.05	121	69.47	21	19.05	7.87	1.82	5.64	0.19	100	0.19	5.64	0.00	0.00	5.64		
57		04:00:00	20.5000	8.4167	Sample shows Salinity-9,000ppm, PH-9.																			
58		04:30:00	21.0000	8.9167	348	463	3	19.05	121	71.96	20	19.05	8.05	1.99	5.86	0.22	100	0.22	5.86	0.00	0.00	5.86		
59		05:00:00	21.5000	9.4167	353	463	3	19.05	127	75.70	20	19.05	8.47	2.16	6.12	0.26	100	0.26	6.12	0.00	0.00	6.12		
60		05:30:00	22.0000	9.9167	363	473	3	19.05	127	78.93	21	19.05	8.67	2.34	6.48	0.36	100	0.36	6.48	0.00	0.00	6.48		
61		05:59:00	22.4833	10.4000	353	473	3	19.05	133	81.67	21	19.05	9.01	2.52	6.81	0.33	100	0.33	6.81	0.00	0.00	6.81		
62		05:59:00	22.4833	10.4000	Sample shows Salinity-9,000ppm PH-9.																			
63		06:00:00	22.5000	10.4167	Total hours flowed - 10.5hours.																			
64		06:00:00	22.5000	10.4167	Cum gas flared - 3.39 10 ³ m ³																			
65		06:00:00	22.5000	10.4167	Cum fluid produced - 6.81m3																			
66		06:30:00	23.0000	10.9167	368	473	3	19.05	131	83.17	21	19.05	9.06	2.71	7.28	0.47	100	0.47	7.28	0.00	0.00	7.28		
67		07:00:00	23.5000	11.4167	378	473	3	19.05	128	84.16	21	19.05	9.03	2.90	7.65	0.37	100	0.37	7.65	0.00	0.00	7.65		
68		07:10:00	23.6667	11.5833	Adjust separator back pressure.																			
69		07:30:00	24.0000	11.9167	413	473	3	19.05	231	53.78	22	19.05	8.99	3.09	7.79	0.14	100	0.14	7.79	0.00	0.00	7.79		
70		08:00:00	24.5000	12.4167	418	473	3	19.05	231	54.28	22	19.05	9.04	3.28	7.98	0.19	100	0.19	7.98	0.00	0.00	7.98		
71		08:00:00	24.5000	12.4167	Sample shows Salinity-9,000ppm PH-9.																			
72		08:30:00	25.0000	12.9167	418	478	4	19.05	238	54.78	22	19.05	9.21	3.47	8.21	0.23	100	0.23	8.21	0.00	0.00	8.21		
73		09:00:00	25.5000	13.4167	423	478	4	19.05	241	56.03	23	19.05	9.37	3.66	8.54	0.33	100	0.33	8.54	0.00	0.00	8.54		
74		09:30:00	26.0000	13.9167	433	478	4	19.05	245	57.02	23	19.05	9.52	3.86	8.78	0.24	100	0.24	8.78	0.00	0.00	8.78		
75		10:00:00	26.5000	14.4167	423	493	4	19.05	245	58.02	23	19.05	9.61	4.05	9.01	0.23	100	0.23	9.01	0.00	0.00	9.01		
76		10:00:00	26.5000	14.4167	Sample shows Salinity-9,000ppm PH-9.																			
77		10:30:00	27.0000	14.9167	433	493	4	19.05	245	59.26	25	19.05	9.69	4.26	9.38	0.37	100	0.37	9.38	0.00	0.00	9.38		
78		10:35:00	27.0833	15.0000											2.69	-6.69		-6.69	9.38	0.00	0.00	9.38		

Anadarko Canada Corporation

M-35

Start Test Date: 2003/03/25

Final Test Date: 2003/03/27

FieldNotes

Field Measurements

Anadarko S.W. Arrowhead

Formation: Chinkah

Pool: 587.0 - 591.0 mKB

Job Number: 1370

	Clock	Cum	Cum Flow	C	TBG	CSG	WH	Choke	Static	Diff	MR	Orifice	Gas	Gas	fld	Inc	BS	Inc	Cum.	Inc	Cum.	Cum.
Date	Time	Time	Time	Pres	Pres	Size	Pres	Pres	Size	Rate	Cum	lev	Fld	BSW	BSW	Oil	Oil	Fluid				
yyyy/mm/dd hh:mm:ss	hr	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	10 ³ m ³ /d	10 ³ m ³	m ³	m ³	%	m ³	m ³	m ³	m ³	m ³	
79	2003/03/26	11:00:00	27.5000	15.4167	433	493	4	19.05	252	59.26	25	19.05	9.81	4.46	2.98	0.29	100	0.29	9.67	0.00	0.00	9.67
80		11:30:00	28.0000	15.9167	438	493	5	19.05	258	60.01	25	19.05	9.99	4.67	3.21	0.23	100	0.23	9.90	0.00	0.00	9.90
81		12:00:00	28.5000	16.4167	443	493	5	19.05	258	60.26	25	19.05	10.01	4.87	3.44	0.23	100	0.23	10.13	0.00	0.00	10.13
82		12:00:00	28.5000	16.4167	Sample shows Salinity-9,000ppm PH-9.																	
83		12:30:00	29.0000	16.9167	443	493	5	19.05	258	60.76	26	19.05	10.04	5.08	3.72	0.28	100	0.28	10.41	0.00	0.00	10.41
84		13:00:00	29.5000	17.4167	453	493	5	19.05	258	62.52	27	19.05	10.18	5.29	4.00	0.28	100	0.28	10.69	0.00	0.00	10.69
85		13:30:00	30.0000	17.9167	453	493	6	19.05	265	62.99	27	19.05	10.35	5.51	4.24	0.24	100	0.24	10.93	0.00	0.00	10.93
86		14:00:00	30.5000	18.4167	458	493	6	19.05	269	62.00	28	19.05	10.31	5.72	4.57	0.33	100	0.33	11.26	0.00	0.00	11.26
87		14:00:00	30.5000	18.4167	Sample shows Salinity-9,000ppm PH-9.																	
88		14:30:00	31.0000	18.9167	458	493	6	19.05	269	63.74	29	19.05	10.45	5.94	4.85	0.28	100	0.28	11.54	0.00	0.00	11.54
89		15:00:00	31.5000	19.4167	463	493	6	19.05	272	64.24	30	19.05	10.53	6.16	5.13	0.28	100	0.28	11.82	0.00	0.00	11.82
90		15:30:00	32.0000	19.9167	463	493	6	19.05	272	64.99	30	19.05	10.60	6.38	5.27	0.14	100	0.14	11.96	0.00	0.00	11.96
91		16:00:00	32.5000	20.4167	463	493	6	19.05	272	65.49	30	19.05	10.64	6.60	5.50	0.23	100	0.23	12.19	0.00	0.00	12.19
92		16:00:00	32.5000	20.4167	Sample shows Salinity-9,000ppm PH-9.																	
93		16:30:00	33.0000	20.9167	473	483	6	19.05	283	65.99	31	19.05	10.86	6.82	5.88	0.38	100	0.38	12.57	0.00	0.00	12.57
94		17:00:00	33.5000	21.4167	478	483	6	19.05	286	66.23	31	19.05	10.94	7.05	6.11	0.23	100	0.23	12.80	0.00	0.00	12.80
95		17:30:00	34.0000	21.9167	478	473	6	19.05	286	66.48	32	19.05	10.94	7.28	6.30	0.19	100	0.19	12.99	0.00	0.00	12.99
96		18:00:00	34.5000	22.4167	478	473	6	19.05	286	66.73	32	19.05	10.97	7.51	6.65	0.35	100	0.35	13.34	0.00	0.00	13.34
97		18:00:00	34.5000	22.4167	Sample shows Salinity-9,000ppm PH-9.																	
98		18:30:00	35.0000	22.9167	478	473	6	19.05	293	67.73	31	19.05	11.20	7.74	6.85	0.20	100	0.20	13.54	0.00	0.00	13.54
99		19:00:00	35.5000	23.4167	483	493	6	19.05	293	67.98	32	19.05	11.20	7.97	7.08	0.23	100	0.23	13.77	0.00	0.00	13.77
100		19:30:00	36.0000	23.9167	483	478	6	19.05	300	68.23	31	19.05	11.36	8.20	7.32	0.23	100	0.23	14.01	0.00	0.00	14.01
101		20:00:00	36.5000	24.4167	493	478	4	19.05	300	68.72	31	19.05	11.41	8.44	7.60	0.28	100	0.28	14.29	0.00	0.00	14.29
102		20:00:00	36.5000	24.4167	Sample shows Salinity-9,000ppm, PH-9.																	
103		20:30:00	37.0000	24.9167	493	478	4	19.05	300	69.47	31	19.05	11.48	8.68	7.78	0.19	100	0.19	14.47	0.00	0.00	14.47
104		21:00:00	37.5000	25.4167	503	478	3	19.05	308	69.47	31	19.05	11.62	8.92	8.02	0.24	100	0.24	14.71	0.00	0.00	14.71
105		21:30:00	38.0000	25.9167	503	478	3	19.05	308	70.22	31	19.05	11.68	9.16	8.25	0.23	100	0.23	14.94	0.00	0.00	14.94
106		22:00:00	38.5000	26.4167	513	478	3	19.05	313	71.46	33	19.05	11.84	9.41	8.53	0.28	100	0.28	15.22	0.00	0.00	15.22
107		22:00:00	38.5000	26.4167	Sample shows Salinity-9,000ppm, PH-9																	
108		22:30:00	39.0000	26.9167	503	478	3	19.05	313	71.71	33	19.05	11.87	9.66	8.81	0.28	100	0.28	15.50	0.00	0.00	15.50
109		22:31:00	39.0167	26.9333											3.16	-5.65	100	-5.65	15.50	0.00	0.00	15.50
110		23:00:00	39.5000	27.4167	503	478	2	19.05	321	70.22	33	19.05	11.87	9.90	3.44	0.28	100	0.28	15.78	0.00	0.00	15.78
111		23:30:00	40.0000	27.9167	513	473	2	19.05	321	70.71	30	19.05	11.97	10.15	3.81	0.37	100	0.37	16.15	0.00	0.00	16.15
112	2003/03/27	00:00:00	40.5000	28.4167	508	478	2	19.05	321	70.71	28	19.05	12.01	10.40	4.05	0.24	100	0.24	16.39	0.00	0.00	16.39
113		00:00:00	40.5000	28.4167	Sample shows Salinity-9,000ppm, PH-9																	
114		00:30:00	41.0000	28.9167	508	478	3	19.05	321	69.97	25	19.05	12.01	10.65	4.19	0.14	100	0.14	16.53	0.00	0.00	16.53
115		01:00:00	41.5000	29.4167	508	478	3	19.05	321	69.97	23	19.05	12.05	10.90	4.42	0.23	100	0.23	16.76	0.00	0.00	16.76
116		01:30:00	42.0000	29.9167	508	478	3	19.05	321	69.72	23	19.05	12.02	11.15	4.61	0.19	100	0.19	16.95	0.00	0.00	16.95
117		02:00:00	42.5000	30.4167	508	478	3	19.05	314	70.22	23	19.05	11.95	11.40	4.89	0.28	100	0.28	17.23	0.00	0.00	17.23

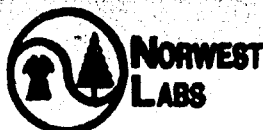
Anadarko Canada Corporation
M-35
Start Test Date: 2003/03/25
Final Test Date: 2003/03/27

FieldNotes

Field Measurements

Anadarko S.W. Arrowhead
Formation: Chinkeh
Pool: 587.0 - 591.0 mKB
Job Number: 1370

	Clock	Cum	Cum Flow	C TBG	CSG	WH Choke	Static	Diff	MR Orifice	Gas	Gas	fld	Inc	BS	Inc	Cum.	Inc	Cum.	Cum.
	Date	Time	Time	Pres	Pres	Size	Pres	Pres	Size	Rate	Cum	lev	Fld	BSW	BSW	Oil	Oil	Fluid	
	yyyy/mm/dd hh:mm:ss	hr	hr	kPa(a)	kPa(a)	°C	mm	kPa(a)	kPa	°C	mm	10 ³ m ³ /d	10 ³ m ³	m ³	m ³	%	m ³	m ³	m ³
118	2003/03/27	02:00:00	42.5000	30.4167	Sample shows Salinity-9,000ppm, PH-9.														
119		02:30:00	43.0000	30.9167	508	478	3	19.05	314	70.22	22	19.05	11.97	11.65	5.17	0.28	100	0.28	17.51
120		03:00:00	43.5000	31.4167	508	478	3	19.05	307	70.22	22	19.05	11.85	11.90	5.45	0.28	100	0.28	17.79
121		03:30:00	44.0000	31.9167	513	478	3	19.05	307	70.22	22	19.05	11.85	12.15	5.64	0.19	100	0.19	17.98
122		04:00:00	44.5000	32.4167	508	478	3	19.05	314	70.22	22	19.05	11.97	12.39	5.87	0.23	100	0.23	18.21
123		04:00:00	44.5000	32.4167	Sample shows Salinity-8,000ppm, PH-9.														
124		04:30:00	45.0000	32.9167	508	478	3	19.05	314	70.22	22	19.05	11.97	12.64	6.10	0.23	100	0.23	18.44
125		05:00:00	45.5000	33.4167	513	483	2	19.05	321	70.72	21	19.05	12.16	12.89	6.43	0.33	100	0.33	18.77
126		05:30:00	46.0000	33.9167	508	483	2	19.05	321	70.97	21	19.05	12.18	13.15	6.71	0.28	100	0.28	19.05
127		05:59:00	46.4833	34.4000	518	483	2	19.05	321	71.21	20	19.05	12.23	13.39	6.94	0.23	100	0.23	19.28
128		05:59:00	46.4833	34.4000	Sample shows Salinity-9,000ppm, PH-9.														
129		05:59:00	46.4833	34.4000	Total hours flowed - 34.5hrs														
130		05:59:00	46.4833	34.4000	Cum gas flared - 13.56 10 ³ m ³														
131		05:59:00	46.4833	34.4000	Gas flared in last 24hrs - 10.17 10 ³ m ³														
132		05:59:00	46.4833	34.4000	Fluid produced in last 24hrs - 12.75m ³														
133		05:59:00	46.4833	34.4000	Cum fluid produced - 19.56m ³														
134		06:30:00	47.0000	34.9167	513	453	2	19.05	321	71.71	20	19.05	12.27	13.66	7.22	0.28	100	0.28	19.56
135		07:00:00	47.5000	35.4167	518	463	2	19.05	2304	71.71	21	19.05	32.29	14.12	7.39	0.17	100	0.17	19.73
136		07:30:00	48.0000	35.9167	528	463	2	19.05	314	71.71	21	19.05	12.13	14.58	7.55	0.16	100	0.16	19.89
137		08:00:00	48.5000	36.4167	528	468	2	19.05	314	71.96	21	19.05	12.15	14.84	7.82	0.27	100	0.27	20.16
138		08:00:00	48.5000	36.4167	Sample shows Salinity-9,000ppm, PH-9.														
139		08:30:00	49.0000	36.9167	528	468	2	19.05	314	72.21	21	19.05	12.17	15.09	7.98	0.16	100	0.16	20.32
140		09:00:00	49.5000	37.4167	518	468	2	19.05	317	72.71	22	19.05	12.25	15.35	8.20	0.22	100	0.22	20.54
141		09:00:00	49.5000	37.4167	Samples taken, Gas Bomb #4273, #4549, #9175, stock water samples also taken.														
142		09:30:00	50.0000	37.9167	513	483	2	19.05	320	72.71	21	19.05	12.33	15.60	8.44	0.24	100	0.24	20.78
143		09:31:00	50.0167		Shut In well, end of flow test, record build-ups. Rld out test equipment.														
144		09:35:00	50.0833		2023	473													
145		09:40:00	50.1667		3423	473													
146		09:45:00	50.2500		3643	473													
147		10:00:00	50.5000		3893	473													
148		10:15:00	50.7500		3933	473													
149		10:30:00	51.0000		3953	473													
150		11:00:00	51.5000		3998	478													
151		11:30:00	52.0000		4018	478													
152		12:00:00	52.5000		4033	478													
153		12:30:00	53.0000		4043	478													
154		13:00:00	53.5000		4043	478													
155		13:30:00	54.0000		4053	478								8.44	0.00		0.00	20.78	0.00
156		13:31:00	54.0167		End of build-up period, secure wellhead.														



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

G03-17973-01
Laboratory Report Number

GAS ANALYSIS

Page ___ of ___

Energy Resource Group

Anadarko Canada Corporation

Operator

33486/4273/9175

Container Identity

M-35

Location

Anadarko Arrowhead M-35

Well Name

KB Elev, m GR Elev, m

Arrowhead

Field/Area

Pool / Zone

Sampler

Arctic Energy

Company

Prod

Test Type No

Multiple Recovery

Test Recovery:

Test Interval, m

Perforations, m

Meter Run

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

Gauge Pressure, kPa 228 280

Temperature, °C 21 20

Separator Treater Reservoir Source Sampled Received

2003-03-27
Date Sampled (Y-M-D)

2003-03-28
Date Received (Y-M-D)

2003-04-03
Date Reported (Y-M-D)

D. Aebig
Analyst

Other Information

Comp.	Mole Fraction (Air Free)		Petroleum Liquid Content mL/m ³
	As Received	Acid Gas Free	
H ₂	0.0000	0.0000	
He	0.0004	0.0004	
N ₂	0.0026	0.0026	
CO ₂	0.0126	0.0000	
H ₂ S	0.0000	0.0000	
C ₁	0.9838	0.9964	
C ₂	0.0005	0.0005	1.8
C ₃	0.0001	0.0001	0.4
iC ₄	Trace	Trace	0.0
nC ₄	Trace	Trace	0.0
iC ₅	Trace	Trace	0.0
nC ₅	0.0000	0.0000	0.0
C ₆	Trace	Trace	0.0
C ₇	Trace	Trace	0.0
C ₈	0.0000	0.0000	0.0
C ₉	0.0000	0.0000	0.0
C ₁₀ +	0.0000	0.0000	0.0
Total	1.0000	1.0000	2.2

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
37.21	37.68	37.20

Pseudocritical Properties

Pressure, kPa	Temperature, K
4629	191.8

Density - Moisture Free, As Sampled
Ideal Gas Real Gas (GPA 2172)

Absolute, kg/m ³	Relative	Absolute, kg/m ³	Relative
0.695	0.567	0.696	0.568

Relative Molecular Mass

Total Gas	C7+	Hydrogen Sulphide g/m ³	Vapour Pressure Pentanes Plus, kPa
16.43		0.00	0

Results confirmed on duplicate sample.

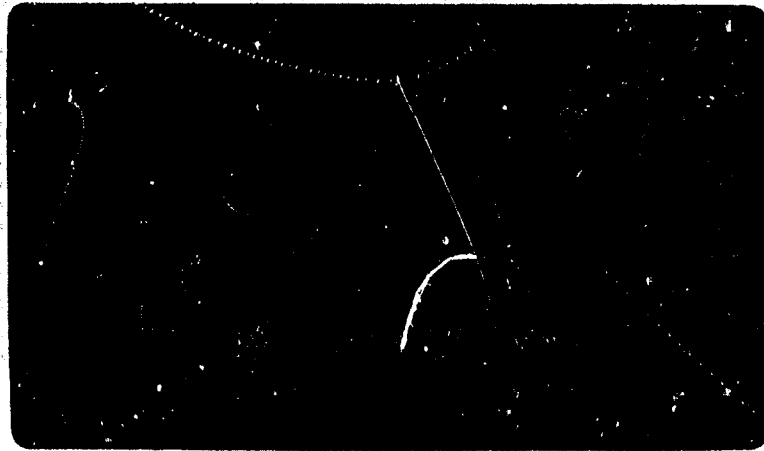
Note: Physical constants used in calculations from GPA Standard 2145-00

Supervisor _____ R. Peters Approved _____ S. Montgomery

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

**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

Anadarko SW Arrowhead M-35 SW Arrowhead M-35

**Well Reached Total Depth on
Mar 7, 2003 @ 06:15**

for

Anadarko Canada Corporation

Prepared For: Mike Fawcett/Ben Urlwin
Anadarko Canada Corporation

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

Erika Lange

Table of Contents

<u>Section</u>	<u>Page</u>
Well Abstract	1-1
Well Summary	2-1
Daily Drilling Summary	3-1
Casing Strings	4-1
Bit Record Summary (IADC)	5-1
Bit Record Summary (TBG)	5-1
Bit Records	6-1
Core Descriptions	8-1
Logging Reports	9-1
Directional Surveys	11-1
Mud Data	14-1
Formation Tops	16-1
Sample Descriptions w/ Formation Tops	19-1

Well Summary

Storage Units: Metric

Well Information

Operator: Anadarko Canada Corporation
Well Name: Anadarko SW Arrowhead M-35
Location: SW Arrowhead M-35
UWI: 300M356030123000
Pool: Chinkeh
Field: SW Arrowhead
State / Province: NWT
Country: Canada
License Number: 1989
Well Status: Cased

Surface Co-ordinates

Hole Type:

Fault Indicator:

Latitude:

Longitude:

N / S: 60 24 57 4 N
E / W: 123 07 23 0 W

Bottom Hole Co-ordinates

Latitude:

Longitude:

N / S: 60 24 57 4 N
E / W: 123 07 23 0 W

Elevations

Ground Elevation:	346.26	Kelly Bushing to Ground:	346.26
Kelly Bushing Elevation:	350.33	Cut (-):	4.07
Casing Flange Elevation:		Fill (+):	

Total Depth

Total Depth Driller (Tally):
Total Depth Driller (Strap or SLM):
Total Depth Logger:

Measured Depth
737.00

True Vertical Depth
737.00

Miscellaneous Depths

Plugback Depth:
Sidetrack Depth:

Water Depth Reference:
Water Depth:

Well Summary

Drilling Contractor:	Akita #15	Spud Date:	Mar 3, 2003	@ 06:15	
Rig Release Date:	Mar 9, 2003	@ 08:00	Total Depth Date:	Mar 7, 2003	@ 06:15

Cores

#	Formation	Interval	Cut	Recovered	%
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Casing Summary

Casing Type	Casing Size	Landed Depth	Hole Size
Surface	219.1	201.00	311.0
Production	139.7	737.00	200.0

Anadarko Canada Corporation
UWI 300M356030123000

Anadarko SW Arrowhead M-35
SW Arrowhead M-35
Page 2-1

Well Summary

Storage Units: Metric

Logging Summary

Company	Engineer	Total Depth (MD)	Logging tools		
Tucker Wireline	Troy Friedrich	737.40	PIT/GRT/SP Linear Cond: 1000-0 LDT-CNT/GRT/CALI 2000-3000; Sst Neut.Por. 1:240 CST/XACT-GRT	FTD-SC Log Scale: 0.2-2000 FTD-SC Bulk Density 0.45 to -0.15 FTD-SC 500-100	Linear Res: 0-50;

Daily Drilling Summary

Storage Units:

Metric

Date	Depth	Progress	Rotating Hours	Avg. P.R.	Daily Costs	Formation	Operational Status @ Report Time
Mar 3, 03	33.00		0.70			Surface Hole	Drilling Surface Hole
Mar 4, 03	201.00	168.00	13.20	12.7		Surface Hole	Cement Casing
Mar 5, 03	202.00	1.00	1.00	1.0			Drilling out of the Surface Casing
Mar 6, 03	633.00	431.00	19.70	21.9		Chinkeh	Drilling to TD
Mar 7, 03	737.00		16.20			Banff	Circulating before wiper trip
Mar 8, 03	737.00					Banff	Condition mud & circulate, waiting for cement

Accumulated Daily Costs:

Anadarko Canada Corporation
UWI 300M356030123000

Anadarko SW Arrowhead M-35
SW Arrowhead M-35
Page 3-1

Casing Data Summary

Storage Units:

Metric

Casing Type: Surface**Casing Size:** 219.1**Casing Landed @:** 201.00**Casing Date:** Mar 4, 2003 @ 06:15**Hole Size:** 311.0**Total Joints:** 15**Plug Down Date:** Mar 4, 2003 @ 08:15

of Joints / Length / O.D. / Weight: 15; 202.12; 219.1; 35.7

Cementing Details:

11.3m3

010 Class G cement

3% Ca

1.5m3 good cmt returns

Remarks:**Casing Type:** Production**Casing Size:** 139.7**Casing Landed @:** 737.00**Casing Date:** Mar 8, 2003 @ 07:00**Hole Size:** 200.0**Total Joints:** 57**Plug Down Date:** Mar 8, 2003 @ 12:00

of Joints / Length / O.D. / Weight: 57; 13; 139.7; 20.8

Cementing Details:Pump 3m3 water 3m3 scavenger 18m3 cement slurry drop plug displace with
9.3,3 water bump plug with 13500 KPa hld 10 min bleed back float held ok 1m3 .
Good cmt returns**Remarks:**

Bit Record Table (IADC Grading System)

Storage Units: Metric

**** For more detailed Bit Information refer to Bit Record ****

Bit #	Make	Type	Size	Depth In	Depth Out	Made	Hours	Avg. P.R.	I.A.D.C. Bit Condition							
									I	O	MDC	Loc	B	G	ODC	RP1
1A	Smith	GTCS1	311.0	0.0	201.0	201.0	13.25	15.2	4	4	FC	A3	I		TD	TD
RR2	GeoDia	CD93M	200.0	201.0	651.0	450.0	21.25	21.2								
2	Smith	F12YGI	200.0	651.0	737.0	86.0	13.75	6.3	2	2	BT	H3	I	LT	TD	TD

Total Rotating Hours: 48.25

Bit Record Table (TBG Grading System) Storage Units: Metric

**** For more detailed Bit Information refer to Bit Record ****

Bit #	Make	Type	Size	IADC		Depth In	Depth Out	Made	Hours	Avg. P.R.	Bit Condition		
				S	T						T	B	G
1A	Smith	GTCS1	311.0			0.0	201.0	201.0	13.25	15.2	4	E	I
RR2	GeoDiam	CD93MA74	200.0			201.0	651.0	450.0	21.25	21.2			
2	Smith	F12YGP	200.0			651.0	737.0	86.0	13.75	6.3	2	2	I

Total Rotating Hours: 48.25

Pump Data

Pump #1	Model: F650	Size: 650	Type: triplex
Pump Rod Diameter:		Liner Size: 203.0	Stroke Length: 152
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: GTCS1	IADC Series / Type: /
Serial #: B22179	Size: 311.0 Jets / Nozzles:	19.10 / 19.10 / 19.10 /	T.F.A.: 850.60
Depth In: 0.00	Depth Out: 201.00	Made: 201.00	Rotating Hours: 13.25
	Average Drill Rate: 15.17	Total Rotating Hours: 13.25	

Bit Grade / Condition I.A.D.C.: 4 / 4 / FC / A 3 / / / / TD / TD T / B / G: 4 / E / I

Remarks:

Formations Drilled: Surface

Drilling Parameters

	Min	Max		Min	Max
Force on Bit:	2 /	12	R.P.M.:	2 /	12
Pump 1 S.P.M. / Volume:	110 /	1,094	Pump 2 S.P.M. / Volume:	/	
S.P.P.:	110 /	170	Fluid Density:	1,000 /	1,140
Drift Angle:	0.000 /	1.250	Funnel Viscosity:	30 /	100

Annular Velocity	Drill Collars: 40.0	HeavyWeight Drill Pipe:	Drill Pipe: 34.0
Bottoms Up	Depth:	Theoretical:	Actual:

Bit #: RR2	Make: 100 Diamond	Type: 33MA74YP	IADC Series / Type: /
Serial #: 94074JS73E	Size: 200.0 Jets / Nozzles:	7.10 / 7.10 / 7.10 /	T.F.A.: 240.00
Depth In: 201.00	Depth Out: 651.00	Made: 450.00	Rotating Hours: 21.25
	Average Drill Rate: 21.18	Total Rotating Hours: 34.50	

Bit Grade / Condition I.A.D.C.: / / / / / / / / T / B / G: / /

Remarks: 10% wear, 1 chipped cutter

Formations Drilled:

Drilling Parameters

	Min	Max		Min	Max
Force on Bit:	2 /	5	R.P.M.:	90 /	120
Pump 1 S.P.M. / Volume:	110 /	1,094	Pump 2 S.P.M. / Volume:	/	
S.P.P.:	3,100 /	5,100	Fluid Density:	1,000 /	1,170
Drift Angle:	0.500 /	1.250	Funnel Viscosity:	38 /	50

Annular Velocity	Drill Collars: 90.0	HeavyWeight Drill Pipe:	Drill Pipe: 57.0
Bottoms Up	Depth: 635.00	Theoretical: 19	Actual: 19

Anadarko Canada Corporation
UWI 300M356030123000

Anadarko SW Arrowhead M-35
SW Arrowhead M-35
Page 6-1

Bit Data

Storage Units:

Metric

Bit #: 2 Make: Smith Type: F12YGP IADC Series / Type: /
Serial #: MK4350 Size: 200.0 Jets / Nozzles: 11.10 / 11.10 / 11.10 / T.F.A.: 290.30
Depth In: 651.00 Depth Out: 737.00 Made: 86.00 Rotating Hours: 13.75
Average Drill Rate: 6.25 Total Rotating Hours: 48.25
Bit Grade / Condition I.A.D.C.: 2 / 2 / BT / H 3 / / / LT / TD / TD T/B/G: 2 / 2 / 1

Remarks:

Formations Drilled:

Drilling Parameters

	Min	Max		Min	Max
Force on Bit:	5 /	10	R.P.M.:	90 /	110
Pump 1 S.P.M. / Volume:	110 /	1,094	Pump 2 S.P.M. / Volume:	/	
S.P.P.:	3,300 /	6,300	Fluid Density:	1,080 /	1,090
Drift Angle:	0.250 /	1.250	Funnel Viscosity:	45 /	52
Annular Velocity	Drill Collars: 94.0	HeavyWeight Drill Pipe:	Drill Pipe:	57.0	
Bottoms Up	Depth: 700.00	Theoretical: 21	Actual:	21	

Wireline Logging Summary

Storage Units:

Metric

Logging Suite Number: 1

Wireline Logging Company: Tucker Wireline

District: Grande Prairie

Witness: Erika Lange

Engineer: Troy Friedrich

Unit Number: 118

Was Pressure Control Equipment Utilized: No

Maximum Deviation: 1.000 "

Was the Logging Job Mechanically Assisted: No

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	201.00	201.00
Casing Depth Logger	201.00	201.00
Total Depth Driller (Tally)	737.40	737.40
Total Depth Driller (Strap or SLM)		

General Remarks: Arrived on Location: Mar 6, 2003, 19:00 (as per required)

Circulation Stopped: Mar 7, 2003, 13:00

Started Logging: 16:30

Finished Logging: 18:30

Prints: 20:15

Wireline Logging Summary

Storage Units:

Metric

Logging Run #: 1
Date: Mar 7, 2003

Drilling Fluid Data

Drilling Fluid Type: Gelchem
Fluid Density: 1190.0

Viscosity: 82

pH: 9.0

Fluid Loss: 9.5

Mud Resistivity (Rm): 1.50 @ 24.0 °
Mud Resistivity (Rm) @ BHT: 1.30 @ 30.0 °
Mud Filtrate Resistivity (Rmf): 1.80 @ 30.0 °
Mud Cake Resistivity (Rmc): 1.90 @ 30.0 °

Maximum Temperature: 30.0 °
Source (Rmf): Press
Source (Rmc): Press

Logging Run Information

Date on Bottom: Mar 7, 2003

Total Depth Logger: 735.80 (MD) 735.80 (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:

Hole Conditions: Good

Deviation / Directional Survey Report

Directional Drilling Company: Gyrodata Directional Survey
Directional Drillers: Blane Haddow
Measured While Drilling (MWD) Hands:
Survey Type: gyroscopic
Survey Mode: wireline
Survey Date: Mar 7, 2003
Survey Calculation Method: minimum curvature
Target Azimuth: °
Dog Leg Severity Characteristic: 30.00

Survey Tie-In Information

Tie-In Co-Ordinates

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-Ordinates

Latitude: 60.2457400

Longitude: 123.7230000

N / S: 60.245740 N

E / W: 123.723000 W

Measured Depth	T.V.D.	Drift Angle (°)	Azimuth (°)	+N / -S Distance	+E / -W Distance	Vertical Section	DogLeg Severity
733.40	733.40	0.520	294.98	5.25	4.52		0.38

Remarks:

Drilling Fluid Summary

Storage Units: Metric

Drilling Fluid Type: Gelchem

From:

201

To:

737

Formation Top Summary

Storage Units:

Metric

Kelly Bushing Elevation:
Ground Elevation:

350.33
346.26

Casing Flange Elevation:

**** 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		200.00	200.00			150.33	180.00
Scatter		380.00	380.00	403.00	403.00	-52.67	70.00
Garbutt		472.00	472.00	473.00	473.00	-122.67	85.00
Spirit River		565.00	565.00	558.00	558.00	-207.67	27.00
Chinkeh		588.00	588.00	586.00	586.00	-235.67	108.00
Debolt		701.00	701.00	694.00	694.00	-343.67	43.00

Sample Descriptions

Storage Units: Metric

Samples start at : 200.00 MD, 200.00 TVD, 150.33 SSL

200.00 to 210.00 (10.00)	80%	Shale light to dark gray, hard, micromicaceous, earthy; trace quartz, calcite
	20%	Sandstone white gray, mostly quartz, very fine grain, angular, well sorted, consolidated, hard, 35% calcite cement, poor relief, tight
210.00 to 235.00 (25.00)	80%	Shale dark gray and black, sli micromicaceous, hard; trace pyrite, calcite
	20%	Siltstone white gray, mostly quartz, occasional shale, very very fine grain, angular, moderate sorted, well consolidated, hard, trace calcite cement
235.00 to 255.00 (20.00)	70%	Shale black, occasional dark gray, micromicaceous, hard, occasional fissile, trace glauconite,
	30%	Sandstone light gray, mostly quartz, occasional shale, occasional glauconite, very fine grain, angular, well sorted, well consolidated, hard, trace calcite cement, poor relief, tight
255.00 to 275.00 (20.00)	60%	Shale black gray, micromicaceous, hard, glauconite associated, occasionally fissile
	40%	Sandstone light gray, mostly quartz, occasional shale, occasional glauconite, very fine grain, trace silt, angular, moderately sorted, well consolidated, hard, 10% calcite cement, poor relief, tight
275.00 to 300.00 (25.00)	80%	Shale black gray, micromicaceous, mostly hard, occasionally fissile
	20%	Sandstone light gray, mostly quartz, trace shale, trace glauconite, very fine grain, angular, well sorted, well consolidated, hard, trace calcite cement, poor relief, tight
300.00 to 310.00 (10.00)	65%	Shale dark gray, occasional black, micromicaceous, hard, earthy, trace calcite
	35%	Sandstone wh-it gray, mostly quartz, trace shale, trace glauconite, very fine grain, angular, well sorted, well consolidated, hard, trace calcite cement, poor relief, tight, earthy
310.00 to 315.00 (5.00)	80%	Shale dark gray, micromicaceous, earthy, hard, trace calcite

Sample Descriptions

Storage Units: Metric

310.00 to 315.00 (5.00)	20%	Sandstone light gray, quartz, glauconite, trace shale, very fine grain, angular, well sorted, consolidated, hard, trace calcite cement, p-mod relief, tight, earthy
315.00 to 320.00 (5.00)	100%	Shale black, trace micromicaceous, hard, trace fissile
320.00 to 325.00 (5.00)	90%	Shale black, earthy, micromicaceous, hard, trace pyrite
	10%	Siltstone dark gray, quartz, shale, trace glauconite, vvf grain, angular, well sorted, well consolidated
325.00 to 340.00 (15.00)	90%	SHALE black, micromicaceous, occasional hard, friable, earthy, trace pyrite
	10%	Siltstone dark gray, vvf, angular, well consolidated, trace calcite cement, poor relief
340.00 to 380.00 (40.00)	90%	Shale dark gray, occasional black, micromicaceous, mostly hard, occasional friable, trace glauconite
	10%	Sandstone light gray, mostly quartz, glauconite, very fine grains, angular, well consolidated, 10% calcite cement, hard, poor relief, tight
Scatter: 380.00 MD, 380.00 TVD, -52.67 SSL		
380.00 to 400.00 (20.00)	80%	Shale black, dark gray, micromicaceous, occasionally friable, occasional fissile
	20%	Sandstone light gray, white, mostly quartz, glauconite, occasional trace mica, very fine grains, angular, well consolidated, 20% calcite cement, hard, poor relief, tight
400.00 to 405.00 (5.00)	90%	Shale black, dark gray, micromicaceous, occasionally friable, occasionally fissile; trace pyrite
	10%	Sandstone light gray, mostly quartz, glauconite, very fine grains, angular, well consolidated, 20% calcite cement, hard, poor relief, tight
405.00 to 415.00 (10.00)	50%	Sandstone white gray, quartz, glauconite, trace shale, very fine grains, subangular, well consolidated, 20% calcite cement, hard, poor to moderate relief, tight; trace brown chert

Sample Descriptions

Storage Units: Metric

405.00 to 415.00 (10.00)	50%	Shale dark gray, occasional black, micromicaceous, silty friable, occasionally fissile, trace glauconite
415.00 to 435.00 (20.00)	80%	Sandstone white gray, quartz, glauconite, occasional shale, very fine grains, subangular, consolidated, 20% calcite cement, mostly poor relief, tight
	20%	Shale dark gray, micromicaceous, silty friable, silty fissile, trace glauconite associated
435.00 to 450.00 (15.00)	70%	Sandstone white, brown (oil stain), quartz, glauconite (fine grains), occasional shale, very fine grains, subangular, well sorted, consolidated, 10 to 20% calcite cement, mostly poor relief, tight; quick, strong, bright yellow cut, with strong, milky stream
	30%	Shale dark gray, micromicaceous, silty friable, silty fissile, trace glauconite associated

Garbutt: 472.00 MD, 472.00 TVD, -122.67 SSL

465.00 to 475.00 (10.00)	80%	Sandstone brown (oil stain), quartz, less glauconite, very fine grains, subangular, moderate well sorted, well consolidated, more silty cement, poor relief, tight; moderate, moderate, yellow cut, with a milky stream; trace pyrite
	20%	Shale dark gray, micromicaceous, slightly fissile, trace pyrite
475.00 to 500.00 (25.00)	60%	Shale dark gray, micromicaceous, hard
	40%	Siltstone dark brown, very very fine grains, angular, well sorted, no cement, well consolidated, poor relief; sli cut (?)

Spirit River: 565.00 MD, 565.00 TVD, -207.67 SSL

560.00 to 570.00 (10.00)	100%	Shale dark gray, slightly micromicaceous, mostly hard; trace sandstone and siltstone with trace mica; black, platy, slightly fissile
570.00 to 580.00 (10.00)	90%	Shale black, platy, slightly fissile, trace pyrite, coal, (phosphate?); dark gray, slightly micromicaceous, sli hard
	10%	Sandstone gray, brown, mostly quartz, occasional trace glauconite, mica, very fine grains, angular, moderate sorted, well consolidated, poor relief, tight

Sample Descriptions

Storage Units: Metric

580.00 to 585.00 (5.00)	85%	Shale black, dark brown gray, some fissile, some hard, occasional micromicaceous; trace pyrite, phosphate
	15%	Sandstone gray, mostly quartz, occasional trace glauconite, mica, very fine to upper fine grains, angular, moderate sorted, well consolidated, mostly poor relief, tight
585.00 to 590.00 (5.00)	60%	Shale dark gray brown, slightly micromicaceous, slightly hard, black = platy, fissile, pyrite associated, coal, phosphate
	40%	Sandstone dark brown to white, quartz, upper fine to medium grains, subangular, moderately well sorted, consolidated, no cement, moderate relief, Type IC-IA porosity, 5-8%, mostly bitumen filled; questionable cut

Chinkeh: 588.00 MD, 588.00 TVD, -235.67 SSL

585.00 to 590.00 (5.00)	60%	Shale dark gray brown, slightly micromicaceous, slightly hard, black = platy, fissile, pyrite associated, coal, phosphate
	40%	Sandstone dark brown to white, quartz, upper fine to medium grains, subangular, moderately well sorted, consolidated, no cement, moderate relief, Type IC-IA porosity, 5-8%, mostly bitumen filled; questionable cut
590.00 to 595.00 (5.00)	50%	Sandstone mostly brown, trace white, quartz, fine to medium grains, subangular, moderately well sorted, consolidated, quartz cement, poor to moderate relief, Type IC porosity, 3-5%, trace bitumen filled
	50%	Shale mostly black, dark gray, slightly platy, occasionally fissile, occasionally micromicaceous, pyrite associated
595.00 to 600.00 (5.00)	65%	Shale mostly dark gray, occasional black, occasionally micromicaceous, hard, platy, trace pyrite
	35%	Sandstone light brown, quartz, mostly fine grains, subangular, moderately well sorted, well consolidated, more quartz cement, poor to moderate relief, Type IC-ID porosity, 3%, less bitumen filled; questionable cut
600.00 to 605.00 (5.00)	60%	Shale as above
	40%	Sandstone

Sample Descriptions

Storage Units: Metric

			light brown to white, quartz, mostly fine grains, occasional medium grains, subangular, moderately well sorted, consolidated, trace quartz cement, poor to moderate relief, Type IB-IC porosity, 5%, trace bitumen filled; moderate yellow cut with a fair milky stream
605.00 to 610.00 (5.00)	60%	Sandstone	light brown and white, quartz, fine grains, subangular, moderately well sorted, well consolidated, more quartz cement, poor to moderate relief, Type IC-ID porosity, 3%; moderate yellow cut with a fair milky stream
	40%	Shale	as above
610.00 to 615.00 (5.00)	50%	Sandstone	buff, quartz, fine to med grains, subangular, well sorted, fine grains are well consolidated, with more quartz cement, poor to moderate relief, Type IB-ID porosity, 1-6%; moderate yellow cut with a fair milky stream
	50%	Shale	dark gray and black, micromicaceous, platy, occasionally fissile; trace pyrite
615.00 to 620.00 (5.00)	60%	Shale	as above
	40%	Sandstone	buff, quartz, mostly fine grains, subangular, moderately well sorted, well consolidated, more quartz cement, poor to moderate relief, Type IC-ID porosity, 3%; moderate yellow cut with a fair milky stream
620.00 to 625.00 (5.00)	60%	Sandstone	buff, quartz, fine grains, subangular, well sorted, consolidated, trace quartz cement, mod-p relief, Type IB porosity, 8%; moderate yellow cut with a fair milky stream
	40%	Shale	as above
625.00 to 630.00 (5.00)	50%	Sandstone	buff, quartz, f-vf grains, subangular, moderately well sorted, mostly well consolidated, trace quartz cement, mostly poor relief, Type IC-ID porosity, 3%; moderate yellow cut with a fair milky stream
	50%	Shale	as above
630.00 to 635.00 (5.00)	70%	Sandstone	buff, quartz, mostly fine grains, occasional med grains, subangular, well sorted, mostly consolidated, few unconsolidated, no cement, mod-p relief, Type IC-IB porosity, 6%; moderate yellow cut with a fair milky stream

Sample Descriptions

Storage Units: Metric

630.00 to 635.00 (5.00)	30%	Shale as above
635.00 to 645.00 (10.00)	60%	Sandstone buff, quartz, fine to med grains, subangular, well sorted, mostly consolidated, no cement, mod-p relief, Type IC, occasionally IB porosity, 3-8%
	40%	Shale black and dark gray, occasionally micromicaceous, hard, occasionally platy and slightly fissile, trace pyrite
645.00 to 650.00 (5.00)	60%	Shale as above
	40%	Sandstone buff, gray, quartz, fine to med grains, subangular, well sorted, consolidated, occasional quartz cement, mod-p relief, Type IC porosity, 5%
650.00 to 655.00 (5.00)	80%	Sandstone buff, white, dark brown, quartz, f-vf grains, subrounded, well sorted, consolidated, 10% calcite cement, mostly poor relief, Type ID porosity, 2%, trace bitumen in pores
	20%	Shale black, platy, fissile, dark gray are micromicaceous and hard, trace pyrite
655.00 to 660.00 (5.00)	75%	Sandstone buff, occasional dark brown, quartz, fine grains, subrounded, well sorted, consolidated, 15% calcite cement, mod-p relief, Type IC porosity, 3%
	25%	Shale as above
660.00 to 665.00 (5.00)	60%	Shale black, micromicaceous, platy, fissile, occasionally hard, trace pyrite
	40%	Sandstone white, buff, quartz, fine to very fine grains, subrounded, well sorted, well consolidated, 10% calcite cement, poor relief, Type II porosity, trace pyrite associated
665.00 to 670.00 (5.00)	70%	Sandstone white, buff, quartz, fine to very fine grains, subrounded, well sorted, well consolidated, 10% calcite cement, poor relief, Type II porosity, trace pyrite associated
	30%	Shale as above

Sample Descriptions

Storage Units: Metric

670.00 to 675.00 (5.00)	75%	Shale black, dark gray, micromicaceous, platy, fissile, trace pyrite, trace glauconite associated
	25%	Sandstone white, occasional buff, quartz, fine to very fine grains, subrounded, well sorted, well consolidated, 10% calcite cement, poor relief, Type II porosity, trace pyrite associated
675.00 to 685.00 (10.00)	70%	Shale dark gray, black, micromicaceous, occasionally hard, occasionally platy and waxy, trace pyrite associated,
	30%	Sandstone mostly white, buff, quartz, fine to very fine grains, subrounded, well sorted, very well consolidated, quartz overgrowths cement, poor relief, Type II porosity, trace pyrite associated
685.00 to 690.00 (5.00)	70%	Sandstone white, buff brown, quartz, fine grains, subrounded, moderately sorted, consolidated, occasional 20% calcite cement, mostly poor relief, Type II-IB porosity (5%), no permeability seen, trace pyrite associated, trace glauconite,
	30%	Shale black, platy and fissile, dark brown gray, slightly micromicaceous and hard, trace pyrite
Debolt: 701.00 MD, 701.00 TVD, -343.67 SSL		
700.00 to 705.00 (5.00)	50%	Limestone white and buff, cryptxl, mudstn, 20% calcite cement, argillaceous in part, C-C, tight
	50%	Shale black, platy, fissile, slightly friable, trace pyrite
705.00 to 715.00 (10.00)	75%	Limestone white and buff, cryptxl, mudstn, 20% calcite cement, C-C
	25%	Shale as above
715.00 to 725.00 (10.00)	60%	Limestone white and buff, cryptxl, mudstn, 10% calcite cement, C-C
	40%	Shale mostly black, occasional dark gray, platy, fissile, trace waxy, trace rhty, trace pyrite
725.00 to 735.00 (10.00)	50%	Limestone white and buff, cryptxl, mudstn, 10% calcite cement, C-C

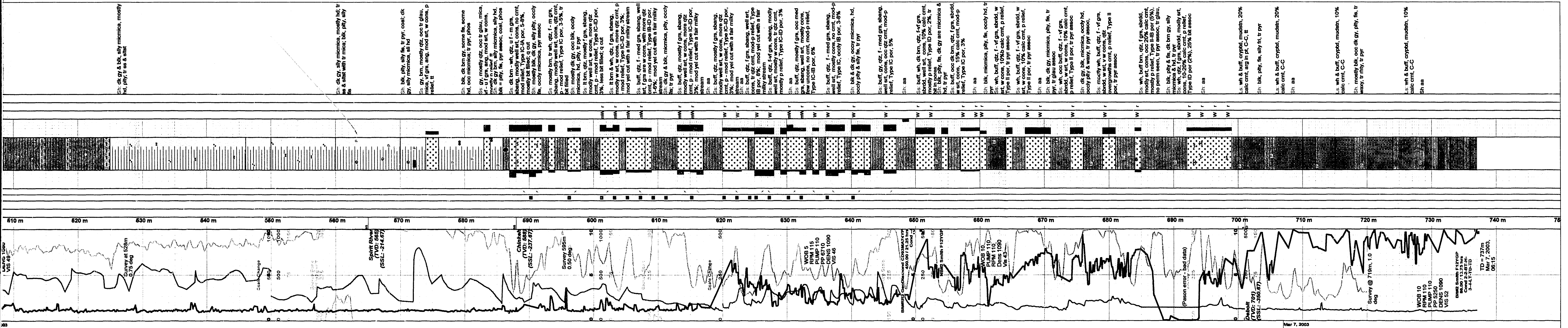
Sample Descriptions

Storage Units: Metric

725.00 to 735.00
(10.00)

50% Shale

mostly black, occasional dark gray, platy, fissile, trace waxy, trace rhty, trace pyrite



Subsurface Pressure Measurements

N.E.B. COPY

COPY

Company: ANADARKO CANADA CORPORATION
Well name: ANADARKO SW ARROWHEAD
Location: M-35
Date of test: 03/24/03 TO 06/10/03
Test by RAPID WIRELINE SERVICES LTD.
Interp. by P.D.Q. Services Ltd.

Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION	Well name: ANADARKO SW ARROWHEAD
Address: CALGARY, ALBERTA	Location: M-35
Field & Pool: ARROWHEAD / CHINKEH	Status: GAS
Type of test: SINGLE POINT	Date of test: 03/24/03 TO 06/10/03
Prod. Int KB: 587.0 to 591.0	Prod. through: 60.3MM TUBING
Elev. (CF) 346.28 (KB) 350.33	Mid-point prod.int. KB: 589
Pool datum:	Datum depth of well KB:
Tubing pres: INITIAL: N/A FIN: 4812	Casing pres: INITIAL: N/A FIN: 862
Shut in time: 03/27/03 09:30 HRS	Duration of Shut in: 1807.4500 HRS
Temperature at run depth: 25.610	On/off btm: 03/24/03 / 06/10/03
Deviated well: N	Depths corrected to TVD: Y

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

TOP RECORDER

Element serial#: 9519
 Pressure Range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02
 Reading Interval: 30 SECONDS
 Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 577.6

BOTTOM RECORDER

Element serial#: 9520
 Pressure range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02
 Reading Interval: : 30 SECONDS
 Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 578.1

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/24/2003	18:14:00	ON BOTTOM		
3/24/2003 18:14:00	0.0000	0.0000	25.663	4943.44	
3/25/2003 07:26:30	13.2083	13.2083	26.114	4534.59	
3/25/2003 07:27:00	13.2167	13.2167	26.089	4250.02	
3/25/2003 07:27:30	13.2250	13.2250	26.083	4003.18	
3/25/2003 07:28:00	13.2333	13.2333	26.077	3791.00	
3/25/2003 07:29:00	13.2500	13.2500	26.092	3449.25	
3/25/2003 07:30:00	13.2667	13.2667	26.111	3198.35	
3/25/2003 07:31:30	13.2917	13.2917	26.130	2952.56	
3/25/2003 07:41:30	13.4583	13.4583	26.252	3173.66	
3/25/2003 07:46:00	13.5333	13.5333	26.289	3391.60	
3/25/2003 07:48:30	13.5750	13.5750	26.305	3623.29	
3/25/2003 07:53:00	13.6500	13.6500	26.276	3827.22	
3/25/2003 08:01:30	13.7917	13.7917	26.310	4050.79	
3/25/2003 08:03:00	13.8167	13.8167	26.203	3709.82	
3/25/2003 08:06:00	13.8667	13.8667	26.162	3506.18	
3/25/2003 08:10:00	13.9333	13.9333	26.093	3217.83	
3/25/2003 08:17:00	14.0500	14.0500	26.051	3011.23	
3/25/2003 08:26:30	14.2083	14.2083	26.032	2806.95	
3/25/2003 09:28:30	15.2417	15.2417	25.964	3070.73	
3/25/2003 09:29:30	15.2583	15.2583	26.082	3356.13	

Company: ANADARKO CANADA CORPORATION
 Date of test: 03/24/03 TO 06/10/03
 Element serial#: 9519

Well name: ANADARKO SW ARROWHEAD
 Location: M-35
 Run Depth (KB): 577.6

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/25/2003 09:30:30	15.2750	15.2750	26.164	3591.26	
3/25/2003 09:32:00	15.3000	15.3000	26.301	3879.68	
3/25/2003 09:33:30	15.3250	15.3250	26.435	4117.37	
3/25/2003 09:35:30	15.3583	15.3583	26.472	4369.19	
3/25/2003 09:38:00	15.4000	15.4000	26.272	4587.71	
3/25/2003 09:41:30	15.4583	15.4583	26.146	4799.29	
3/25/2003 10:05:00	15.8500	15.8500	25.915	4999.95	
3/25/2003 18:14:00	24.0000	24.0000	25.945	4961.64	
3/25/2003 21:28:00	27.2333	27.2333	25.935	4963.55	
03/25/2003 21:28:00 OPENED WELL TO FLOW					
3/25/2003 21:28:00	27.2333	0.0000	25.935	4963.55	
3/25/2003 21:30:00	27.2667	0.0334	25.997	4134.17	
3/25/2003 21:30:30	27.2750	0.0417	25.931	2786.36	
3/25/2003 21:31:00	27.2833	0.0500	25.968	2244.15	
3/25/2003 21:39:00	27.4167	0.1834	25.979	1945.72	
3/25/2003 21:41:30	27.4583	0.2250	25.937	1731.72	
3/25/2003 21:46:00	27.5333	0.3000	25.880	1527.85	
3/25/2003 23:01:00	28.7833	1.5500	25.224	1320.13	
3/26/2003 18:14:00	48.0000	20.7667	23.315	1345.72	
3/27/2003 09:30:00	63.2667	36.0334	22.743	1296.63	
03/27/2003 09:30:00 SHUT WELL IN FOR BUILD UP					
3/27/2003 09:30:00	63.2667	0.0000	22.743	1296.63	
3/27/2003 09:30:30	63.2750	0.0083	22.789	1535.32	
3/27/2003 09:31:00	63.2833	0.0166	22.909	1801.26	
3/27/2003 09:31:30	63.2917	0.0250	23.049	2058.10	
3/27/2003 09:32:00	63.3000	0.0333	23.168	2301.83	
3/27/2003 09:32:30	63.3083	0.0416	23.268	2534.93	
3/27/2003 09:33:00	63.3167	0.0500	23.324	2754.35	
3/27/2003 09:33:30	63.3250	0.0583	23.386	2956.17	
3/27/2003 09:34:30	63.3417	0.0750	23.580	3314.04	
3/27/2003 09:35:30	63.3583	0.0916	23.802	3611.83	
3/27/2003 09:36:30	63.3750	0.1083	24.021	3844.12	
3/27/2003 09:38:00	63.4000	0.1333	24.277	4086.87	
3/27/2003 09:40:30	63.4417	0.1750	24.371	4315.86	
3/27/2003 09:53:30	63.6583	0.3916	23.628	4517.31	
3/27/2003 14:47:00	68.5500	5.2833	24.903	4717.36	
3/27/2003 18:14:00	72.0000	8.7333	25.174	4749.06	
3/28/2003 18:14:00	96.0000	32.7333	25.627	4815.24	
3/29/2003 18:14:00	120.0000	56.7333	25.718	4835.44	
3/30/2003 18:14:00	144.0000	80.7333	25.753	4847.99	
3/31/2003 18:14:00	168.0000	104.7333	25.771	4857.85	
4/1/2003 18:14:00	192.0000	128.7333	25.778	4865.77	
4/2/2003 18:14:00	216.0000	152.7333	25.781	4872.28	
4/3/2003 18:14:00	240.0000	176.7333	25.779	4877.67	
4/4/2003 18:14:00	264.0000	200.7333	25.783	4882.34	
4/5/2003 18:14:00	288.0000	224.7333	25.784	4886.38	
4/6/2003 18:14:00	312.0000	248.7333	25.788	4889.96	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/24/03 TO 06/10/03
Element serial#: 9519

Well name: ANADARKO SW ARROWHEAD
Location: M-35
Run Depth (KB): 577.6

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
4/7/2003 18:14:00	336.0000	272.7333	25.787	4893.10	
4/8/2003 18:14:00	360.0000	296.7333	25.802	4895.50	
4/9/2003 18:14:00	384.0000	320.7333	25.806	4907.94	
4/10/2003 18:14:00	408.0000	344.7333	25.772	4926.80	
4/11/2003 18:14:00	432.0000	368.7333	25.766	4942.29	
4/12/2003 18:14:00	456.0000	392.7333	25.760	4956.99	
4/13/2003 18:14:00	480.0000	416.7333	25.759	4970.78	
4/14/2003 18:14:00	504.0000	440.7333	25.755	4983.31	
4/15/2003 18:14:00	528.0000	464.7333	25.749	4994.88	
4/16/2003 18:14:00	552.0000	488.7333	25.748	5005.49	
4/17/2003 18:14:00	576.0000	512.7333	25.746	5014.79	
4/18/2003 18:14:00	600.0000	536.7333	25.744	5021.75	
4/19/2003 18:14:00	624.0000	560.7333	25.737	5026.44	
4/20/2003 18:14:00	648.0000	584.7333	25.739	5028.26	
4/21/2003 18:14:00	672.0000	608.7333	25.733	5029.20	
4/22/2003 18:14:00	696.0000	632.7333	25.733	5030.18	
4/23/2003 18:14:00	720.0000	656.7333	25.728	5031.35	
4/24/2003 18:14:00	744.0000	680.7333	25.727	5032.64	
4/25/2003 18:14:00	768.0000	704.7333	25.726	5033.65	
4/26/2003 18:14:00	792.0000	728.7333	25.725	5034.60	
4/27/2003 18:14:00	816.0000	752.7333	25.722	5035.76	
4/28/2003 18:14:00	840.0000	776.7333	25.721	5036.78	
4/29/2003 18:14:00	864.0000	800.7333	25.722	5037.56	
4/30/2003 18:14:00	888.0000	824.7333	25.719	5038.50	
5/1/2003 18:14:00	912.0000	848.7333	25.716	5039.33	
5/2/2003 18:14:00	936.0000	872.7333	25.716	5040.15	
5/3/2003 18:14:00	960.0000	896.7333	25.713	5040.92	
5/4/2003 18:14:00	984.0000	920.7333	25.714	5041.69	
5/5/2003 18:14:00	1008.0000	944.7333	25.713	5042.43	
5/6/2003 18:14:00	1032.0000	968.7333	25.710	5042.95	
5/7/2003 18:14:00	1056.0000	992.7333	25.711	5043.72	
5/8/2003 18:14:00	1080.0000	1016.7333	25.709	5044.29	
5/9/2003 18:14:00	1104.0000	1040.7333	25.710	5044.80	
5/10/2003 18:14:00	1128.0000	1064.7333	25.705	5045.33	
5/11/2003 18:14:00	1152.0000	1088.7333	25.705	5045.91	
5/12/2003 18:14:00	1176.0000	1112.7333	25.703	5046.40	
5/13/2003 18:14:00	1200.0000	1136.7333	25.705	5047.04	
5/14/2003 18:14:00	1224.0000	1160.7333	25.704	5047.49	
5/15/2003 18:14:00	1248.0000	1184.7333	25.698	5047.82	
5/16/2003 18:14:00	1272.0000	1208.7333	25.703	5048.38	
5/17/2003 18:14:00	1296.0000	1232.7333	25.701	5048.76	
5/18/2003 18:14:00	1320.0000	1256.7333	25.700	5049.10	
5/19/2003 18:14:00	1344.0000	1280.7333	25.699	5049.60	
5/20/2003 18:14:00	1368.0000	1304.7333	25.698	5050.04	
5/21/2003 18:14:00	1392.0000	1328.7333	25.696	5050.30	
5/22/2003 18:14:00	1416.0000	1352.7333	25.695	5050.72	
5/23/2003 18:14:00	1440.0000	1376.7333	25.696	5051.05	

Company: ANADARKO CANADA CORPORATION Well name: ANADARKO SW ARROWHEAD
Date of test: 03/24/03 TO 06/10/03 Location: M-35
Element serial#: 9519 Run Depth (KB): 577.6

TOP RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
5/24/2003 18:14:00	1464.0000	1400.7333	25.697	5051.39	
5/25/2003 18:14:00	1488.0000	1424.7333	25.693	5051.66	
5/26/2003 18:14:00	1512.0000	1448.7333	25.691	5052.05	
5/27/2003 18:14:00	1536.0000	1472.7333	25.691	5052.26	
5/28/2003 18:14:00	1560.0000	1496.7333	25.690	5052.51	
5/29/2003 18:14:00	1584.0000	1520.7333	25.691	5052.96	
5/30/2003 18:14:00	1608.0000	1544.7333	25.690	5053.29	
5/31/2003 18:14:00	1632.0000	1568.7333	25.690	5053.44	
6/1/2003 18:14:00	1656.0000	1592.7333	25.690	5053.84	
6/2/2003 18:14:00	1680.0000	1616.7333	25.689	5053.92	
6/3/2003 18:14:00	1704.0000	1640.7333	25.689	5054.21	
6/4/2003 18:14:00	1728.0000	1664.7333	25.690	5054.42	
6/5/2003 18:14:00	1752.0000	1688.7333	25.690	5054.83	
6/6/2003 18:14:00	1776.0000	1712.7333	25.687	5055.05	
6/7/2003 18:14:00	1800.0000	1736.7333	25.687	5055.20	
6/8/2003 18:14:00	1824.0000	1760.7333	25.689	5055.50	
6/9/2003 18:14:00	1848.0000	1784.7333	25.685	5055.64	
6/10/2003 16:57:00	1870.7167	1807.4500	25.672	5018.13	
	06/10/2003 16:57:00 OFF BOTTOM				

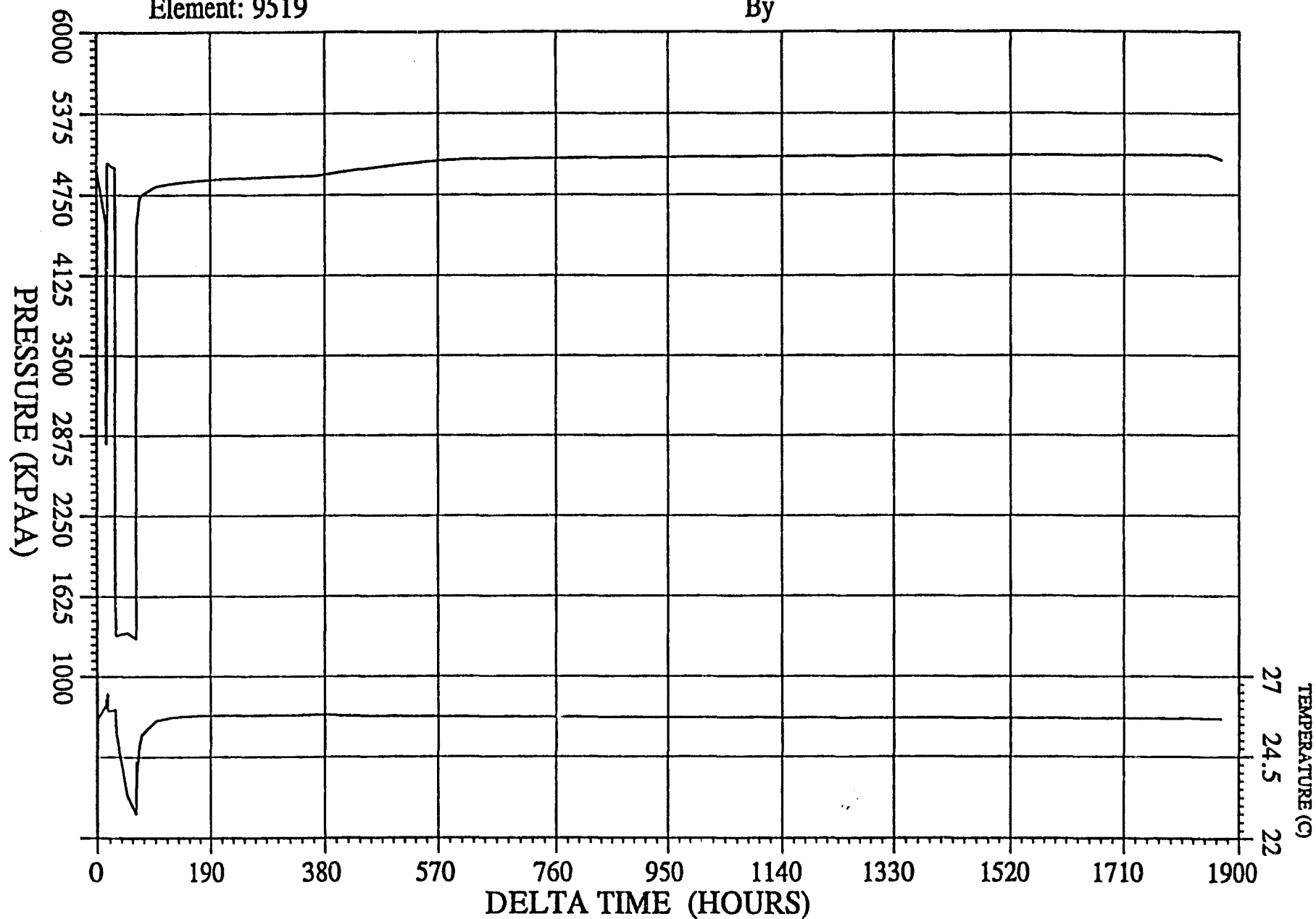
Remarks:

BOTTOM GAUGE HAD PRESSURE & TEMPERATURE SPIKES THROUGH-OUT TEST.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA CORPORATION Well name: ANADARKO SW ARROWHEAD
Location: M-35 Date of test: 03/24/03 TO 06/10/03
Element: 9519 By



Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
 Address: CALGARY, ALBERTA
 Field & Pool: ARROWHEAD / CHINKEH
 Type of test: SINGLE POINT
 Prod. Int KB: 587.0 to 591.0
 Elev. (CF) 346.28 (KB) 350.33
 Pool datum:

Well name: ANADARKO SW ARROWHEAD
 Location: M-35
 Status: GAS
 Date of test: 03/24/03 TO 06/10/03
 Prod. through: 60.3MM TUBING
 Mid-point prod.int. KB: 589
 Datum depth of well KB:

Tubing pres: INITIAL: N/A FIN: 4812
 Shut in time: 03/27/03 09:30 HRS
 Temperature at run depth: 25.610
 Deviated well: N

Casing pres: INITIAL: N/A FIN: 862
 Duration of Shut in: 1807.4500 HRS
 On/off btm: 03/24/03 / 06/10/03
 Depths corrected to TVD: Y

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

TOP RECORDER

Element serial#: 9519
 Pressure Range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02
 Reading Interval: 30 SECONDS
 Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 577.6

BOTTOM RECORDER

Element serial#: 9520
 Pressure range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02
 Reading Interval: : 30 SECONDS
 Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 578.1

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
	03/24/2003 18:14:00	ON BOTTOM			
3/24/2003 18:14:00	0.0000	0.0000	25.370	4946.71	
3/25/2003 07:27:30	13.2250	13.2250	26.005	4012.53	
3/25/2003 07:30:00	13.2667	13.2667	26.022	3206.42	
3/25/2003 08:01:00	13.7833	13.7833	26.227	4032.88	
3/25/2003 08:10:00	13.9333	13.9333	26.016	3225.30	
3/25/2003 09:33:00	15.3167	15.3167	26.297	4050.34	
3/25/2003 09:43:00	15.4833	15.4833	26.074	4867.72	
3/25/2003 18:14:00	24.0000	24.0000	25.920	4971.75	
3/25/2003 21:28:00	27.2333	27.2333	25.916	4973.59	
	03/25/2003 21:28:00	OPENED WELL TO FLOW			
3/25/2003 21:28:00	27.2333	0.0000	25.916	4973.59	
3/25/2003 21:30:00	27.2667	0.0334	25.953	4173.50	
3/25/2003 21:30:30	27.2750	0.0417	25.876	2820.66	
3/25/2003 21:39:00	27.4167	0.1834	25.905	1953.66	
3/26/2003 18:14:00	48.0000	20.7667	23.219	1349.81	
3/27/2003 09:30:00	63.2667	36.0334	22.647	1301.00	
	03/27/2003 09:30:00	SHUT WELL IN FOR BUILD UP			
3/27/2003 09:30:00	63.2667	0.0000	22.647	1301.00	
3/27/2003 09:32:00	63.3000	0.0333	23.036	2279.17	
3/27/2003 09:34:00	63.3333	0.0666	23.331	3127.89	

Company: ANADARKO CANADA CORPORATION
 Date of test: 03/24/03 TO 06/10/03
 Element serial#: 9520

Well name: ANADARKO SW ARROWHEAD
 Location: M-35
 Run Depth (KB): 578.1

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
3/27/2003 09:37:00	63.3833	0.1166	23.985	3935.06	
3/27/2003 15:22:30	69.1417	5.8750	24.828	4734.10	
3/27/2003 18:14:00	72.0000	8.7333	25.049	4759.10	
3/28/2003 18:14:00	96.0000	32.7333	25.554	4825.31	
3/29/2003 18:14:00	120.0000	56.7333	25.668	4845.51	
3/30/2003 18:14:00	144.0000	80.7333	25.715	4858.07	
3/31/2003 18:14:00	168.0000	104.7333	25.739	4867.90	
4/1/2003 18:14:00	192.0000	128.7333	25.752	4875.97	
4/2/2003 18:14:00	216.0000	152.7333	25.762	4882.37	
4/3/2003 18:14:00	240.0000	176.7333	25.762	4887.85	
4/4/2003 18:14:00	264.0000	200.7333	25.763	4892.45	
4/5/2003 18:14:00	288.0000	224.7333	25.767	4896.43	
4/6/2003 18:14:00	312.0000	248.7333	25.765	4900.08	
4/7/2003 18:14:00	336.0000	272.7333	25.770	4903.21	
4/8/2003 18:14:00	360.0000	296.7333	25.782	4905.63	
4/9/2003 18:14:00	384.0000	320.7333	25.788	4913.03	
4/10/2003 18:14:00	408.0000	344.7333	25.731	4931.98	
4/11/2003 18:14:00	432.0000	368.7333	25.720	4947.43	
4/12/2003 18:14:00	456.0000	392.7333	25.711	4962.10	
4/13/2003 18:14:00	480.0000	416.7333	25.706	4975.86	
4/14/2003 18:14:00	504.0000	440.7333	25.701	4988.46	
4/15/2003 09:45:30	519.5250	456.2583	211.242	7196.15	
4/15/2003 09:46:00	519.5333	456.2666	25.700	4995.67	
4/15/2003 18:14:00	528.0000	464.7333	25.702	5000.02	
4/16/2003 18:14:00	552.0000	488.7333	25.696	5010.63	
4/17/2003 18:14:00	576.0000	512.7333	25.692	5019.87	
4/18/2003 18:14:00	600.0000	536.7333	25.689	5026.86	
4/19/2003 18:14:00	624.0000	560.7333	25.686	5031.60	
4/20/2003 18:14:00	648.0000	584.7333	25.685	5033.43	
4/21/2003 18:14:00	672.0000	608.7333	25.683	5034.31	
4/22/2003 18:14:00	696.0000	632.7333	25.680	5035.38	
4/23/2003 18:14:00	720.0000	656.7333	25.678	5036.62	
4/24/2003 18:14:00	744.0000	680.7333	25.678	5037.68	
4/24/2003 22:01:30	747.7917	684.5250	20.804	18136.71	
4/24/2003 22:02:00	747.8000	684.5333	25.675	5037.74	
4/25/2003 18:14:00	768.0000	704.7333	25.673	5038.80	
4/25/2003 23:37:30	773.3917	710.1250	159.196	6442.14	
4/25/2003 23:38:00	773.4000	710.1333	25.672	5038.80	
4/26/2003 18:14:00	792.0000	728.7333	25.673	5039.71	
4/27/2003 14:01:30	811.7917	748.5250	108.314	5838.73	
4/27/2003 18:14:00	816.0000	752.7333	25.669	5040.92	
4/28/2003 15:37:30	837.3917	774.1250	108.315	5840.00	
4/28/2003 18:14:00	840.0000	776.7333	25.668	5041.85	
4/29/2003 12:57:30	858.7250	795.4583	20.844	18155.96	
4/29/2003 12:58:00	858.7333	795.4666	25.667	5042.68	
4/29/2003 18:14:00	864.0000	800.7333	25.668	5042.83	
4/30/2003 06:01:30	875.7917	812.5250	211.190	7266.41	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/24/03 TO 06/10/03
Element serial#: 9520

Well name: ANADARKO SW ARROWHEAD
Location: M-35
Run Depth (KB): 578.1

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
4/30/2003 06:02:00	875.8000	812.5333	25.666	5043.17	
4/30/2003 18:14:00	888.0000	824.7333	25.666	5043.70	
5/1/2003 18:14:00	912.0000	848.7333	25.664	5044.60	
5/2/2003 18:14:00	936.0000	872.7333	25.660	5045.30	
5/3/2003 15:05:30	956.8583	893.5916	108.302	5844.99	
5/3/2003 15:12:30	956.9750	893.7083	25.660	5045.99	
5/3/2003 18:14:00	960.0000	896.7333	25.661	5046.04	
5/4/2003 18:14:00	984.0000	920.7333	25.662	5046.82	
5/5/2003 18:14:00	1008.0000	944.7333	25.656	5047.51	
5/6/2003 18:14:00	1032.0000	968.7333	25.656	5048.09	
5/7/2003 18:14:00	1056.0000	992.7333	25.655	5048.79	
5/8/2003 18:14:00	1080.0000	1016.7333	25.655	5049.35	
5/9/2003 01:13:30	1086.9917	1023.7250	108.291	5849.11	
5/9/2003 01:14:00	1087.0000	1023.7333	25.656	5049.59	
5/9/2003 05:29:30	1091.2583	1027.9916	108.296	5849.27	
5/9/2003 05:30:00	1091.2667	1028.0000	25.654	5049.56	
5/9/2003 18:14:00	1104.0000	1040.7333	25.654	5050.05	
5/10/2003 11:21:30	1121.1250	1057.8583	108.292	5850.28	
5/10/2003 11:22:00	1121.1333	1057.8666	25.650	5050.47	
5/10/2003 18:14:00	1128.0000	1064.7333	25.653	5050.56	
5/11/2003 17:13:30	1150.9917	1087.7250	108.292	5851.07	
5/11/2003 17:14:00	1151.0000	1087.7333	25.651	5051.14	
5/11/2003 18:14:00	1152.0000	1088.7333	25.653	5051.03	
5/12/2003 18:14:00	1176.0000	1112.7333	25.648	5051.66	
5/13/2003 18:14:00	1200.0000	1136.7333	25.651	5052.12	
5/14/2003 18:14:00	1224.0000	1160.7333	25.649	5052.54	
5/15/2003 18:14:00	1248.0000	1184.7333	25.647	5053.00	
5/16/2003 18:14:00	1272.0000	1208.7333	25.651	5053.59	
5/17/2003 18:14:00	1296.0000	1232.7333	25.644	5053.87	
5/18/2003 18:14:00	1320.0000	1256.7333	25.643	5054.31	
5/19/2003 00:09:30	1325.9250	1262.6583	108.285	5854.96	
5/19/2003 00:10:00	1325.9333	1262.6666	25.649	5054.45	
5/19/2003 18:14:00	1344.0000	1280.7333	25.646	5054.77	
5/20/2003 18:14:00	1368.0000	1304.7333	25.644	5055.19	
5/21/2003 18:14:00	1392.0000	1328.7333	25.642	5055.46	
5/22/2003 18:14:00	1416.0000	1352.7333	25.644	5055.85	
5/23/2003 18:14:00	1440.0000	1376.7333	25.642	5056.22	
5/24/2003 18:14:00	1464.0000	1400.7333	25.642	5056.47	
5/25/2003 16:09:30	1485.9250	1422.6583	184.503	14665.49	
5/25/2003 16:10:00	1485.9333	1422.6666	25.642	5056.74	
5/25/2003 18:14:00	1488.0000	1424.7333	25.642	5056.88	
5/26/2003 18:14:00	1512.0000	1448.7333	25.641	5057.13	
5/27/2003 18:14:00	1536.0000	1472.7333	25.642	5057.50	
5/28/2003 18:14:00	1560.0000	1496.7333	25.640	5057.71	
5/29/2003 18:14:00	1584.0000	1520.7333	25.635	5058.11	
5/30/2003 18:14:00	1608.0000	1544.7333	25.637	5058.32	
5/31/2003 18:14:00	1632.0000	1568.7333	25.636	5058.53	

Company: ANADARKO CANADA CORPORATION
Date of test: 03/24/03 TO 06/10/03
Element serial#: 9520

Well name: ANADARKO SW ARROWHEAD
Location: M-35
Run Depth (KB): 578.1

BOTTOM RECORDER

COMMENT REAL TIME	ACCUM. D/T HOURS	EVENT D/T HOURS	TEMPERATURE RUNDEPTH	PRESSURE RUNDEPTH	PRESSURE MIDPNT
6/1/2003 18:14:00	1656.0000	1592.7333	25.636	5058.94	
6/2/2003 18:14:00	1680.0000	1616.7333	25.637	5059.14	
6/3/2003 18:14:00	1704.0000	1640.7333	25.636	5059.40	
6/3/2003 22:01:30	1707.7917	1644.5250	108.265	5860.84	
6/3/2003 22:02:00	1707.8000	1644.5333	25.635	5059.42	
6/4/2003 18:14:00	1728.0000	1664.7333	25.631	5059.57	
6/5/2003 18:14:00	1752.0000	1688.7333	25.633	5059.95	
6/6/2003 18:14:00	1776.0000	1712.7333	25.632	5060.15	
6/7/2003 18:14:00	1800.0000	1736.7333	25.634	5060.45	
6/8/2003 18:14:00	1824.0000	1760.7333	25.633	5060.60	
6/9/2003 18:14:00	1848.0000	1784.7333	25.633	5060.96	
6/10/2003 16:57:00	1870.7167	1807.4500	25.610	5023.16	
	06/10/2003 16:57:00 OFF BOTTOM				

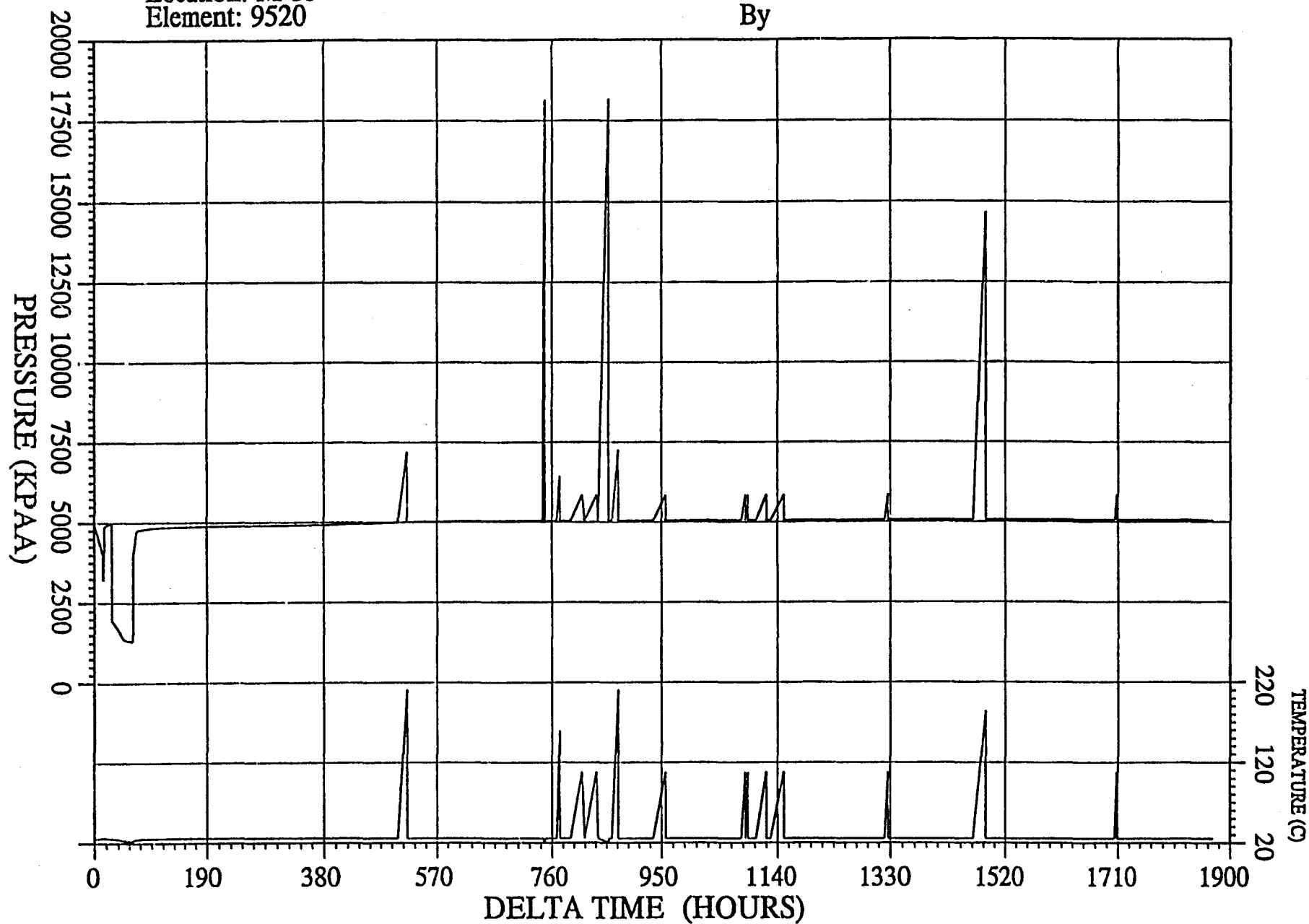
Remarks:

BOTTOM GAUGE HAD PRESSURE & TEMPERATURE SPIKES THROUGH-OUT TEST.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA CORPORATION Well name: ANADARKO SW ARROWHEAD
Location: M-35 Date of test: 03/24/03 TO 06/10/03
Element: 9520 By



Subsurface Pressure Measurements

Company: ANADARKO CANADA CORPORATION
 Address: CALGARY, ALBERTA
 Field & Pool: ARROWHEAD / CHINKEH
 Type of test: STATIC GRADIENT
 Prod. Int KB: 587.0 to 591.0
 Elev. (CF) 346.28 (KB) 350.33
 Pool datum:

Well name: ANADARKO SW ARROWHEAD
 Location: M-35
 Status: GAS
 Date of test: 06/10/03
 Prod. through: 60.3MM TUBING
 Mid-point prod.int. KB: 589
 Datum depth of well KB:

Tubing pres: 4812
 Shut in time: 03/27/03 09:30 HRS
 Temperature at run depth: 25.610
 Deviated well: N

Casing pres: 862
 Duration of Shut in: 1807.4500 HRS
 On bottom/off bottom: 16:52 / 16:57
 Depths corrected to TVD: Y

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

TOP RECORDER

BOTTOM RECORDER

Element serial#: 9519
 Pressure Range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02

Element serial#: 9520
 Pressure range: 24132 KPAA
 CAL-SCAN ELECTRONIC RECORDER
 Latest calibration: 09/27/02

Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 577.6
 Grad. at run depth: 0.123
 Pres. at run depth: 5018.1
 Pres. at mid point perf.: 5019.5
 Pres. at datum depth:

Gauge started: 03/24/03 18:01
 Gauge stopped: 06/10/03 17:40
 Run depth (KB): 578.1
 Grad. at run depth: 0.134
 Pres. at run depth: 5023.2
 Pres. at mid point perf.: 5024.6
 Pres. at datum depth:

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
3.6	8.22	4826.5	0.000
203.6	11.65	4901.9	0.377
403.6	19.15	4969.6	0.339
503.6	22.34	5004.7	0.351
547.6	24.54	5014.4	0.221
577.6	25.67	5018.1	0.123

Depth m	Temp DEG.C	Pressure KPAA	Gradient KPA/m
4.1	7.43	4829.1	0.000
204.1	12.18	4904.1	0.375
404.1	19.02	4974.6	0.352
504.1	22.66	5009.0	0.344
548.1	24.60	5019.1	0.230
578.1	25.61	5023.2	0.134

Fluid level at N/A
 Final pressure on bottom: 5018.1 KPAA

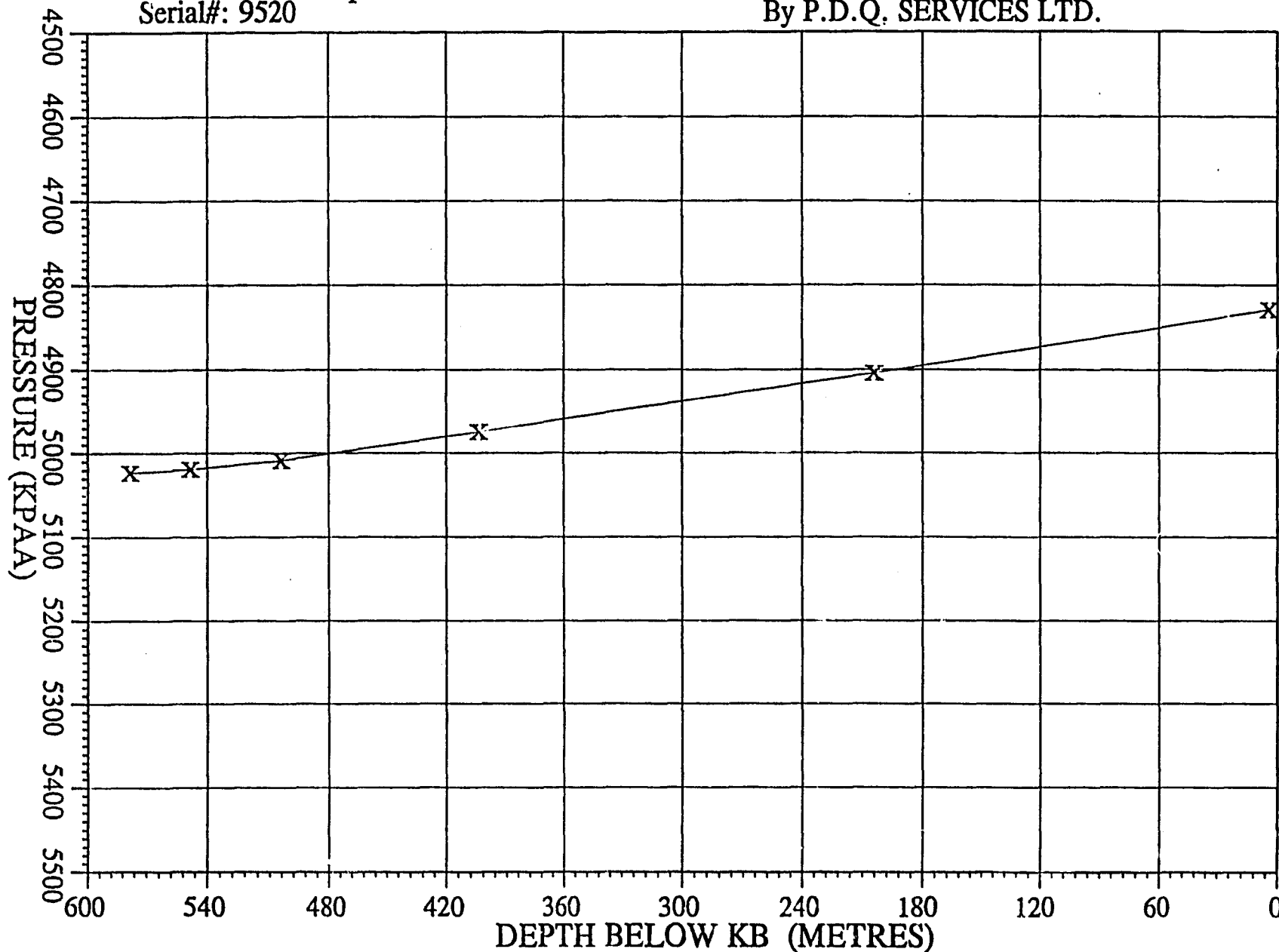
Fluid level at N/A
 Final pressure on bottom: 5023.2 KPAA

Remarks:
 REVERSE GRADIENT.

Test by: RAPID

Interpretation by P.D.Q. SERVICES LTD.

Company: ANADARKO CANADA CORPORATION Well name: ANADARKO SW ARROWHEAD
Location: M-35 Date of test: 03/24/03 TO 06/10/03
Pressure at run depth 5023.2 Fluid level N/A
Serial#: 9520 By P.D.Q. SERVICES LTD.



GRADIENT TEST

PROPOSED WELLSITE SURVEY

OVERSIZED

DOCUMENT

FILMED

ON

35mm

**RESISTIVITY/
CONDUCTIVITY**



Tucker
WIRELINE SERVICES

**DUAL INDUCTION
RESISTIVITY LOG**

File No. : GP-13540
Company : ANADARKO CANADA CORP.
Well : ANADARKO SW ARROWHEAD M-35
Field : SW ARROWHEAD
County :
Province : North West Territories
Country : Canada

N.E.B. COPY

Location : UNIQUE I.D.: 300M356030123000
LOCATION: M-35
LICENSE: 1989

Recorded By : TROY FREADRICH
Witnessed By : ERIKA LANGE

Date : MAR 07 2003
Run No. : 1

Permanent Datum : GEL
Drilling Measured From : KB
Log Measured From : KB
Above Permanent Datum : 4.1 M

Depth--Driller : 737.0 M
Depth--Logger : 735.8 M
Bottom Log Interval : 735.6 M
Top Log Interval : 200.0 M

Casing Depth--Driller : 201.0 M
Casing Depth--Logger : 200.0 M
Casing Diameter : 219.100 MM

Bit Size : 200.000 MM
Unit No. : 118
Location : GRANDE PRAIRIE

Elevations :
KB : 350.33 M
DF : M
GF : 346.26 M

Additional Services
CNT
LDT
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, conversion of log data to physical rock parameters or recommendations. T. W. S. does not guarantee or warrant either expressly or implicitly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations. The user of the log data is advised that the log data is not a 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 its services. Any user of the log data is warned that said user 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 : 1190.000
Viscosity : 82.000
pH : 9.000
Fluid Loss : 9.500
Salinity : 0.000
RN Source :
RN at : 1.500 OHM at 24 C
RN at BHT : 1.300 OHM at 30 C
RNF Source :
RNF at : 2.000 OHM at 24 C
RNF at BHT : 1.800 OHM at 30 C
RNC Source :
RNC at : 2.200 OHM at 24 C
RNC at BHT : 1.900 OHM at 30 C
Max Recorded Temp. : MAR 7 2003 @ 13:00
Time Circulation Stopped : 30 C
Operating Rig Time, Hrs. : 4.0

- Source Serial Numbers -
Gamma 1636G3
Neutron 71-2A-931B

- Sonde Serial Numbers -
GRIB GRIB-008
CNT CNP-AA-110
LDT LDP-CA-026
CST CST-AB-016
PIT PIT-AB-017

Casing Strings

Size (MM) Weight (KG/CM) Bottom (M)
219.100 35.70 201.00

- Comments -

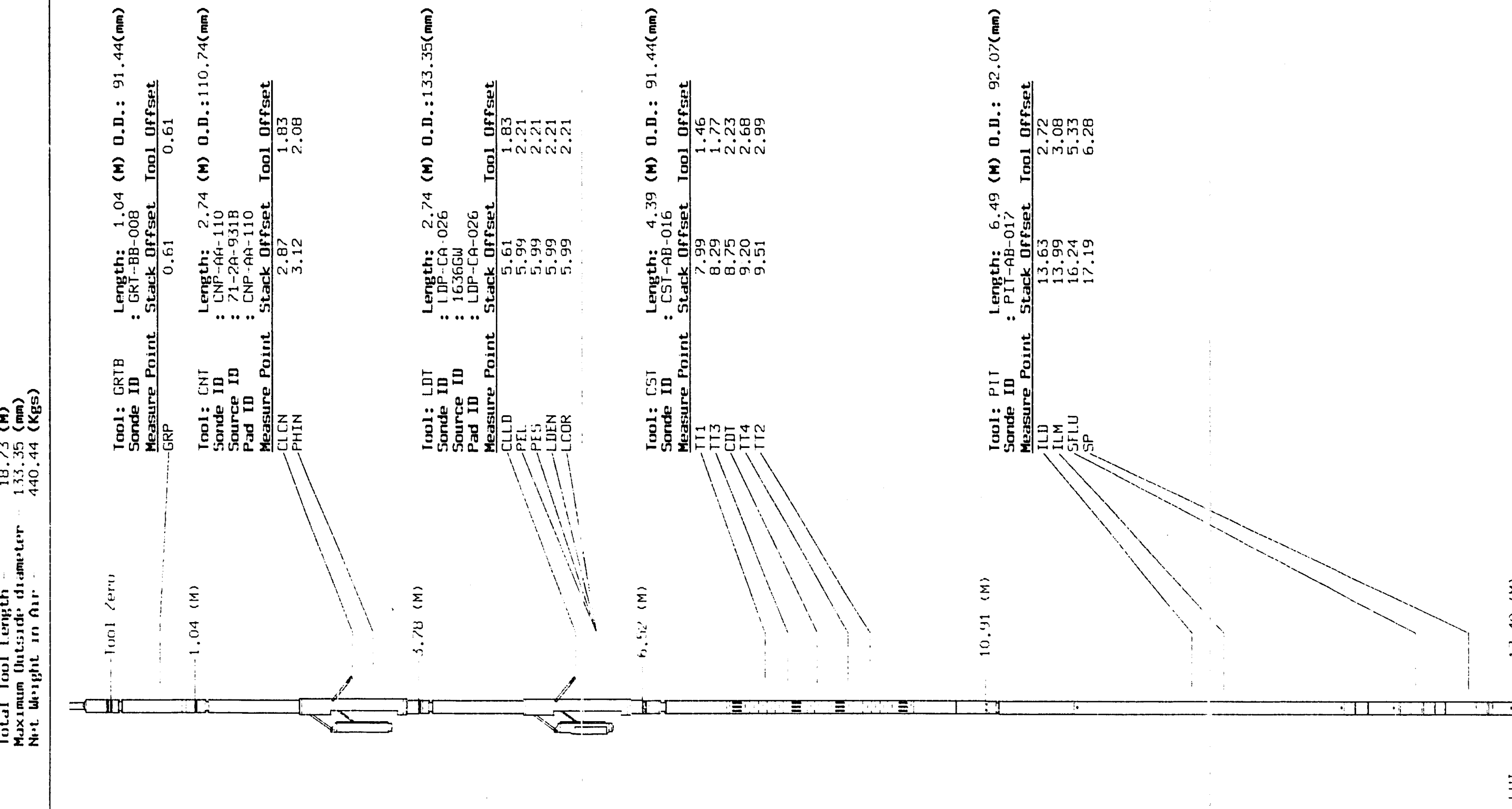
- 1) GRIB-CNT-LDT-CST-PIT RAN IN COMBINATION FOR SINGLE PASS EVALUATION.
- 2) ALL SCALES AND INTERVALS AT CLIENT'S REQUEST.
- 3) SEL IS ENVIRONMENTALLY CORRECTED.
- 4) CALIPERS VERIFIED IN CASING.
- 5) SONIC VERIFIED IN CASING.
- 6) GAMMA RAY LOGGED TO SURFACE.

OPERATORS:
S. ROSS
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)



1:600 SECTION

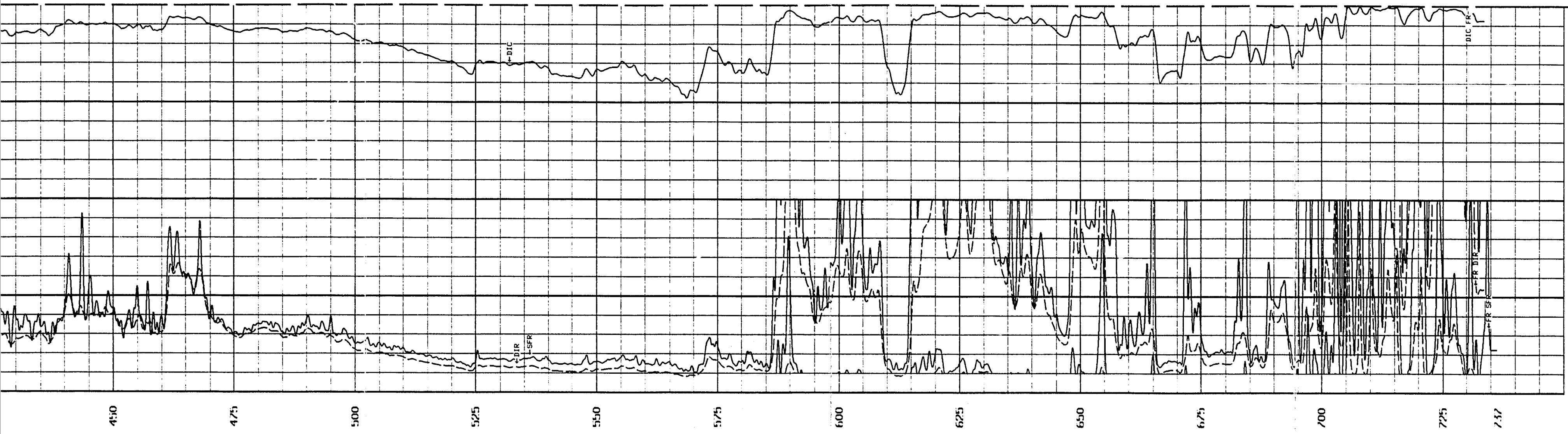
QUANTUM ENCLOSED RESISTIVITY OHMM 500.0 50.0
DEEP INDUCTION OHMM 500.0 50.0
DEEP CONDUCTIVITY OHMM 2000 1000

SPONTANEOUS POTENTIAL mV 10 10
GAMMA RAY API UNITS 150 150

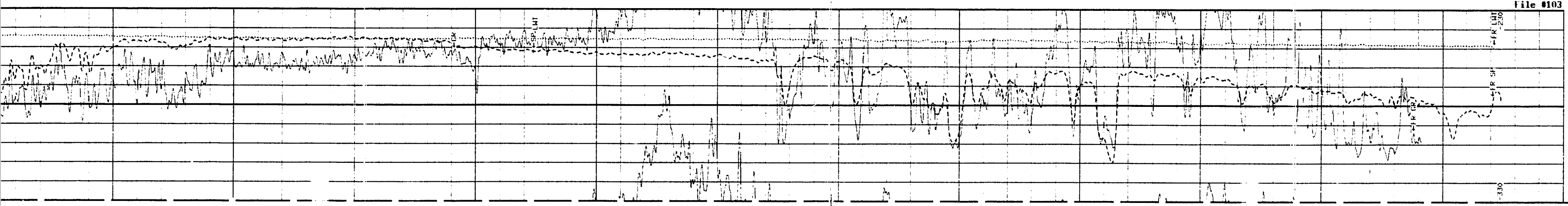
File #103

200 225 250 275 300 325 350 375 400 425

1000



1:600 SECTION



File #103

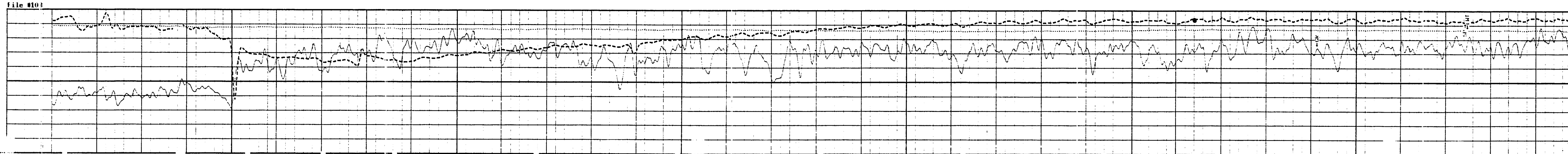
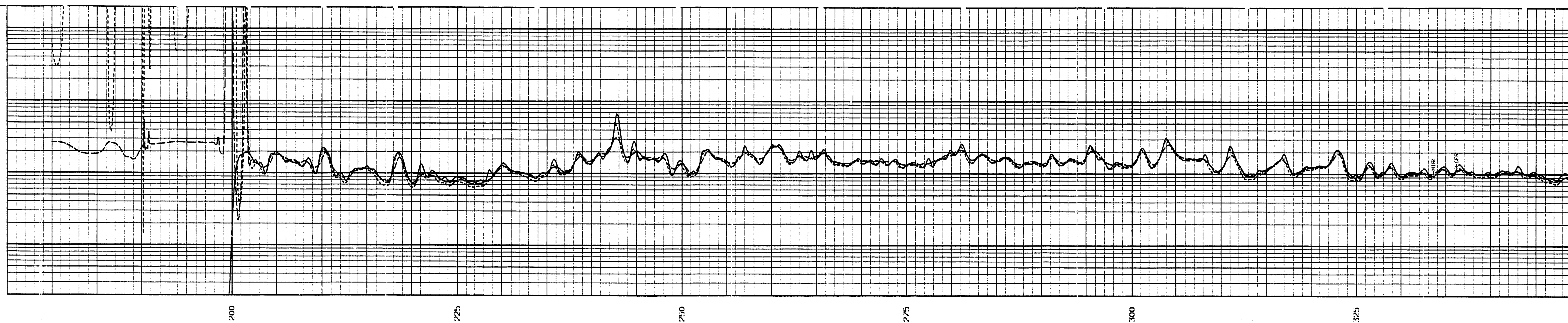
DEEP CONDUCTIVITY OHM	1000	0
DEEP INDUCTION OHM	500.0	50.0
SHALLOW FOCUSED RESISTIVITY OHM	500.0	50.0

GAMMA RAY GRT UNITS	300	150
SPONTANEOUS POTENTIAL mV	10	0
TENSION KG	5000	0

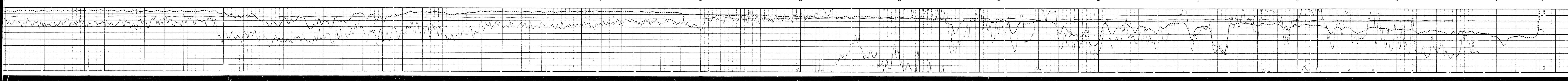
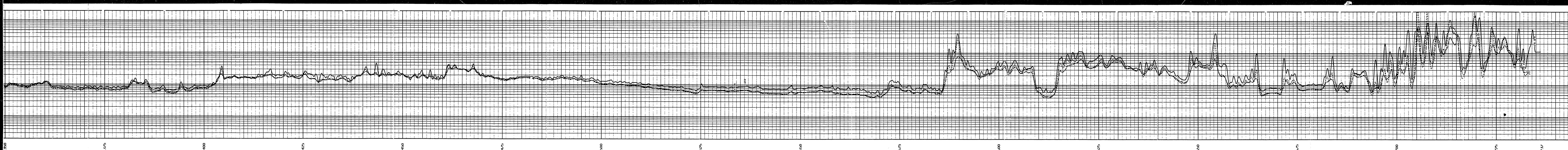
SHALLOW FOCUSED RESISTIVITY OHM	2000.0	0.2
MEDIUM INDUCTION OHM	2000.0	0.2
DEEP INDUCTION OHM	2000.0	0.2

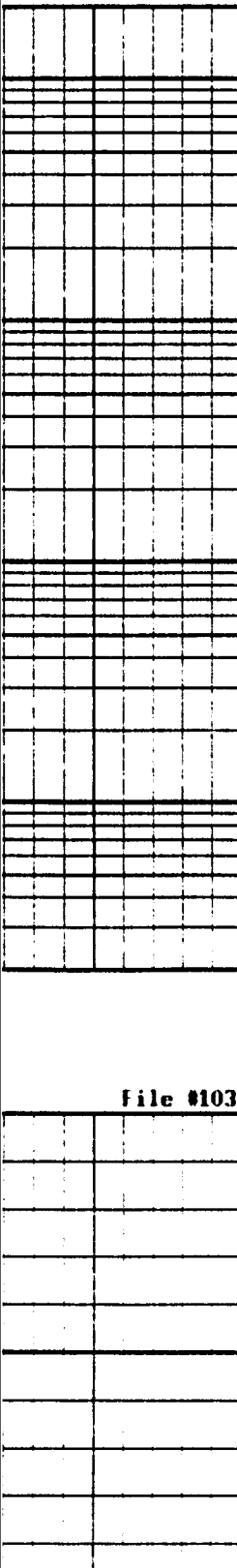
TENSION KG	5000	0
GAMMA RAY GRT UNITS	300	150
SPONTANEOUS POTENTIAL mV	10	0

1:240 MAIN SECTION

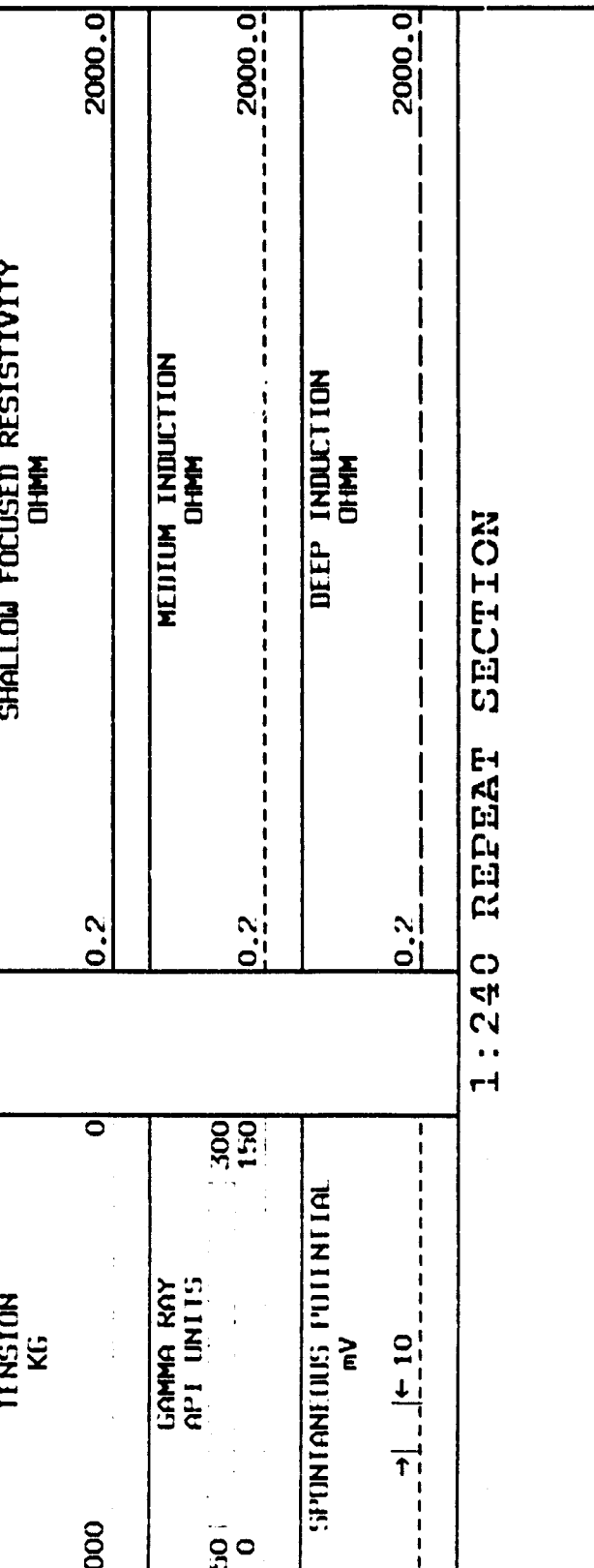


File #101

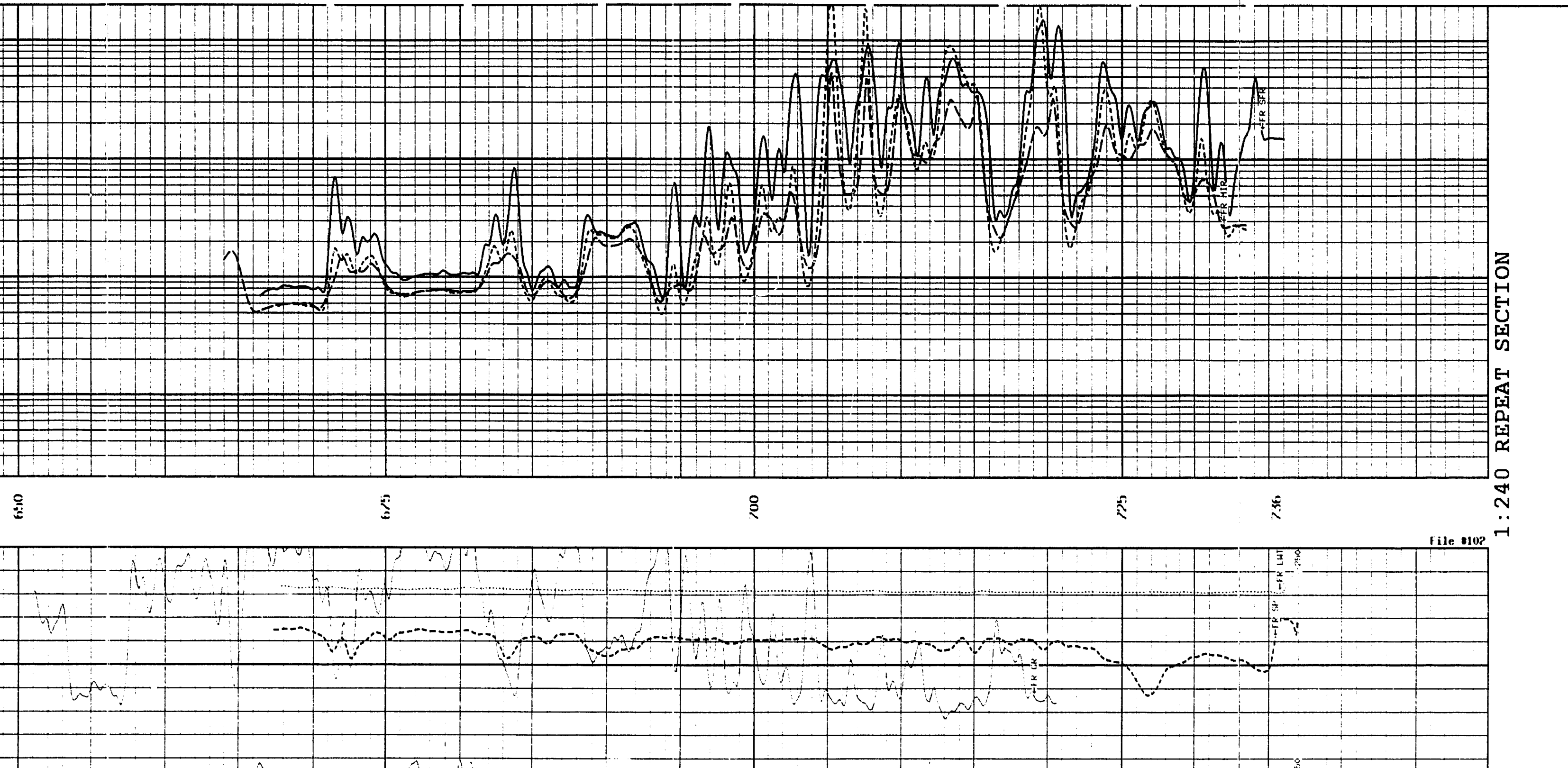




SPONTANEOUS POTENTIAL mV		DEEP INDUCTION OHMM	
1500 0		2000.0	
GAMMA RAY API UNITS		MEDIUM INDUCTION OHMM	
1500 0		2000.0	
TENSION KG		SHALLOW FOCUSED RESISTIVITY OHMM	
1500 0		2000.0	



SPONTANEOUS POTENTIAL mV		DEEP INDUCTION OHMM	
1500 0		2000.0	
GAMMA RAY API UNITS		MEDIUM INDUCTION OHMM	
1500 0		2000.0	
TENSION KG		SHALLOW FOCUSED RESISTIVITY OHMM	
1500 0		2000.0	



SPONTANEOUS POTENTIAL mV		DEEP INDUCTION OHMM	
1500 0		2000.0	
GAMMA RAY API UNITS		MEDIUM INDUCTION OHMM	
1500 0		2000.0	
TENSION KG		SHALLOW FOCUSED RESISTIVITY OHMM	
1500 0		2000.0	

File #102

1:240 MAIN SECTION

1:240 REPEAT SECTION

1:240 REPEAT SECTION

1:240 REPEAT SECTION

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1:240 REPEAT SECTION

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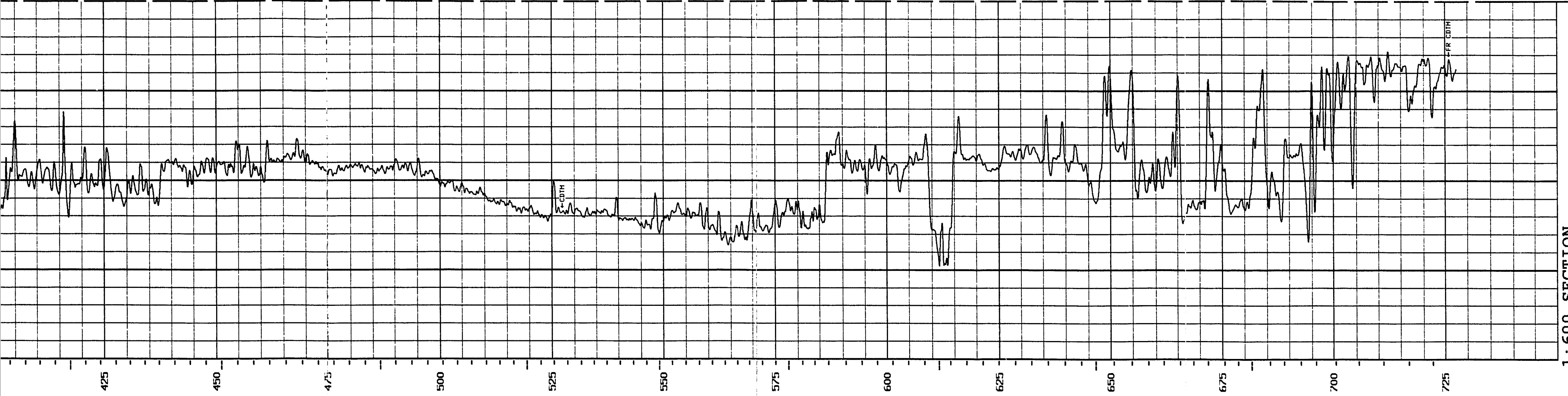
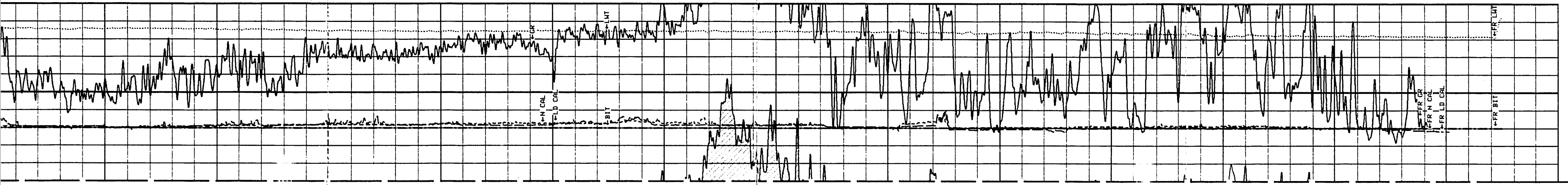
1:240 REPEAT SECTION

1:240 REPEAT SECTION

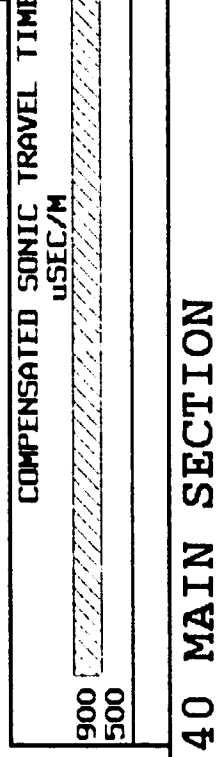
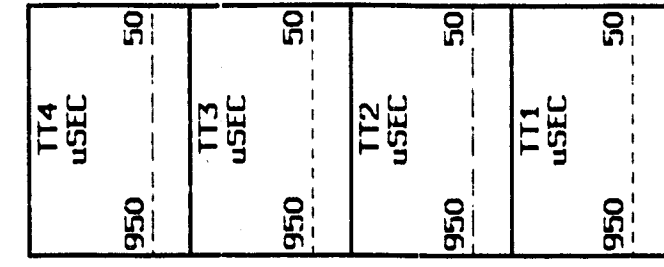
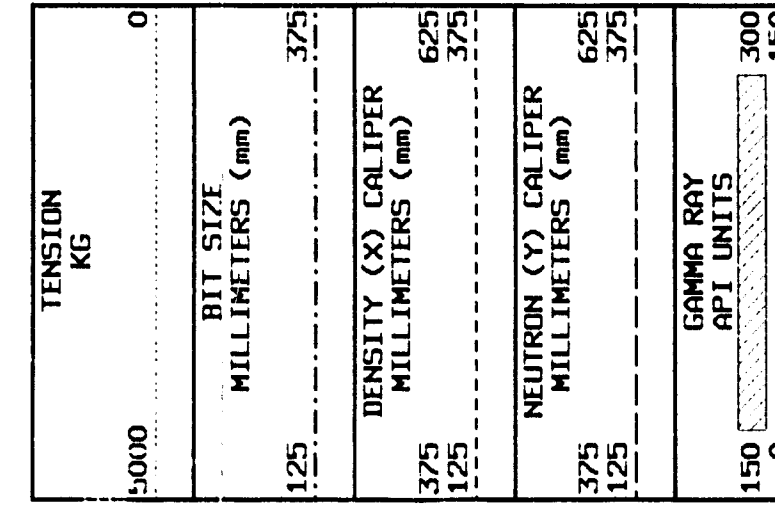
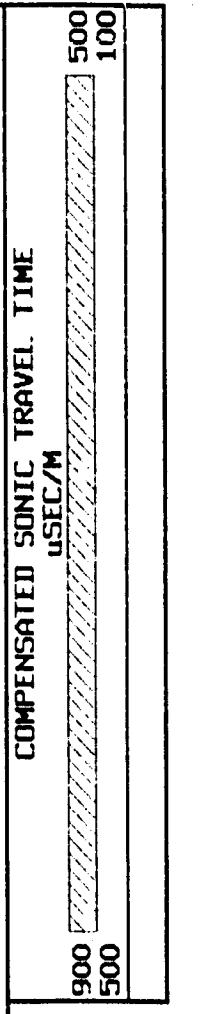
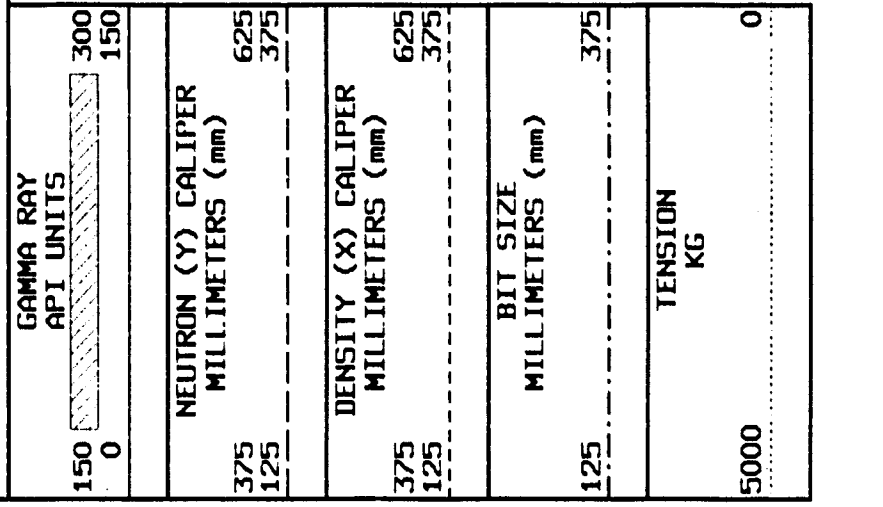
1:240 REPEAT SECTION

1:240 REPEAT SECTION

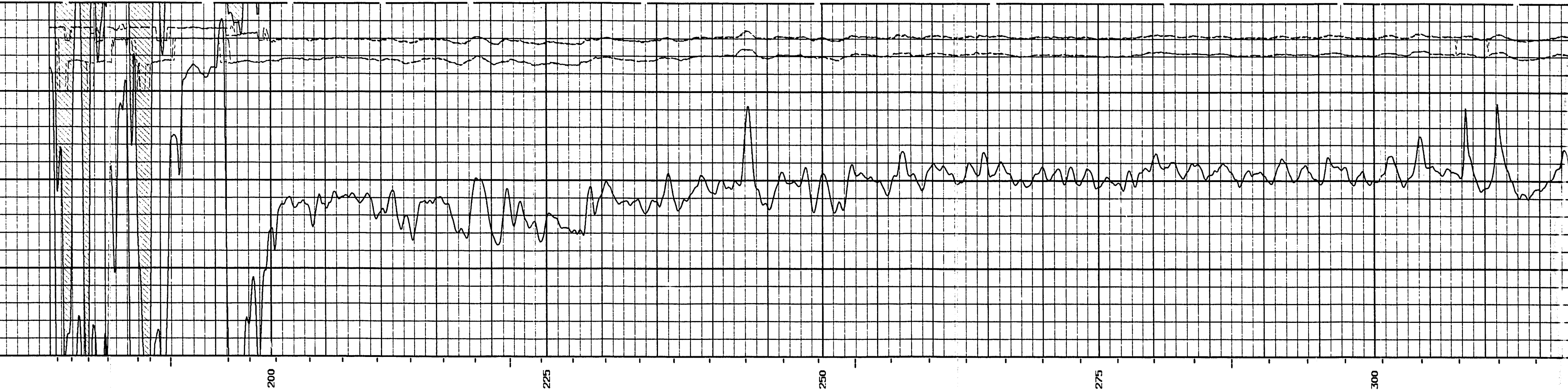
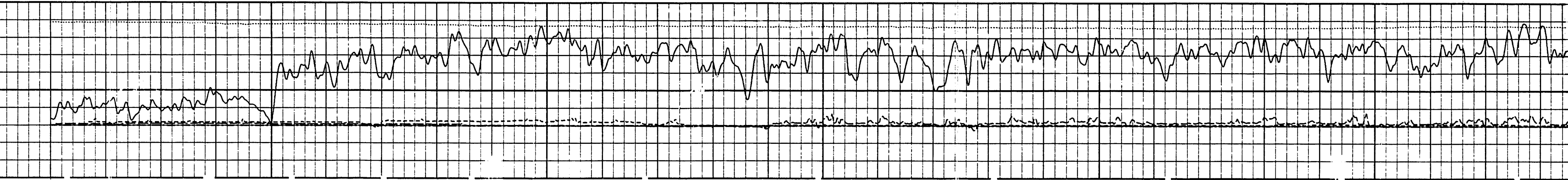
SONIC

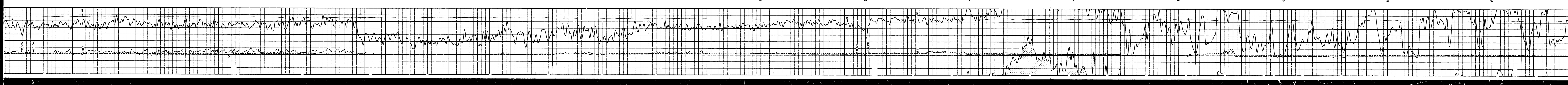
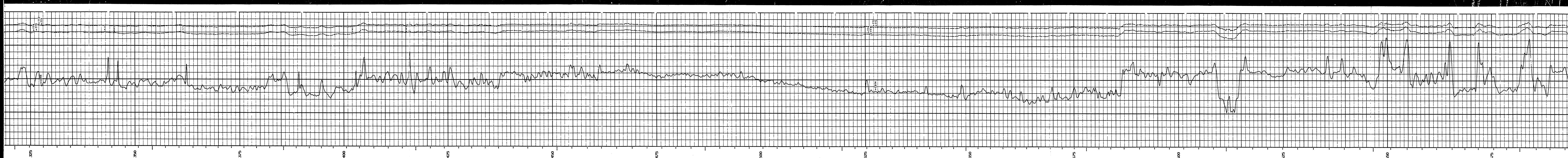


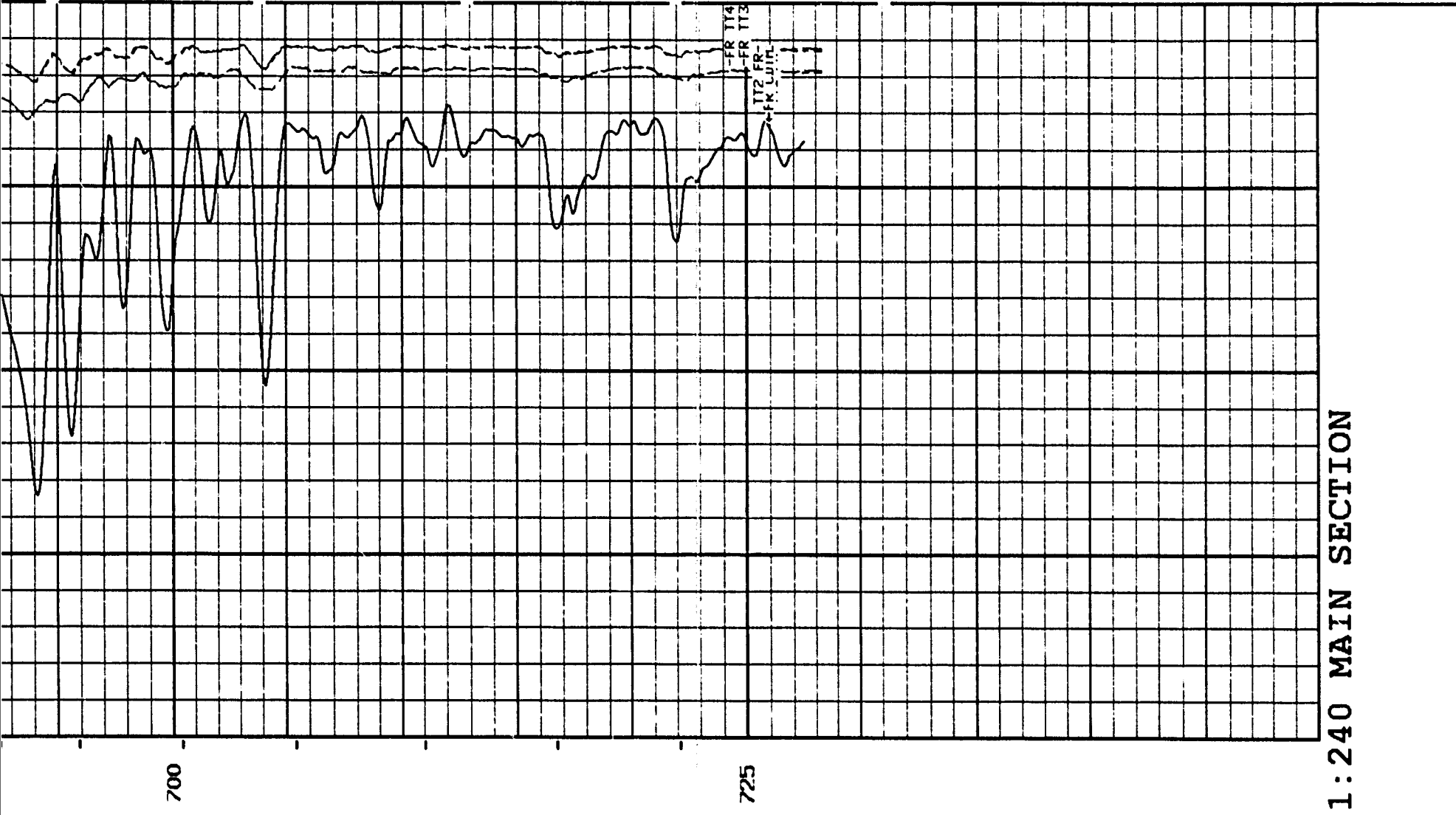
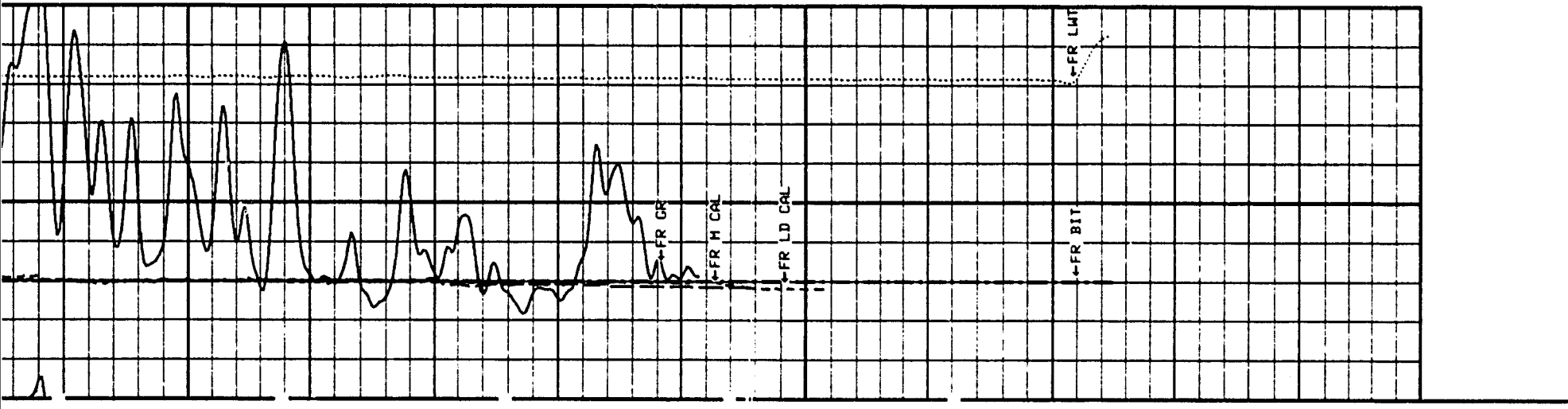
1:600 SECTION



1:240 MAIN SECTION







1:240 MAIN SECTION

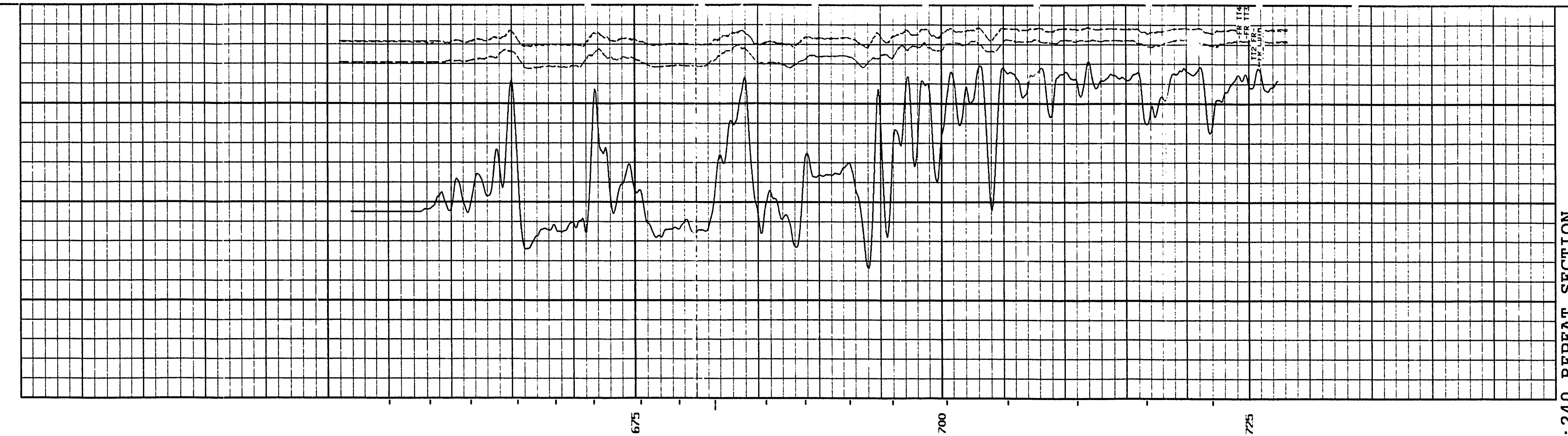
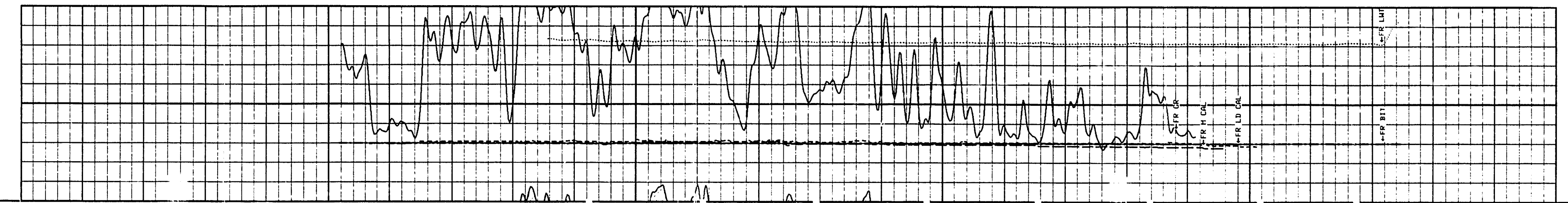
GAMMA RAY API UNITS		300	150
NEUTRON (Y) CALIPER MILLIMETERS (mm)		625	375
475	125		
DENSITY (X) CALIPER MILLIMETERS (mm)		625	375
375	125		
BIT SIZE (mm)		375	
125			
TENSION KG		5000	0

COMPENSATED SONIC TRAVEL TIME uSEC/M		900	500
T11 uSEC		950	50
T12 uSEC		950	50
T13 uSEC		950	50
T14 uSEC		950	50

TENSION KG		5000	0
BIT SIZE (mm)		375	
125			
DENSITY (X) CALIPER MILLIMETERS (mm)		625	375
375	125		
NEUTRON (Y) CALIPER MILLIMETERS (mm)		625	375
375	125		
GAMMA RAY API UNITS		300	150

COMPENSATED SONIC TRAVEL TIME uSEC/M		900	500
T14 uSEC		950	50
T13 uSEC		950	50
T12 uSEC		950	50
T11 uSEC		950	50

1:240 REPEAT SECTION



1:240 REPEAT SECTION

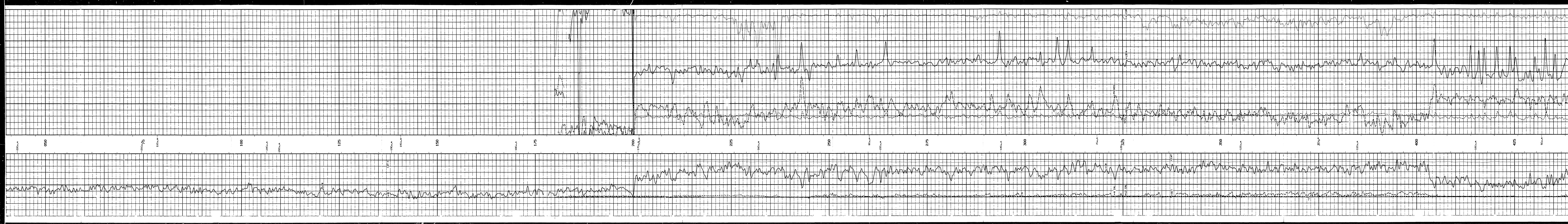
GAMMA RAY API UNITS		300	150
NEUTRON (Y) CALIPER MILLIMETERS (mm)		625	375
375	125		
DENSITY (X) CALIPER MILLIMETERS (mm)		625	375
375	125		
BIT SIZE (mm)		375	
125			
TENSION KG		5000	0

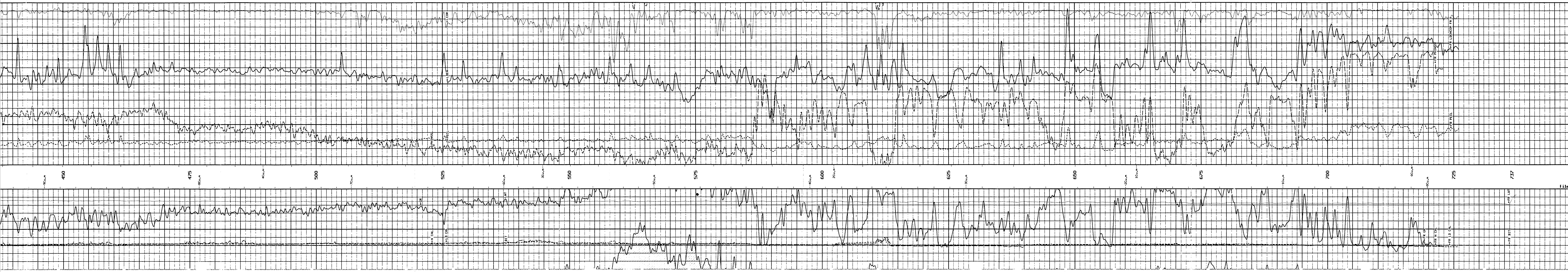
COMPENSATED SONIC TRAVEL TIME uSEC/M		900	500
T11 uSEC		950	50
T12 uSEC		950	50
T13 uSEC		950	50
T14 uSEC		950	50

Calibration Summary

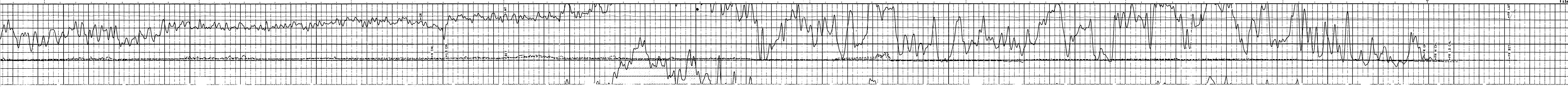
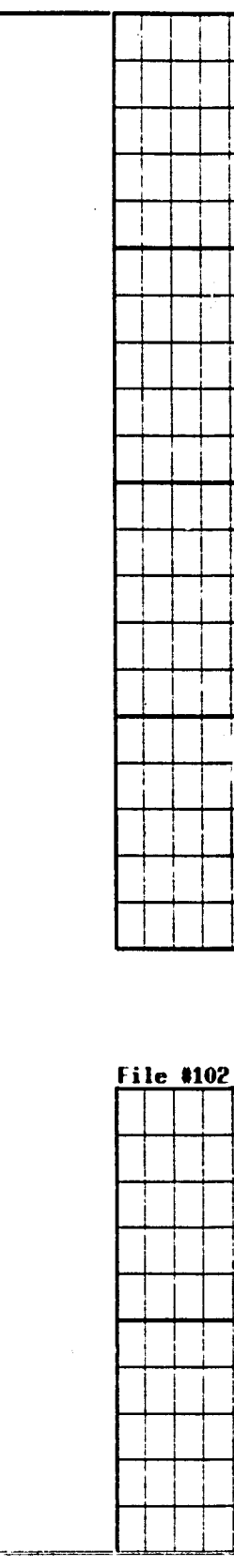
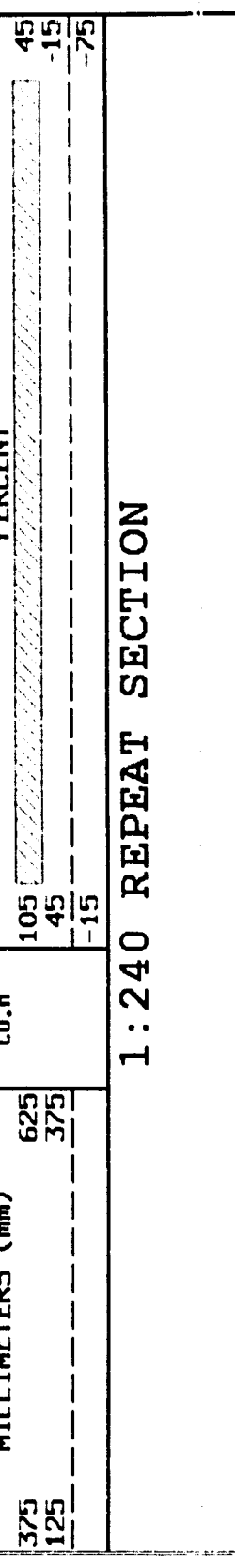
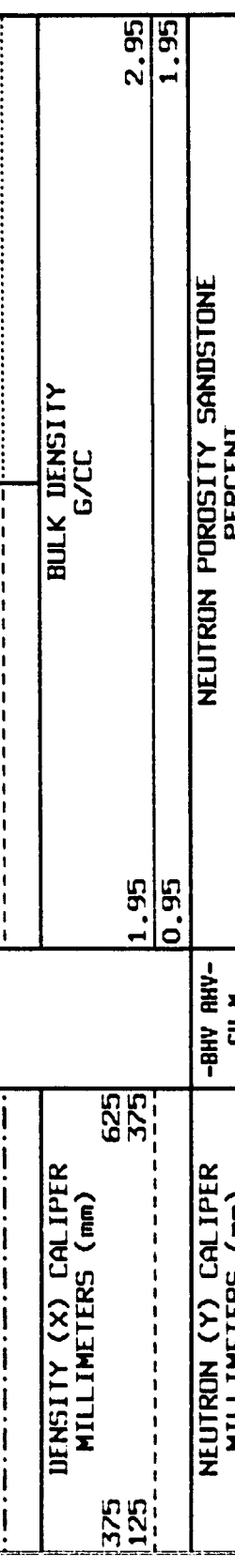
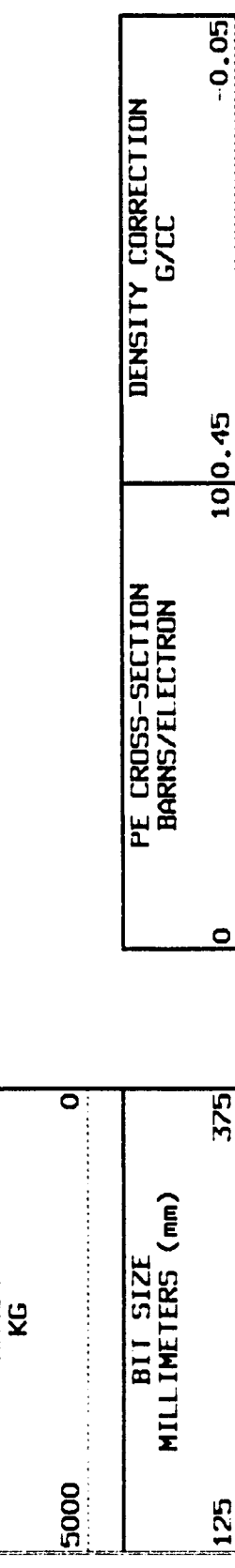
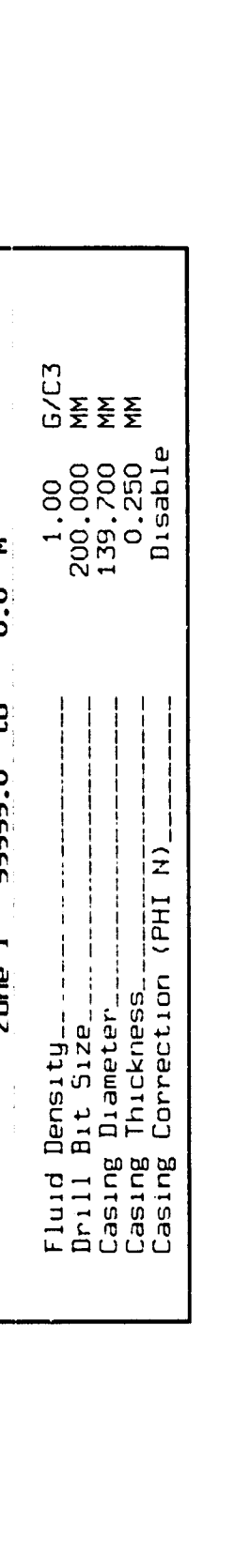
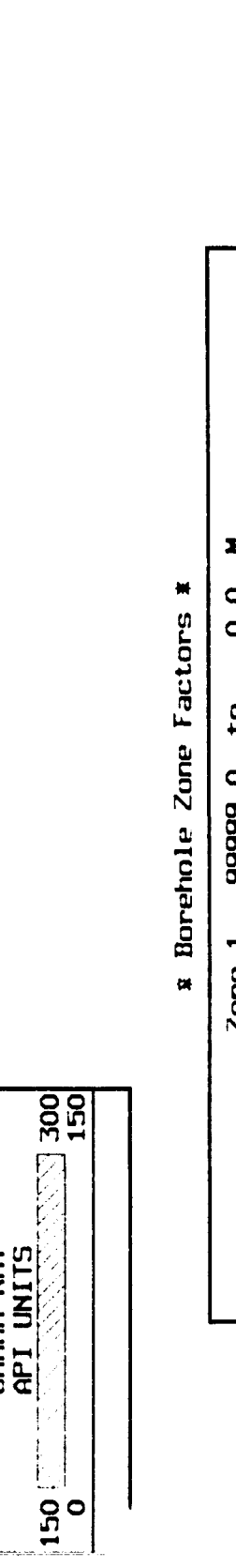
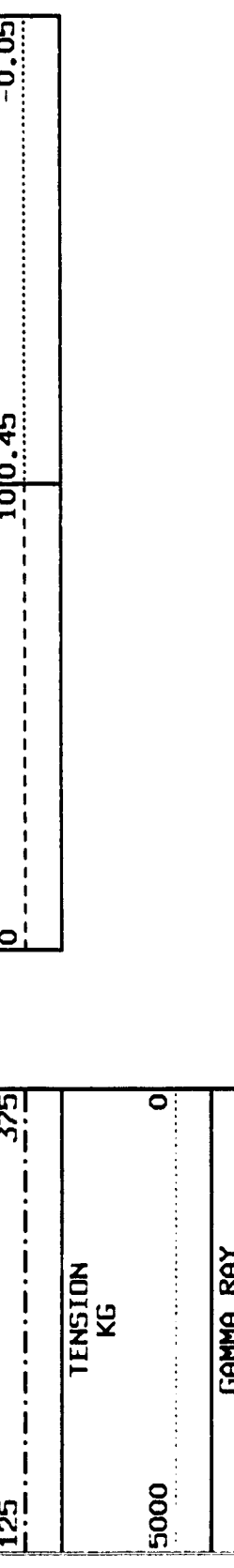
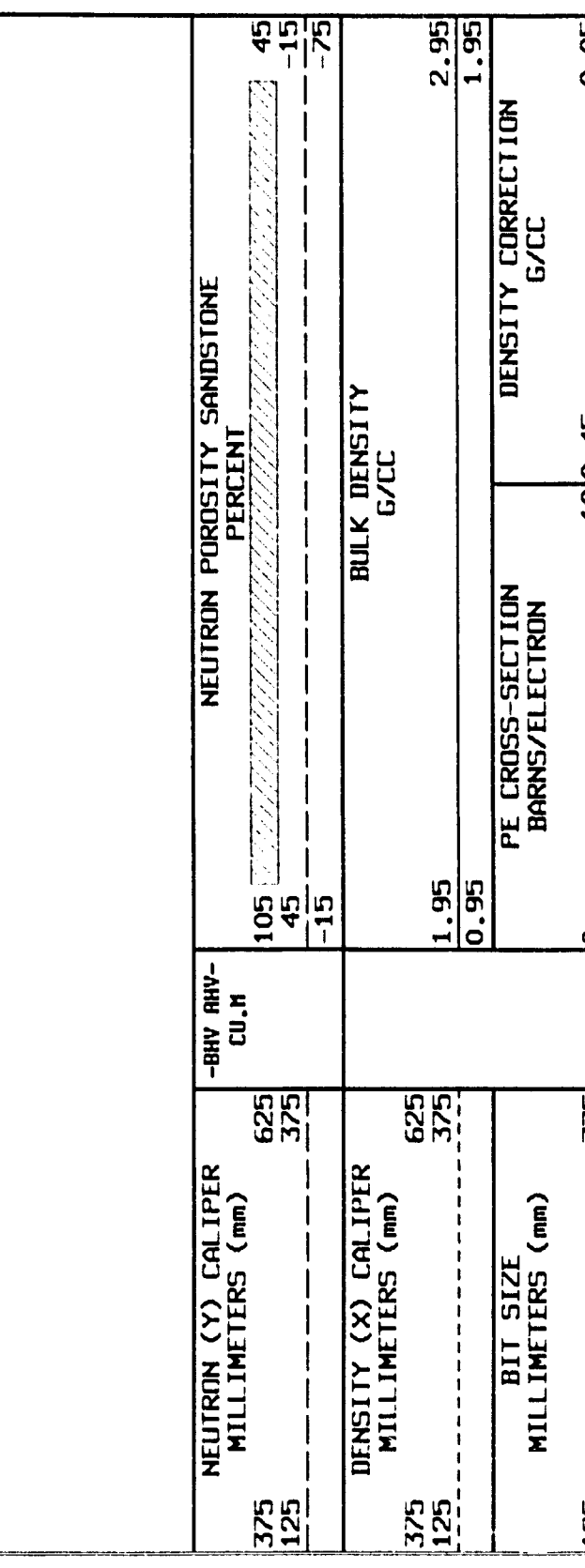
Shop Calibration GR1B		Time : 05:06	Units
Performed : 30-JAN-2003	GR1B	ID : GR1-BB-004	GRAP1
Sensor Suite : GR-GR5	Measured	Jig	Calibrated
GR	Background	54	357
Before Survey Verification GR1B		Time : 16:16	Units
Performed : 02-Mar-2003	GR1B	ID : GR1-BB-008	GRAP1
Sensor Suite : GR-GR5	Shop	Jig	Calibrated
GR	Before	170	164
After Survey Verification GR1B		Time : 18:28	Units
Performed : 02-Mar-2003	GR1B	ID : GR1-BB-008	GRAP1
Sensor Suite : GR-GR5	Before	Jig	Calibrated
GR	Before	164	178
Shop Calibration CNI		Time : 08:53	Units
Performed : 30-JAN-2003	CNI	ID : CNP-AA-110	Units
Sensor Suite : CAL-I-RCN	Jig - Measured	King#1 King#2	Calibrated
CL # 1	7.8 13.8	6.0 12.0	IN.
Shop Calibration CST		Time : 13:38	Units
Performed : 10-JAN-2003	CST	ID : CST-AB-016	Units
Sensor Suite : SON-ANA	Measured	Jig	Calibrated
T/R Pair	Measured	208.5	208.5
T181	208.5	208.5	208.5
T182	208.5	208.5	208.5
T183	208.5	208.5	208.5
T/R Pair		Measured	Calibrated
T181	208.5	208.5	208.5
T182	208.5	208.5	208.5
T183	208.5	208.5	208.5

DENSITY

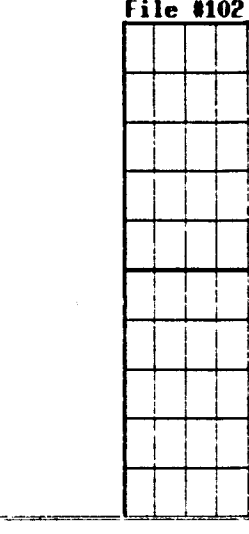
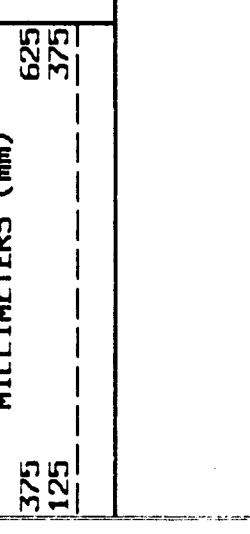
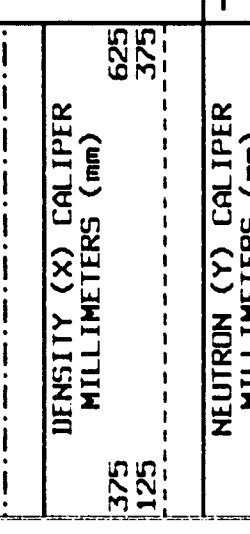
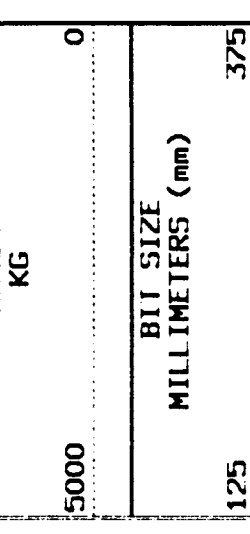
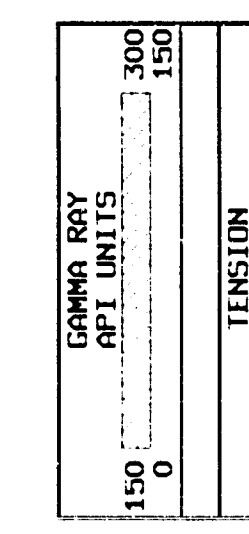
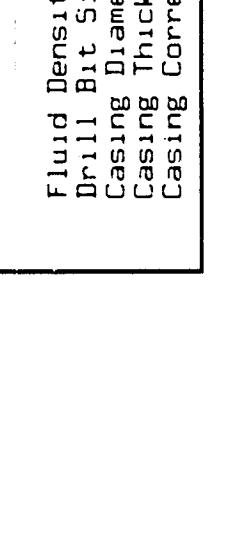
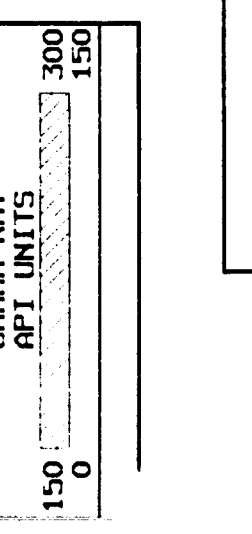
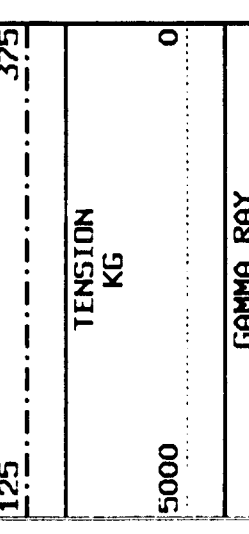
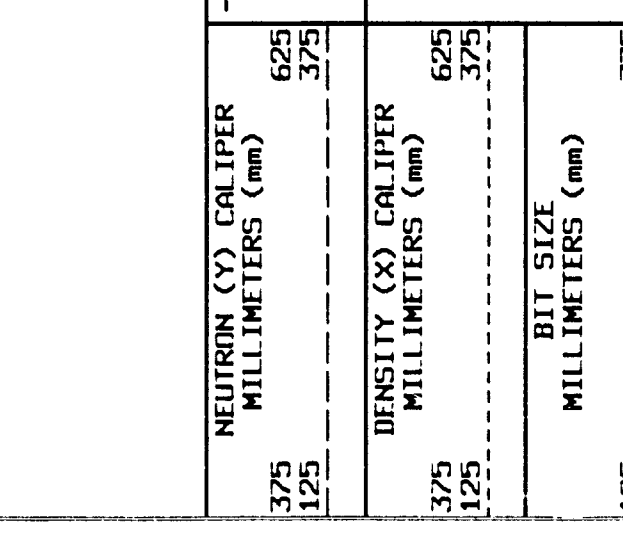


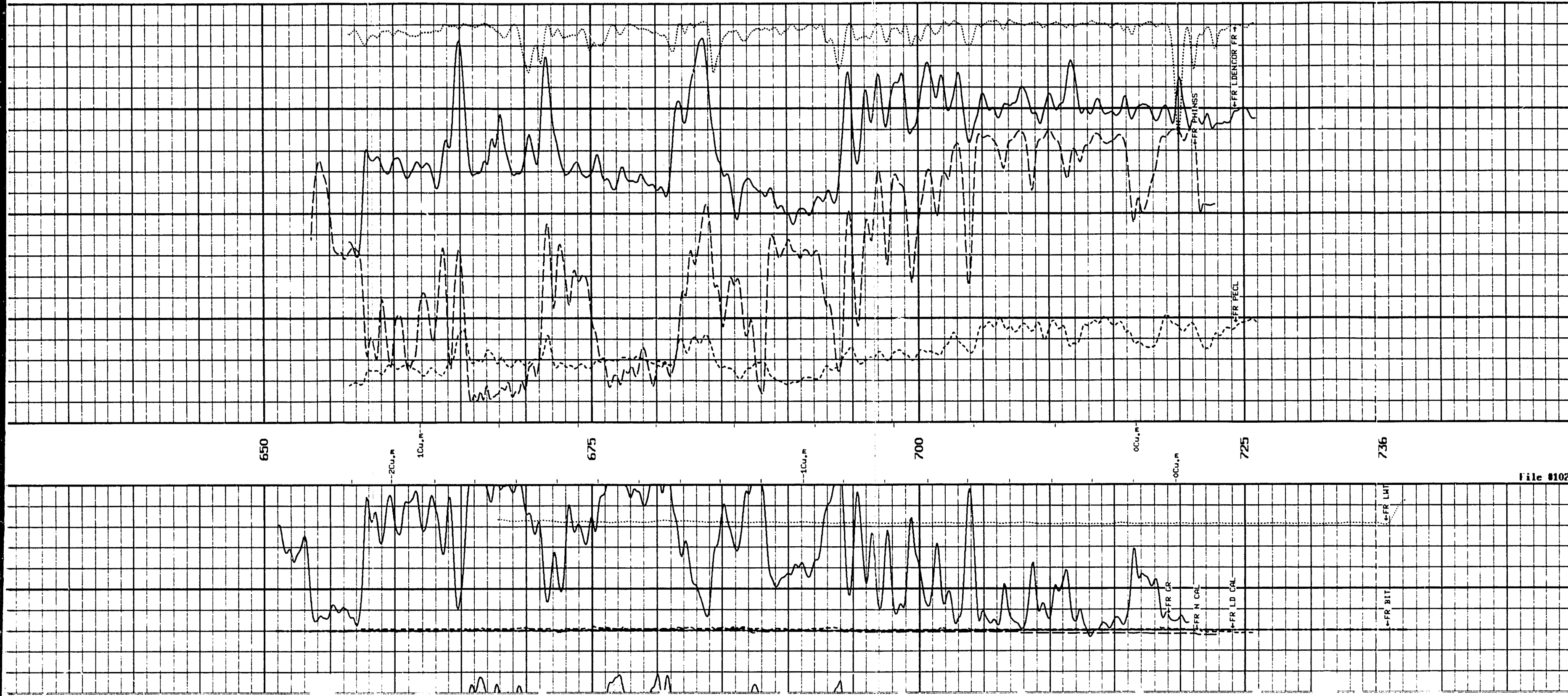


1:240 MAIN SECTION



1:240 REPEAT SECTION





1:240 REPEAT SECTION

NEUTRON (Y) CALIPER MILLIMETERS (mm)	625 375
DENSITY (X) CALIPER MILLIMETERS (mm)	625 375
BIT SIZE MILLIMETERS (mm)	375
TENSION KG	0
GAMMA RAY API UNITS	300 150 0

NEUTRON POROSITY SANDSTONE PERCENT

BULK DENSITY G/CC

PE CROSS-SECTION BARNES/ELECTRON

DENSITY CORRECTION G/CC

* Borehole Zone Factors *

Zone 1	99999.0 to 0.0 M
Fluid Density	1.00 G/CC
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
Drill Bit Size	1.000 IN
Casing Diameter	0.000 IN
Casing Thickness	200.000 IN
Casing Correction (PHI N)	xxxxxxx

* Calibration Summary *

Shop Calibration	
Performed : 30-Jan-2003	Time : 05:06
Sensor Suite : GR-GR5	ID : GRT-BB-008
GR	Measured Units CPS
Background 54	Calibrated Jig 170
	Units GRAP1
Before Survey Verification	
GR1B	
Performed : 07-Mar-2003	Time : 16:16
Sensor Suite : GR-GR5	ID : GRT-BB-008
GR	Shop Jig 164
	Before Jig 164
	Units GRAP1
After Survey Verification	
GR1B	
Performed : 07-Mar-2003	Time : 18:28
Sensor Suite : GR-GR5	ID : GRT-BB-008
GR	Before Jig 178
	After Jig 178
	Units GRAP1
Shop Calibration	
CNT	
Performed : 30-Jan-2003	Time : 00:13
Sensor Suite : BHC NEUT	ID : CNP-AA-110
Source ID : 71-2A-931B	
N/F	Measured Units
Porosity 3.9188	Calibrated Jig 3.9604
	Verification Jig 24.9
	Units %
Before Survey Verification	
CNT	
Performed : 30-Jan-2003	Time : 08:53
Sensor Suite : CALI-BCN	ID : CNP-AA-110
LL # 1	Jig - Measured Ring#1 Ring#2
	7.8 13.8 6.0 12.0
	Units IN.
Before Survey Verification	
CNT	
Performed : 07-Mar-2003	Time : 16:18
Sensor Suite : BHC NEUT	ID : CNP-AA-110
Source ID : 71-2A-931B	
N/F	Shop Jig 3.9604
Porosity 24.9	Before Jig 4.1089
	Units %
After Survey Verification	
CNT	
Performed : 07-Mar-2003	Time : 18:32
Sensor Suite : BHC NEUT	ID : CNP-AA-110
Source ID : 71-2A-931B	
N/F	Before Jig 4.2016
Porosity 27.4	After Jig 29.1
	Units %
Shop Calibration	
LDT	
Performed : 13-Feb-2003	Time : 09:47
Sensor Suite : BHC PEB	ID : LDP-CA-026
Source ID : 16366W	
LSW1	BKGD AL 1728 3198
LSW2	59 1239 5143
LSW3	111 2883 8894
LSW4	257 5022 4837
LSW5	325 60 87
LSW6	28 70 69
LSW7	67 70 71
LSW8	4 9 13
OS	0.000 -0.014
PES	0.000 2.500
SSDN	2.597 1.679
LLW1	Long Space Mg 3476
LLW2	69 671 3476
LLW3	124 1239 5143
LLW4	305 1955 7995
LLW5	380 894 2713
LLW6	36 39 58
LLW7	76 76 75
LLW8	7 76 76
QL	7 12
PFL	-0.013 0.007
LSDN	2.597 1.679
Units	Al+Fe 382
	CPS 1032
	CPS 2054
	CPS 4306
	CPS 2744
	CPS 54
	CPS 70
	CPS 70
	CPS 8
	G/CC 0.000
	6.000
	G/CC
Before Survey Verification	
LDT	
Performed : 18-Nov-2002	Time : 13:12
Sensor Suite : CALI-PEB	ID : LDP-CA-026
CL # 1	Jig - Measured Ring#1 Ring#2
	4.6 10.6 6.0 12.0
	Units IN.
Before Survey Verification	
LDT	
Performed : 07-Mar-2003	Time : 16:10
Sensor Suite : BHC PEB	ID : LDP-CA-026
Source ID : 16366W	
LSW1	Short Space BKGD AL 1728 3198
LSW2	59 1239 5143
LSW3	111 2883 8894
LSW4	257 5022 4837
LSW5	325 60 87
LSW6	28 70 69
LSW7	67 70 71
LSW8	4 9 13
OS	0.000 -0.013
PES	0.000 2.500
SSDN	2.597 1.679
LLW1	Long Space Mg 3476
LLW2	69 671 3476
LLW3	124 1239 5143
LLW4	305 1955 7995
LLW5	380 894 2713
LLW6	36 39 58
LLW7	76 76 75
LLW8	7 76 76
QL	7 12
PFL	-0.013 0.007
LSDN	2.597 1.679
Units	Al+Fe 382
	CPS 1032
	CPS 2054
	CPS 4306
	CPS 2744
	CPS 54
	CPS 70
	CPS 70
	CPS 8
	G/CC 0.000
	6.000
	G/CC
After Survey Verification	
LDT	
Performed : 07-Mar-2003	Time : 18:29
Sensor Suite : BHC PEB	ID : LDP-CA-026
Source ID : 16366W	
LSW1	Short Space BKGD AL 1728 3198
LSW2	59 1239 5143
LSW3	111 2883 8894
LSW4	257 5022 4837
LSW5	325 60 87
LSW6	28 70 69
LSW7	67 70 71
LSW8	4 9 13
OS	0.000 -0.013
PES	0.000 2.500
SSDN	2.597 1.679
LLW1	Long Space Mg 3476
LLW2	69 671 3476
LLW3	124 1239 5143
LLW4	305 1955 7995
LLW5	380 894 2713
LLW6	36 39 58
LLW7	76 76 75
LLW8	7 76 76
QL	7 12
PFL	-0.013 0.007
LSDN	2.597 1.679
Units	Al+Fe 382
	CPS 1032
	CPS 2054
	CPS 4306
	CPS 2744
	CPS 54
	CPS 70
	CPS 70
	CPS 8
	G/CC 0.000
	6.000
	G/CC
After Survey Verification	
LDT	
Performed : 07-Mar-2003	Time : 18:29
Sensor Suite : BHC PEB	ID : LDP-CA-026
Source ID : 16366W	
LSW1	Short Space BKGD AL 1728 3198
LSW2	59 1239 5143
LSW3	111 2883 8894
LSW4	257 5022 4837
LSW5	325 60 87
LSW6	28 70 69
LSW7	67 70 71
LSW8	4 9 13
OS	0.000 -0.013
PES	0.000 2.500
SSDN	2.597 1.679
LLW1	Long Space Mg 3476
LLW2	69 671 3476
LLW3	124 1239 5143
LLW4	305 1955 7995
LLW5	380 894 2713
LLW6	36 39 58
LLW7	76 76 75
LLW8	7 76 76
QL	7 12
PFL	-0.013 0.007
LSDN	2.597 1.679
Units	Al+Fe 382
	CPS 1032
	CPS 2054
	CPS 4306
	CPS 2744
	CPS 54
	CPS 70
	CPS 70
	CPS 8
	G/CC 0.000
	6.000
	G/CC

MISCELLANEOUS



FILING #
LSD.-
SEC.-
TWP.-
RGE.-
W.

Company Anadarko Canada Energy
Well Anadarko SW Arrowhead m-35
Field Arrowhead
Province Northwest Territories
Location m-35

OTHER SERVICES
G. Ring

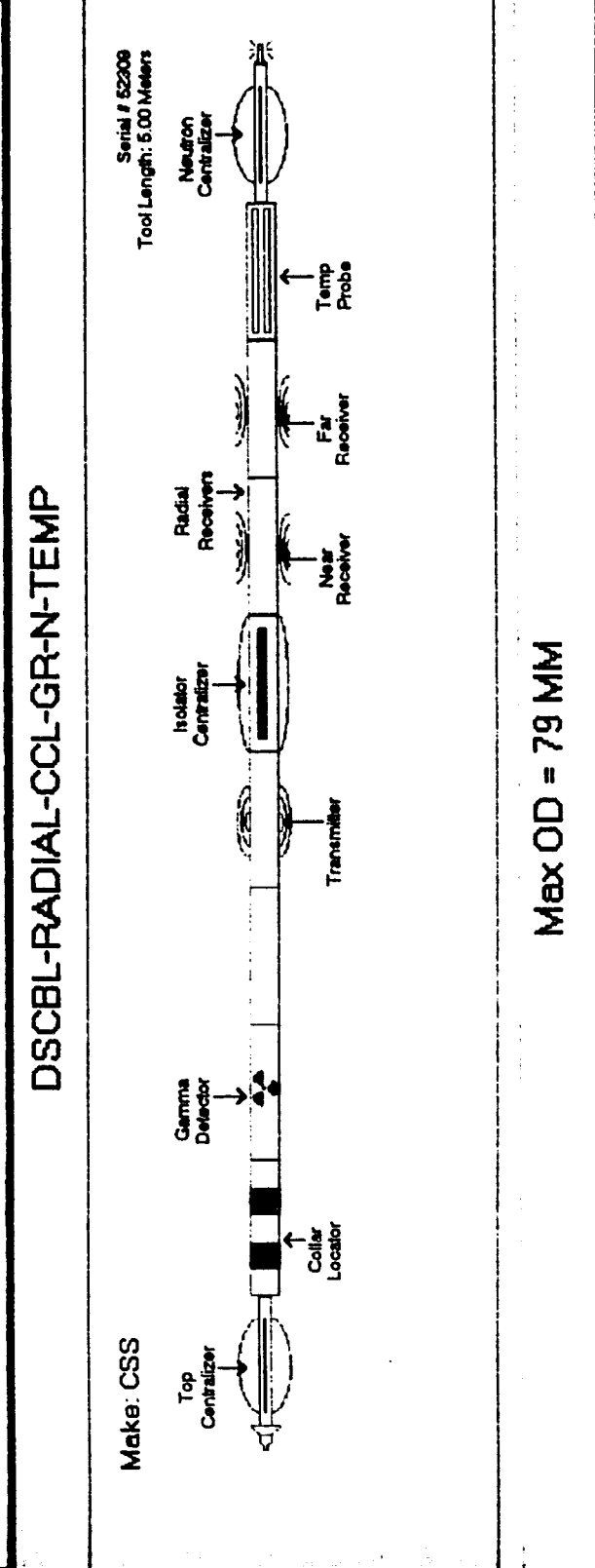
Permanent Datum Ground Level Elevation 346.26 K.B. 350.33
Log Measured From Kelly Bushing 4.1m Above Perm. Datum G.L. 346.26

Date 21-March-2003 Type Fluid Fresh H2O
Run Number One Fluid Level 10.0
Type Log GR/CCL/CBL/VOL Wellhead Pressure Null
Depth - Driller (OH) 735.8 Max. Temp. °C
Depth - Driller (CH) n/a Oper. Rig Time 2.0hrs
P.B.T.D. By Logger 706.4 Recorded By D. Adams
Bottom Log Interval 701.8 Witnessed By J. Graves
Logged Interval Apparent Cement Top Surface
Top Log Interval Surface Hoist Unit# / Loc. #154 F57
Zone(s) of Interest Chukoh Program CSS V2.3
Gun Type and Size Ticket # K0858
Gun Charges

CASING RECORD	SIZE	Kg/m	GRADE	TYPE JOINT	FROM	TO
Surface	219.1mm	35.7	J55		Surface	200.55
Intermediate	139.7mm	20.8	J55		Surface	736.6

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, damage or expense whatsoever, incurred or sustained by the customer resulting from any interpretation made by any of our employees.

Logged as per customer request.
Log correlated to Tucker Borehole Compensated Sonic Log, dated 7-March-2003.
Run a 119.1mm gauge ring to 797.5
Surface Casing: 219.1mm, 35.7kg/m, J-55, Cemented w/ 14.5 T Class G, 4% CaCl2, GOOD Returns.
Production Casing: 139.7mm, 20.8kg/m, J-55, Cemented w/ 20 T Class G, 1m3 Cement Returns.



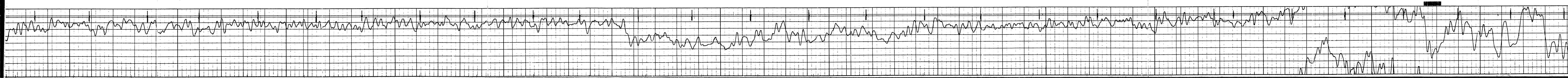
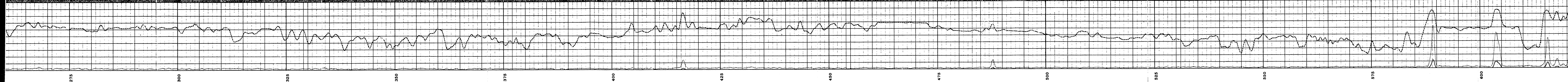
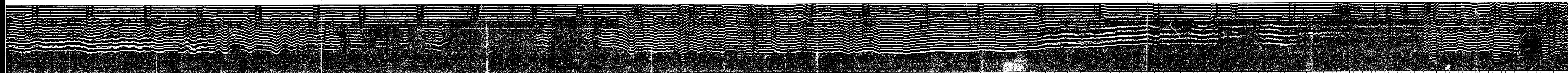
Max OD = 79 MM

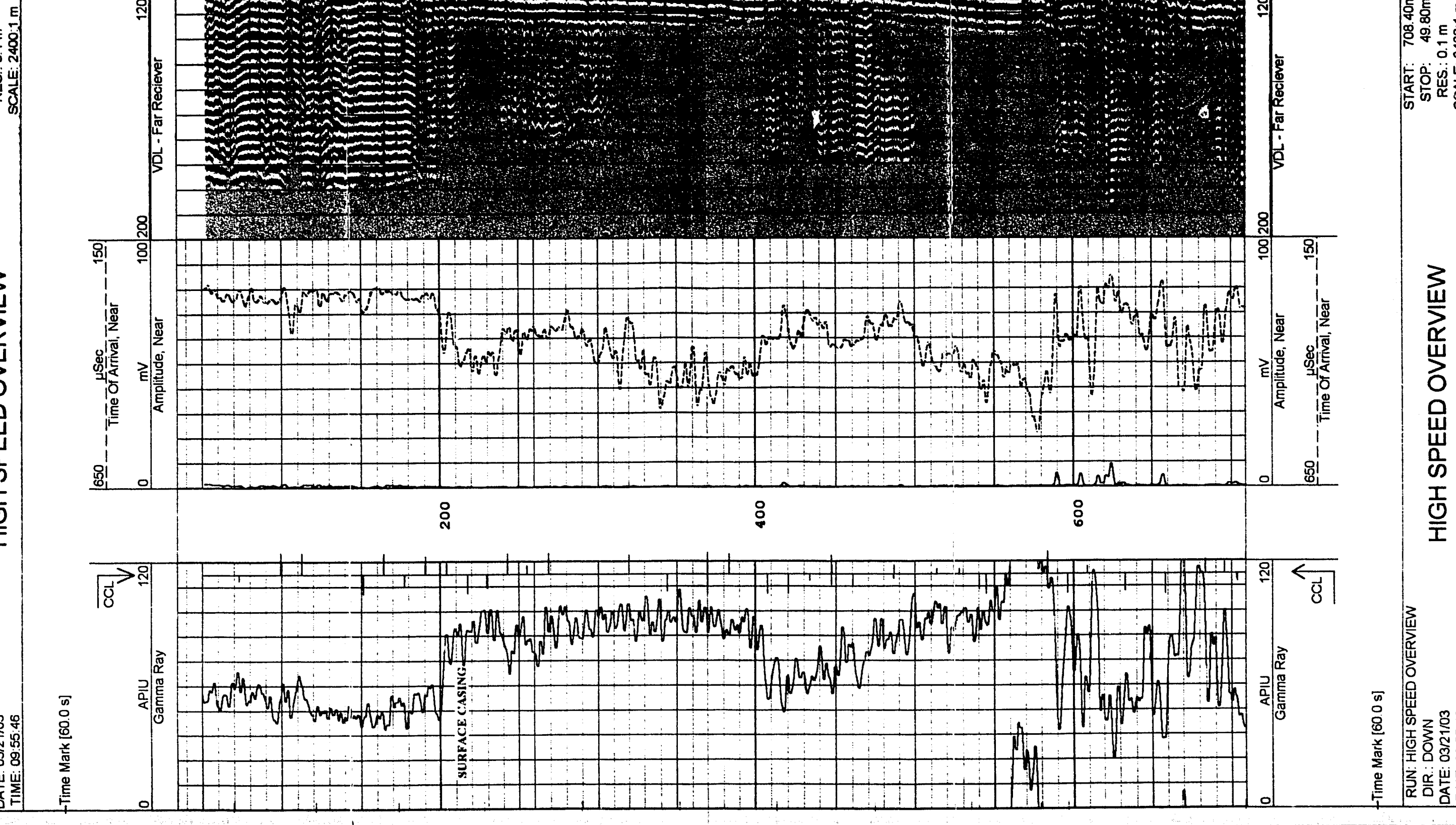
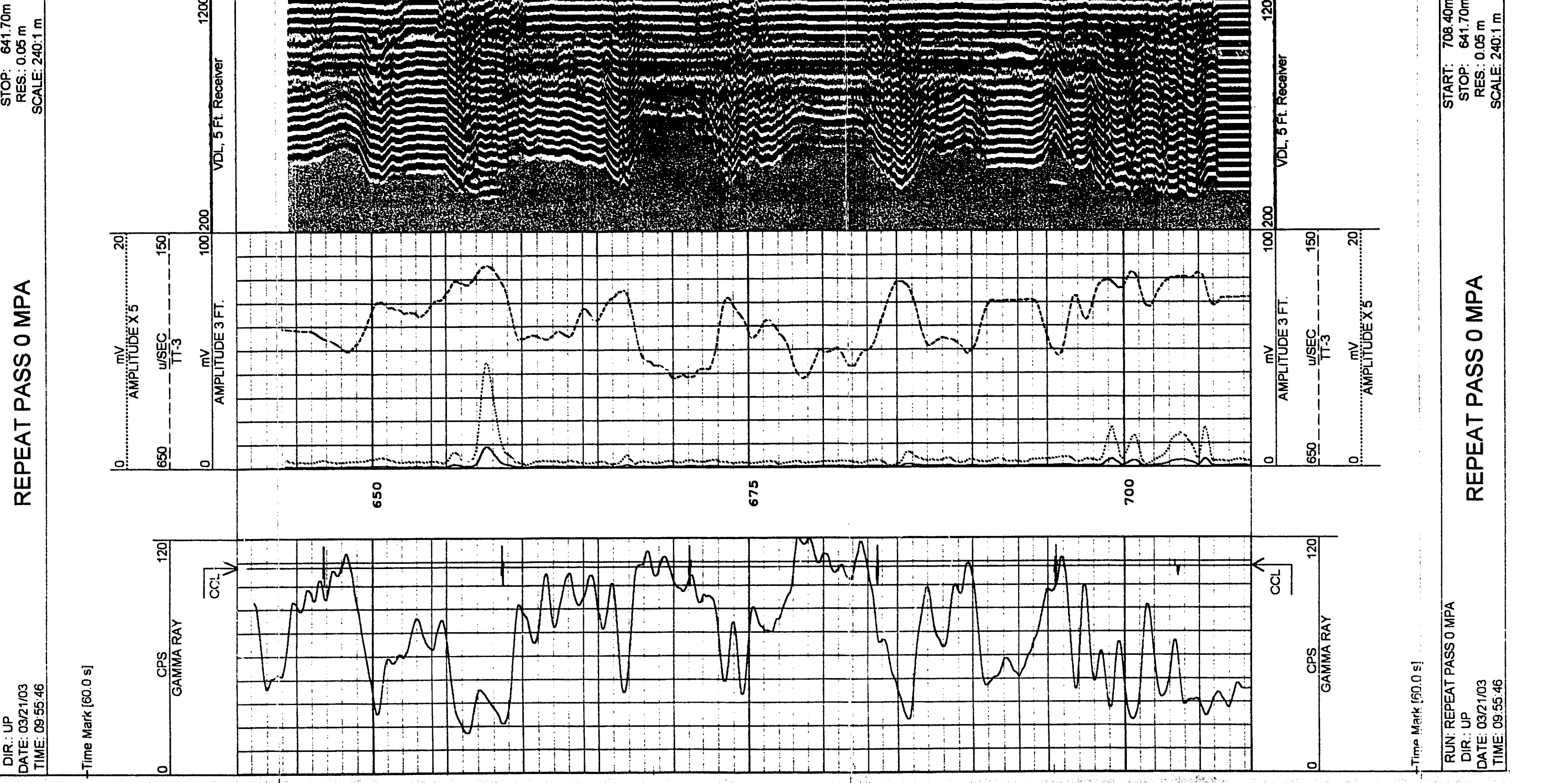
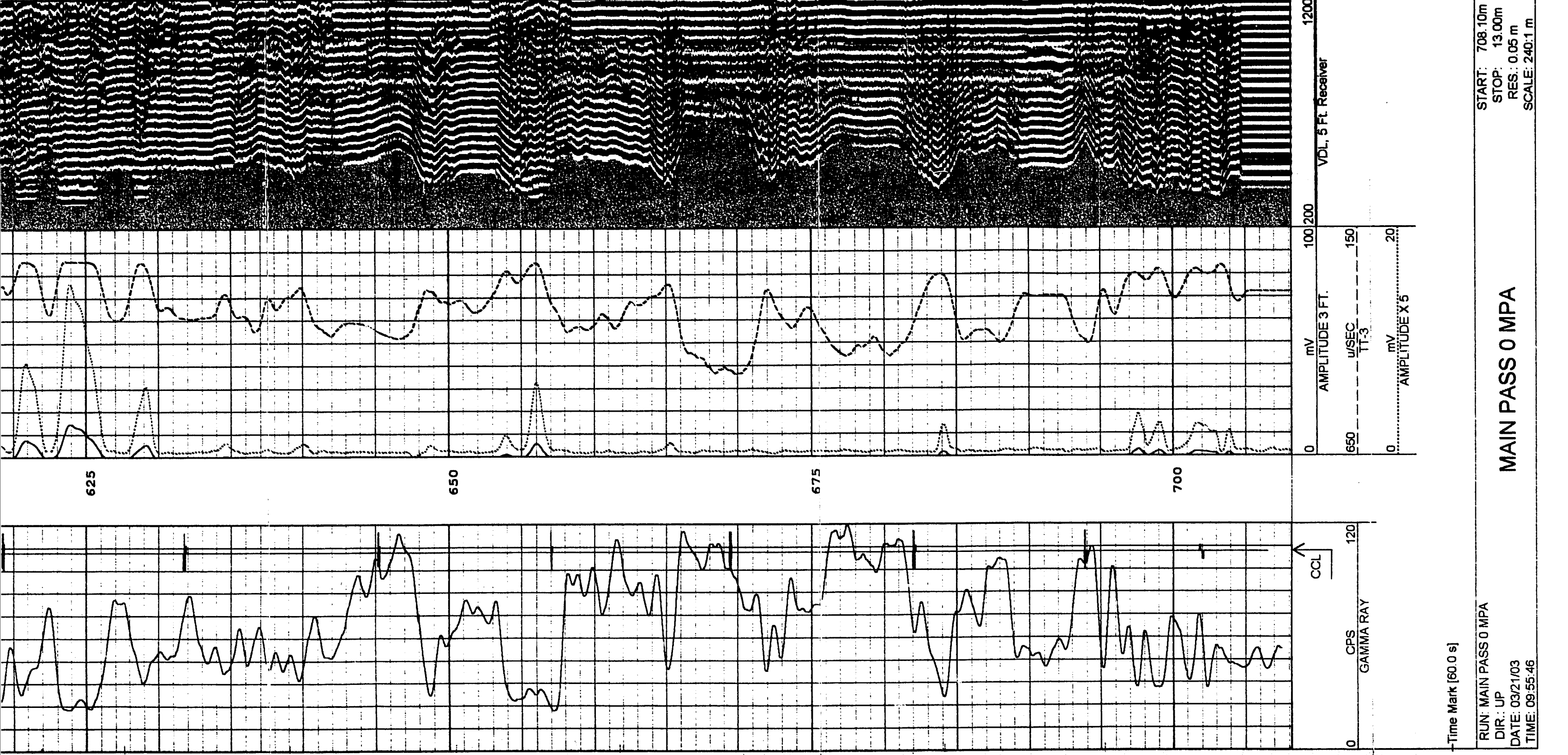
RUN: MAIN PASS 0 MPA
DIR: UP
DATE: 03/21/03
TIME: 09:55:46

START: 708.10m
STOP: 13.00m
RES: 0.05 m
SCALE: 240:1 m

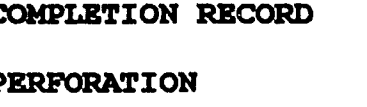
MAIN PASS 0 MPA







Company: Anadarko Canada Energy
Well: Anadarko SW Arrowhead M-35
Field: Arrowhead
Province: Northwest Territories



Permanent Datum Ground Level		Elevation 346.26	K.B. 350.33
Core Measured From Kelly Bushing		4.1m Above Perm. Datum	G.L. 346.26
Date	22-March-2003	Type Fluid	Fresh H2O
Run Number	One	Fluid Level	450
Type Log	COLLAR	Wellhead Pressure	0 KPA
Depth - Driller (OH)	735.8	Max. Temp. °C	
Depth - Driller (CH)	n/a	Oper. Rig Time	0.5 HRS
Depth - B.T.D. By Logger	706.4	Recorded By	D. Adams
Bottom Log Interval	610.0	Witnessed By	J. Graves
Logged Interval		Apparent Cement Top	Surface
Top Log Interval	525.0	Hoist Unit# / Loc.	0154 F53
One(s) of Interest	Chinkeh	Program	C58 V2.3
Run Type and Size	ERHSC 101.6 mm	Ticket #	K0859
Run Charges	32 GR DP		

[illegible]

LOGGED AS PER CUSTOMER'S REQUEST
LOG CORRELATED TO IPS' 8 GAMMA PAY CEMENT BOND LOG DATED 21-MARCH-2003

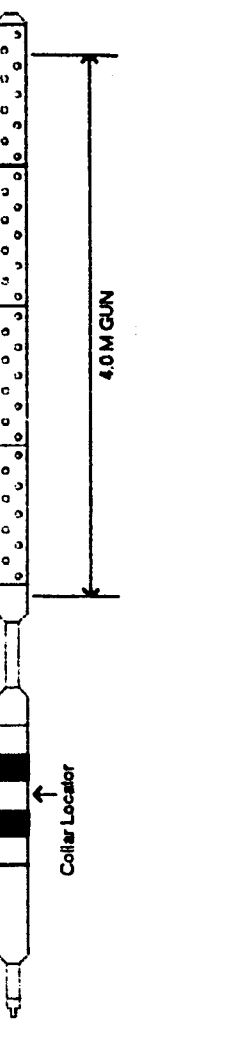
[illegible]

Bridge Plug Retainer

[illegible]

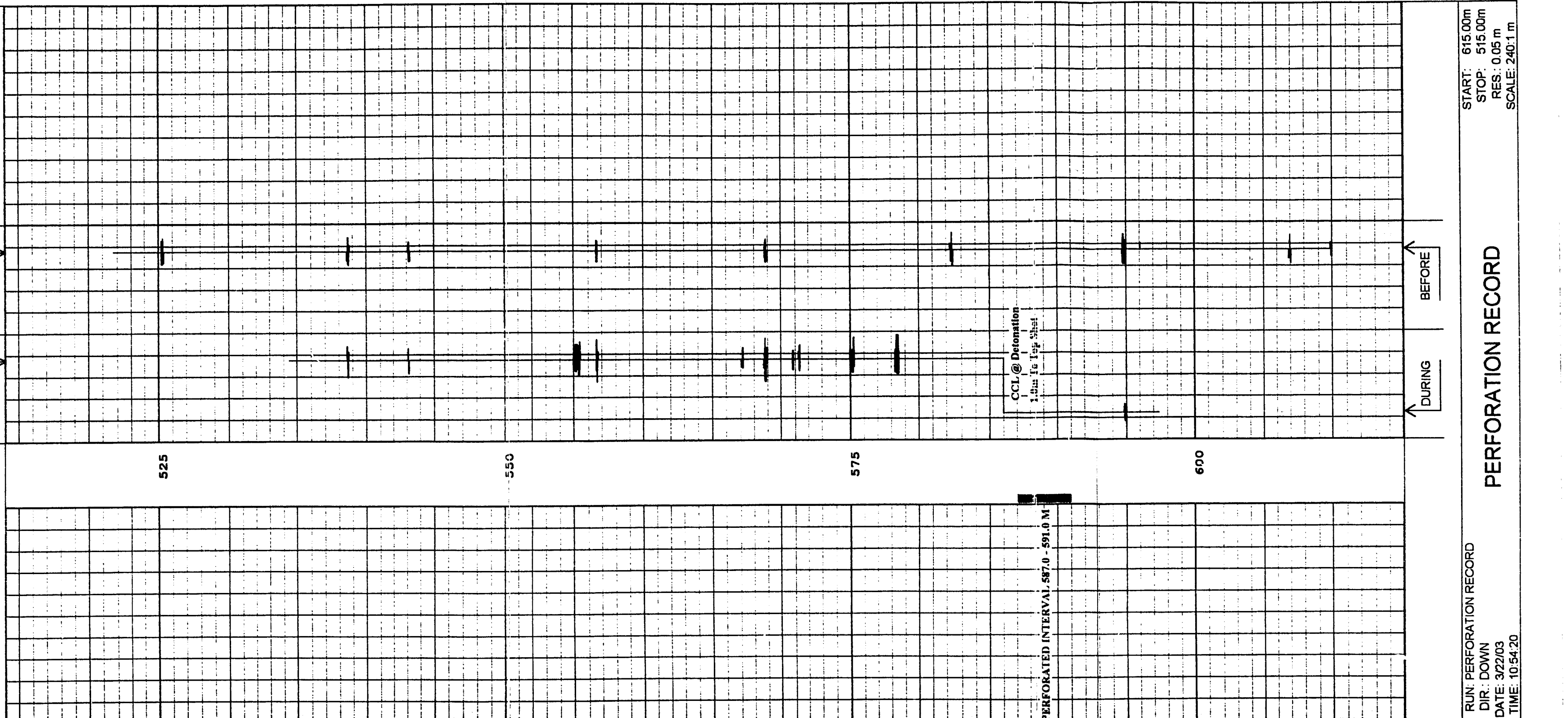
4.0 M PERFORATION GUN

4.0 m Loaded w/ 32 gr DP
@17 rpm, 60° Phase



TIME: 10:54:20

15



Company: Anadarko Canada

TOUR SHEETS

Anadarko SW Arrowhead M-35 WID1989
Tour Sheets

LICENCE NO. 1989 OPERATOR ANADARKO CANADA ENERGY SURFACE LOCATION LA 60:24:57.4N/LO 123:07:23.0W SIGNATURE OF OPERATOR'S REPRESENTATIVE BRIAN PREECE

WELL NAME & NO. ANADARKO, SW ARROWHEAD M-35 CONTRACTOR AKITA DRILLING LTD. UNIQUE ID 300M356030123000 SIGNATURE OF CONTRACTOR'S RIG MANAGER LEN SAWCHUK

DAILY CHECKS: 1) Daily Well Around Inspection, 2) Detailed Inspection - Weekly (Using Check List), 3) H2S Signs Present if Required, 4) Well Licence & Stock Diagram Posted, 5) Flare Line Status, 6) BOP Daily Performance, 7) Visually Inspect BOPs, Flare Lines & Degasser Lines, 8) Rig Site Health & Safety Meeting (announced/unannounced), 9) CAODC Rig Safety Inspection Checklist (announced/unannounced), 10) Mast Inspection before Raising or Lowering, 11) Crown Saver Checked, 12) Motor Kicks Checked

TEMPERATURE: 219.0, 139.7, 202.5, 124.1, 35.72, 20.80, 15, 57, 202.12, 4.50, 201.00, 736.80, 4.50, 736.00

MASS: 20.83, 41.64, 122.91, 61, 61, 52, 126, 126, 4.5, 16

GRADE: E, HWDP, DC

MINIMUM ID: 61, 61, 52

T. JNT O.D.: 126, 126, 152

TYPE THREAD: 4 FH, 4 FH, 4.5 XH

NO. OF JOINTS: 15, 20, 16

PUMP TYPE: F-650, F-650

PUMP MANUFACTURER: EMSCO, EMSCO

STROKE LENGTH: 203, 203

PASON DATAHUB
AKita 15
Job 2
CDN 3422-2-011204



NO.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILLING	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 MEETINGS	LAYDOWN DRILL STRING	TOTALS	NO TYPE 1 CRAGLE	TYPE 2	YES	NO	RENT	MORN	DAY	EVE
MORN					1.00							4.75										0.25	2.00	8.00	110	84					
DAY					1.75							1.25		2.75								0.25	2.00	8.00	110	84					
EVE					7.00																		1.00	8.00	110	84					
TOTAL					7.00							6.00		2.75								0.50	2.00	24.00	110	84					

DRILLING CREW/PAYROLL DATA

WELL NAME & NO. ANADARKO, SW ARROWHEAD M-35 YEAR 2003 MONTH 3 DAY 8

OPERATOR ANADARKO CANADA ENERGY CONTRACTOR AKITA DRILLING LTD.

RIG NO. 15 RIG SAFETY DAYS 813

PROVINCE N.W.T. CAMP ☒ YES ☐ NO

NO.	BIT	LENGTH	BIT RECORD	MORNING TOUR	MUD RECORD	METRES DRILLED	TIME LOG	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS	
1	BIT SUB	150	0.27	3	MUD TYPE	WATER BASED	0.25	2.00	0 200 2.00 22 LAY DOWN DRILL STRING
2	D.C.	150	0.77	200.0	DENSITY (KG/M3)		0.25	2.00	200 215 0.25 21 SAFETY MTG. W/ HILLS CASING SERVICE LTD
3	D.C.	150	28.22	WADC CODE	FUNNEL VISCOSITY		4.75	12	215 700 4.75 12 R/U & RUN CASING
4	JAR	185	46.20	MANUFACTURER SMITH	FLUID LOSS (cm3)		1.00	5	700 800 1.00 5 COND MUD & CIRC
5	D.C.	150	5.07	TYPE F12YGP	pH				
6	X.O.	150	36.26	SERIAL NO MK4350					
7	H.W.D.P.	130	55.60	JETS 11.1 11.1	MUD MATERIALS ADDED	SOLIDS CONTROL			
				11.1	PRODUCT AMOUNT UNIT	DESILTER			
				DEPTH OUT		DEVIATION SURVEYS			
				DEPTH IN		DEPTH (M) DEVIATION DIRECTION			
				TOTAL M DRILLED 86.00					
				TOTAL HRS RUN 13.75					
				CUTTING STRUCTURE					
				Ti To MDC LOC BRG GAGE ODC REASON PULLED TOTAL RUN M/H					
29	D.P.	STANDS	552.32						
	D.P.	SINGLES							
	KELLY DOWN		11.36						
	TOTAL		737.00						
	WT OF D.C.		20						
	WT OF STRING		29						

CREW	SOC INS. NO.	NAME	HRS	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 ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 15

NO.	BIT	LENGTH	BIT RECORD	DAY TOUR	MUD RECORD	METRES DRILLED	TIME LOG	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
	BIT	O.D.	BIT NO.	MUD TYPE	WATER BASED	0.25	2.00	800 945 1.75 5 CIRCULATE CSG
	SIZE		200.0	DENSITY (KG/M3)		0.25	2.00	945 1000 0.25 21 SAFETY MTG. PRIOR CMT CSG
	WADC CODE			FUNNEL VISCOSITY		1.25	12	1000 1115 1.25 12 CMT CSG
	MANUFACTURER			FLUID LOSS (cm3)		2.75	14	1115 1400 2.75 14 NIPPLE DOWN BOPS SET SLIPS CUT CSG BLOW DOWN CASG TACK WELD
	TYPE			pH			23	1400 1600 2.00 23 CLEAN MUD TANKS
	SERIAL NO							
	JETS			MUD MATERIALS ADDED	SOLIDS CONTROL			
	DEPTH OUT			PRODUCT AMOUNT UNIT	DESILTER			
	DEPTH IN				DEVIATION SURVEYS			
	TOTAL M DRILLED				DEPTH (M) DEVIATION DIRECTION			
	TOTAL HRS RUN							
	CUTTING STRUCTURE							
	Ti To MDC LOC BRG GAGE ODC REASON PULLED TOTAL RUN M/H							
	D.P.	STANDS						
	D.P.	SINGLES						
	KELLY DOWN							
	TOTAL							
	WT OF D.C.							
	WT OF STRING							

CREW	SOC INS. NO.	NAME	HRS	YES	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

RATE SCHEDULE ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 15

NO.	BIT	LENGTH	BIT RECORD	EVENING TOUR	MUD RECORD	METRES DRILLED	TIME LOG	DETAILS OF OPERATIONS IN SEQUENCE & REMARKS
	BIT	O.D.	BIT NO.	MUD TYPE	WATER BASED	1.00	7.00	1600 1700 1.00 23 CLEAN MUD TANKS
	SIZE			DENSITY (KG/M3)		7.00	1	1700 2400 7.00 1 PREPARE FOR RIG MOVE / RIG OUT
	WADC CODE			FUNNEL VISCOSITY				
	MANUFACTURER			FLUID LOSS (cm3)				
	TYPE			pH				
	SERIAL NO							
	JETS			MUD MATERIALS ADDED	SOLIDS CONTROL			
	DEPTH OUT			PRODUCT AMOUNT UNIT	DESILTER			
	DEPTH IN				DEVIATION SURVEYS			
	TOTAL M DRILLED				DEPTH (M) DEVIATION DIRECTION			
	TOTAL HRS RUN							
	CUTTING STRUCTURE							
	Ti To MDC LOC BRG GAGE ODC REASON PULLED TOTAL RUN M/H							
	D.P.	STANDS						
	D.P.	SINGLES						
	KELLY DOWN							
	TOTAL							
	WT OF D.C.							
	WT OF STRING							

CREW	SOC INS. NO.	NAME	HRS	YES	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 ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 15

LICENCE NO 1989 OPERATOR ANADARKO CANADA ENERGY SURFACE LOCATION LA 60:24:57.4N/LO 123:07:23:0W SIGNATURE OF OPERATOR'S REPRESENTATIVE BRIAN PREECE

WELL NAME & NO ANADARKO, SW ARROWHEAD M-35 CONTRACTOR AKITA DRILLING LTD. UNIQUE ID 300M356030123000 SIGNATURE OF CONTRACTOR'S RIG MANAGER LEN SAWCHUK

- DAILY CHECKS
- 1) Daily Well Record Inspection
 - 2) Detailed Inspection Weekly (Using Check List)
 - 3) HCS Signs Posted if Required
 - 4) Well Location & Block Diagram Posted
 - 5) Flare Lines Status
 - 6) BOP Cables Performed
 - 7) Visually Inspect BOP's Flare Lines & Depressure Lines
 - 8) Rig Site Health & Safety Meeting (once a month)
 - 9) CAHDC Rig Safety Inspection Checklist (once a month)
 - 10) Mast Inspection Safety Meeting or Lifting
 - 11) Crown Survey Checked
 - 12) Mast Rigs Checked

YEAR 2003 MONTH 3 DAY 6

RIG NO 15

DC / DP SIZE 219.0 202.5 35.72

MAKE IPSCO

GRADE J55

NO OF JOINTS 15

TOTAL LENGTH 202.12

NO TO CSG HEAD 201.00

SET AT (m)

TEMPERATURE 10500

DC / DP SIZE 102 20.83 E 61 126 4 FH 90

MASS 102 41.64 HWD 61 126 4 FH 20

GRADE 152 122.91 DC 52 152 4.5 XH 16

TYPE T.O.D. 126 4 FH 90

NO OF JOINTS 15

PUMP TYPE F-650 EMSCO

PUMP MANUFACTURER EMSCO

STROKE LENGTH 203

PASON DATAHUB
AKITA 15
Job 2



CDN 3422-2-011204

NO.	TIME	DRILL ACTUAL	PLANNING	CORING	CONDUIT & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILL LINE	DEV SURVEY	WIRELINE LOGS	RUN CSG & CEMENT	WAIT ON CEMENT	WIPPLE UP B.O.P.	TEST B.O.P.	DRILLSTEM TEST	PLUG BACK	SIXEZE CEMENT	FISHING	DIR WORK	SAFETY MEETING	TOTALS
MORN		6.50			0.75		0.25			0.50												8.00
DAY		1.75			0.50	5.50				0.25												8.00
EVE		7.75					0.25															8.00
TOTAL		16.00			1.25	5.50	0.50			0.75												24.00

DRILLING CREW PAYROLL DATA

WELL NAME & NO ANADARKO, SW ARROWHEAD M-35 YEAR 2003 MONTH 3 DAY 6

OPERATOR ANADARKO CANADA ENERGY CONTRACTOR AKITA DRILLING LTD.

RIG MANAGER LEN SAWCHUK

PROVINCE N.W.T. CAMP ☒ YES ☐ NO

15 RIG SAFETY DAYS 811

BIT RECORD MORNING TOUR MUD RECORD METRES DRILLED TIME LOG

BIT NO RR2 O.D. 0.27 SIZE 200.0

ADDC CODE GEO DIAMOND

MANUFACTURER CD93MA74YPX

TYPE 9407473JS7381

SERIAL NO 7.1 7.1

JETS 7.1 7.1

DEPTH OUT 201.00

DEPTH IN 442.00

TOTAL M DRILLED 19.75

TOTAL HRS RUN

CUTTING STRUCTURE

TI TO MDC LOC BRG GAGE ODC REASON PAILED TOTAL RUN M/H

HOLE CONDITION

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (M)

MUD TYPE X WATER BASED OIL BASED

TIME 300 430 600 500.00 643.00 D 115 5

DENSITY (KG/M3) 1090 1090 1090

FUNNEL VISCOSITY 50 48 46

FLUID LOSS (cm3) 6.5 6.5 7.0

pH 10.0 10.0 10.0

PVT 33.70 31.80 31.20

MUD MATERIALS ADDED

PRODUCT AMOUNT UNIT

GEL 10 SX

SOLIDS CONTROL

DESILTER

HOURS RUN INTAKE DENSITY (KG/M3) OVER FLOW DENSITY UNDER FLOW DENSITY

6710 152.0 152.0 110

REDUCED PUMP SPEED

2200 65

DEVIATION SURVEYS

CENTRIFUGE

DEPTH (M) DEVIATION DIRECTION

529.00 0.75

595.00 0.50

8.00 1090 1080 1800

DRILLER SIGNATURE EUGENE OROM

HRS RUN 8.00 BOILER PH 10.0 STACK TEMP 400 MAXIMUM EXPERIENCED HOOK LOAD 29 SAFETY TOPIC LOCKOUT POLICY MACP 2675

DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

7 RIG SERVICE FUNCTION PIPE RAMS 3 SEC C/O

2 DRILL 200.0 mm HOLE F / 500 m TO 620m

5 CIRC SAMPLE

2 DRILL 200.0mm HOLE 620 TO 643

10 DEV. SURVEY ACCUMULATED

NOTES FUNCTION CROWN SAVER : CHECKED BRAKES & LINKAGE DEADMAN ANCKORS

BLOW BOILER DOWN 3 TIMES = 99 LITERS

STRING WT = 28000 WT BLOW JARS = 13000 JAR HRS = 49.50

CREW	SOC INS. NO.	NAME	HRS	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 ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 13

BIT RECORD DAY TOUR MUD RECORD METRES DRILLED TIME LOG

BIT NO RR2 3 O.D. 0.27 SIZE 200.0 200.0

ADDC CODE GEO DIAMOND SMITH

MANUFACTURER CD93MA74YPK12YGP

TYPE 9407473JS738MK4350

SERIAL NO 7.1 7.1 11.1 11.1

JETS 7.1 7.1 11.1

DEPTH OUT 651.00

DEPTH IN 201.00 651.00

TOTAL M DRILLED 450.00 3.00

TOTAL HRS RUN 21.25 0.25

CUTTING STRUCTURE

TI TO MDC LOC BRG GAGE ODC REASON PAILED TOTAL RUN M/H

HOLE CONDITION

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (M)

MUD TYPE X WATER BASED OIL BASED

TIME 800 1200 1500 643.00 651.00 D 90 6

DENSITY (KG/M3) 1090 1090 1090

FUNNEL VISCOSITY 47

FLUID LOSS (cm3) 7.0

pH 10.0

PVT 33.10

MUD MATERIALS ADDED

PRODUCT AMOUNT UNIT

BARITE 12 SX

SOLIDS CONTROL

DESILTER

HOURS RUN INTAKE DENSITY (KG/M3) OVER FLOW DENSITY UNDER FLOW DENSITY

5100 152.0 152.0 110

REDUCED PUMP SPEED

1900 65

DEVIATION SURVEYS

CENTRIFUGE

DEPTH (M) DEVIATION DIRECTION

642.00 1.00

8.00 1090 1080 1730

DRILLER SIGNATURE LINUS BOIRE

HRS RUN 8.00 BOILER PH 10.0 STACK TEMP 430 MAXIMUM EXPERIENCED HOOK LOAD 70 SAFETY TOPIC ICEY CONDITIONS MACP 2670

DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

2 DRILL F/ 643M- 651 M

5 CIRCULATE UP SAMPLE

10 DEV. SURVEY

6 TRIP OUT FOR BIT TIGHT HOLE @ 458 M PICK UP KELLY AND BACK REAM

6 RUN IN HOLE REAM @ 408 M-418M @ 429 M-440 M @ 620M-630 M

WASH F/630M-651 M

2 DRILL 651M-654 M

TRIP VOLUME CALCULATED=3.47 M2 FLOW CHECKED @ 642 M

TRIP VOLUME MEASURED=3.65 M2 @ 30PM @ 195M

FUNCTION BLIND RAMS WHILE OOH

CHECK LEL LEVELS IN ALL CONFINED SPACES OK G.W.

RECALIBRATE LEL MONITOR

NOTES FUNCTION CROWN SAVER

WT BELOW JARS= 13000 BHA WT= 20000 JARS HRS=51.25

BOILER BLOW DOWN 3 X5= 90 L

CREW	SOC INS. NO.	NAME	HRS	YES	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 ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 13

BIT RECORD EVENING TOUR MUD RECORD METRES DRILLED TIME LOG

BIT NO 3 O.D. 0.27 SIZE 200.0

ADDC CODE SMITH

MANUFACTURER F12YGP

TYPE MK4350

SERIAL NO 11.1 11.1

JETS 11.1

DEPTH OUT 651.00

DEPTH IN 651.00

TOTAL M DRILLED 56.00

TOTAL HRS RUN 8.00

CUTTING STRUCTURE

TI TO MDC LOC BRG GAGE ODC REASON PAILED TOTAL RUN M/H

HOLE CONDITION

HOLE DRAG

TORQUE AT BOTTOM

FILL ON BOTTOM (M)

MUD TYPE X WATER BASED OIL BASED

TIME 1800 2300 2330 654.00 707.00 D 101 10

DENSITY (KG/M3) 1090 1090 1090

FUNNEL VISCOSITY 46 49 51

FLUID LOSS (cm3) 7.5 7.5 7.5

pH 10.0 10.0 9.5

PVT 32.60 33.00

MUD MATERIALS ADDED

PRODUCT AMOUNT UNIT

GEL 13 SX

BARAZAN D 1 SX

CARBONOX 1 SX

SOLIDS CONTROL

DESILTER

HOURS RUN INTAKE DENSITY (KG/M3) OVER FLOW DENSITY UNDER FLOW DENSITY

5680 152.0 152.0 110

REDUCED PUMP SPEED

1900 65

DEVIATION SURVEYS

CENTRIFUGE

DEPTH (M) DEVIATION DIRECTION

8.00 1090 1080 1740

DRILLER SIGNATURE EUGENE OROM

HRS RUN 8.00 BOILER PH 10.0 STACK TEMP 400 MAXIMUM EXPERIENCED HOOK LOAD 2900 SAFETY TOPIC HOUSE KEEPING MACP 2675

DETAILS OF OPERATIONS IN SEQUENCE & REMARKS

2 DRILL F/654 M-661 M

7 RIG SERVICE FUNCTION ANNULAR C/O 9 SECS

2 DRILL F/661 M TO 707 m

CHECK FIRE EXTINGUISHERS, S.C.B.A.'S 1/2 FACE RESPIRATORS, HIGH ANGLE RESCUE KIT, DERRICK BELTS, LADD SAF(400BBL), LANYARDS, SELF RETRACTABLE LIFELINES, STATIC LINES, LOCKOUT BOARD AND LOCKS. EVERYTHING OK! G.W.

NOTES FUNCTION CROWN SAVER CHECKED BRAKES & LINKAGE : DEADMAN ANCKORS

BLOW BOILER DOWN 3 TIMES = 95 LITERS

STRING WT / 29000 WT BLOW JARS = 13000 JARS HRS = 59

CREW	SOC INS. NO.	NAME	HRS	YES	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 ☒ REGULAR ☐ REPAIR ☐ INVERT

CREW SAFETY DAYS 13

PASON DATAHUB
Akita 15
Job 2

CDN 3422-2 011204



DRILLING CREW PAYROLL DATA				
WELL NAME & NO.	YEAR	MONTH	DAY	
ANADARKO, SW ARROWHEAD M-35	2003	3	5	
OPERATOR	CONTRACTOR			
ANADARKO CANADA ENERGY	AKITA DRILLING LTD.			
RIG MANAGER	RIG NO.			
LEN SAWCHUK	15			
PROVINCE	THIS SAFETY DAY			
N.W.T.	☐ CAMP ☒ YES ☐ NO	810		

[illegible]

DAY TOUR		FROM	TO	1600	
CREW	SOC INS. NO.	NAME		HRS	YES
DRILLER		LINUS BOIRE		12 00	
DERRICK HAND		ERNIE LAFLEUR		12 00	
MOTOR HAND		TONY OGILVIE		12 00	
FLOOR HAND		BLAIR BAYLIS		12 00	
FLOOR HAND		BASSIM KADRI		12 00	
WELL SITE COORDINATOR		GARY WILLIAMS		12 00	
RATE SCHEDULE	X	REGULAR		REPAIR	INVERT
		CREW SAFETY DAYS			

12

[illegible]

LICENCE NO 1989 OPERATOR ANADARKO CANADA ENERGY SURFACE LOCATION LA 60:24:57.4N/LO 123:07:23.0W SIGNATURE OF OPERATOR'S REPRESENTATIVE BRIAN PREECE

WELL NAME & NO ANADARKO, SW ARROWHEAD M-35 CONTRACTOR AKITA DRILLING LTD. UNKPIE ID 300M356030123000 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 & Stock Diagram Posted (5) Flare Lines Staked (6) BOP Cables Performed (7) Visually Inspect BOPs, Flare Lines & Degasser Lines (8) Rig Site Health & Safety Meeting (on arrival/departure) (9) CAODC Rig Safety Inspection Checklist (on arrival/departure) (10) Mast Inspection before Raising or Lowering (11) Crown Saver Checked (12) Motor Kills Checked

YEAR 2003 MONTH 3 DAY 4 RIG NO 15

TEMPERATURE -18 CURRENT CONDITIONS CLEAR WIND DIRECTION CALM ROAD CONDITION SNOW

DC/DP SIZE 102 MASS 20.83 GRADE E MINIMUM ID 61 T JNT O.D. 126 4 FH 90 TYPE NO OF JOINTS 20 PUMP TYPE F-650 EMSCO PUMP MANUFACTURER EMSCO STROKE LENGTH 203

OD (mm) 219.0 MIN ID (mm) 202.5 AGMA 3572 MAKE IPSCO GRADE J TOTAL LENGTH 202.12 KB TO CSG HEAD 201.00 SET AT (m) 201.00

PASON DATAHUB

ANTA 15
Job 2

CDN 3422-2-011204



WELL LOG SHEET																							MORN		DAY		EVE								
NO.	REUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND MUD & CIRC	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRILLING	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 MEETINGS	CASING BOWL	TOTALS	TYPE 1 CRAGLE		TYPE 2		SCREENS CHANGED		YES		NO			
MORN		0.75			2.00	2.00	0.25					2.75										0.25		8.00	110	84									
DAY												0.25	4.00										3.75	8.00	110	84									
EVE														2.50	3.50								2.00	8.00	110	84									
TOTAL		0.75			2.00	2.00	0.25					3.00	4.00	2.50	3.50							0.25	5.75	24.00	110	84									

WELL NAME & NO ANADARKO, SW ARROWHEAD M-35 YEAR 2003 MONTH 3 DAY 4 OPERATOR ANADARKO CANADA ENERGY CONTRACTOR AKITA DRILLING LTD. RIG MANAGER LEN SAWCHUK PROVINCE N.W.T. CAMP X YES NO 15 RIG SAFETY DAYS 809

NO.	BIT	LENGTH	BIT RECORD	MORNING TOUR	MUD RECORD	METRES DRILLED	TIME LOG
1	BIT SUB	159	0.77	1	MUD TYPE	X WATER BASED OIL BASED	FROM TO D-R-C RPM WOB
1	D.C.	159	74.42	SIZE	311.0	TIME	130
1	JAR	159	5.07	ADC CODE		DENSITY (KG/M3)	1120
1	D.C.	159	36.26	MANUFACTURER	SMITH	FUNNEL VISCOSITY	100
1	X.O.	157	0.91	TYPE	GTCS1	FLUID LOSS (cm3)	
1	H.W.D.P.	130	55.60	SERIAL NO	B22179	pH	9.5
				JETS	19 19	MUD MATERIALS ADDED	
				DEPTH OUT	19	PRODUCT AMOUNT UNIT	
				DEPTH IN	0.00	GEL	17 SX
				TOTAL M DRILLED	201.00	BARAZAND	1 SX
				TOTAL HRS RUN	13.25	DESCO	2 SX
				CUTTING STRUCTURE		SOLIDS CONTROL	
				TI TO MDC LOC BRG GAGE ODC REASON PULLED		DESILTER	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						REDUCED PUMP SPEED	
						DEVIATION SURVEYS	
						CENTRIFUGE	
						DEPTH (M) DEVIATION DIRECTION	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						DRILLER SIGNATURE	
						EUGENE OROM	
						HRS RUN BOILER PH STACK TEMP MAXIMUM EXPERIENCED HOOK LOAD SAFETY TOPIC MACP	
						8.00 10.0 400 21 RUNNING CASING	

CREW	SOC IN. NO.	NAME	HRS	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 11

NO.	BIT	LENGTH	BIT RECORD	DAY TOUR	MUD RECORD	METRES DRILLED	TIME LOG
1	BIT SUB	159	0.77	1	MUD TYPE	X WATER BASED OIL BASED	FROM TO D-R-C RPM WOB
1	D.C.	159	74.42	SIZE	311.0	TIME	130
1	JAR	159	5.07	ADC CODE		DENSITY (KG/M3)	1120
1	D.C.	159	36.26	MANUFACTURER	SMITH	FUNNEL VISCOSITY	100
1	X.O.	157	0.91	TYPE	GTCS1	FLUID LOSS (cm3)	
1	H.W.D.P.	130	55.60	SERIAL NO	B22179	pH	9.5
				JETS	19 19	MUD MATERIALS ADDED	
				DEPTH OUT	19	PRODUCT AMOUNT UNIT	
				DEPTH IN	0.00	GEL	17 SX
				TOTAL M DRILLED	201.00	BARAZAND	1 SX
				TOTAL HRS RUN	13.25	DESCO	2 SX
				CUTTING STRUCTURE		SOLIDS CONTROL	
				TI TO MDC LOC BRG GAGE ODC REASON PULLED		DESILTER	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						REDUCED PUMP SPEED	
						DEVIATION SURVEYS	
						CENTRIFUGE	
						DEPTH (M) DEVIATION DIRECTION	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						DRILLER SIGNATURE	
						LINUS BOIRE	
						HRS RUN BOILER PH STACK TEMP MAXIMUM EXPERIENCED HOOK LOAD SAFETY TOPIC MACP	
						8.00 10.0 430 21 NIPPLE UP BOPS	

CREW	SOC IN. NO.	NAME	HRS	YES	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	BH	
FLOOR HAND		BASSIM KADRI	12.00	BK	

RATE SCHEDULE X REGULAR REPAIR INVERT

CREW SAFETY DAYS 11

NO.	BIT	LENGTH	BIT RECORD	EVENING TOUR	MUD RECORD	METRES DRILLED	TIME LOG
1	BIT SUB	159	0.77	RR2	MUD TYPE	X WATER BASED OIL BASED	FROM TO D-R-C RPM WOB
1	D.C.	159	74.42	SIZE	311.0	TIME	130
1	JAR	159	5.07	ADC CODE		DENSITY (KG/M3)	1120
1	D.C.	159	36.26	MANUFACTURER	SMITH	FUNNEL VISCOSITY	100
1	X.O.	157	0.91	TYPE	GTCS1	FLUID LOSS (cm3)	
1	H.W.D.P.	130	55.60	SERIAL NO	B22179	pH	9.5
				JETS	19 19	MUD MATERIALS ADDED	
				DEPTH OUT	19	PRODUCT AMOUNT UNIT	
				DEPTH IN	0.00	GEL	17 SX
				TOTAL M DRILLED	201.00	BARAZAND	1 SX
				TOTAL HRS RUN	13.25	DESCO	2 SX
				CUTTING STRUCTURE		SOLIDS CONTROL	
				TI TO MDC LOC BRG GAGE ODC REASON PULLED		DESILTER	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						REDUCED PUMP SPEED	
						DEVIATION SURVEYS	
						CENTRIFUGE	
						DEPTH (M) DEVIATION DIRECTION	
						HOURS RUN INTAKE OVER UNDER FLOW DENSITY	
						DRILLER SIGNATURE	
						EUGENE OROM	
						HRS RUN BOILER PH STACK TEMP MAXIMUM EXPERIENCED HOOK LOAD SAFETY TOPIC MACP	
						8.00 10.0 400 21 REVIEWED STOP CARDES	

CREW	SOC IN. NO.	NAME	HRS	YES	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 11



DRILLING CREW PAYROLL DATA			
WELL NAME & NO	YEAR	MONTH	DAY
ANADARKO, SW ARROWHEAD M-35	2003	3	3
OPERATOR	CONTRACTOR		
ANADARKO CANADA ENERGY	AKITA DRILLING LTD.		
RIG MANAGER			RHS NO
LEN SAWCHUK			15
PROVINCE			RHS SAFETY DAYS
N.W.T.	CAMP	X YES ☒ NO ☐	808

[illegible]

DAY TOUR		800	1600	RETURN
CREW	SOC INS. NO.	NAME	HRS	YES
DRILLER		EUGENE OROM	8.00	
DERRICK HAND		DALLAS BAITON	8.00	
MOTOR HAND		CHRIS NICOLSON	8.00	
FLOOR HAND		RON DUSOMME	8.00	
FLOOR HAND		BERNIE HALLOCK	8.00	
WELL SITE COORDINATOR		GARY WILLIAMS	12.00	
RATE SCHEDULE	X	REGULAR		REPAIR
				INVERT
		CREW SAFETY DAYS		
		10		

[illegible]

