APPROVAL TO DRILL A WELL

National Energy Board / Office national de l'énergie

Exploratory ☒ Delineation ☐
Development ☐ Service ☐

(REVISED)

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: PARAMOUNT ET AL MCKAY LAKES K-36
Operator: PARAMOUNT RESOURCES LTD. Drilling Program No.: 9211-P33-19-2
Contractor: PRECISION DRILLING #249 Interest Identifier: EL 382
Drilling Rig or Unit: 1 Estimated Well Cost:
Location-Unit: K Section: 36 Grid Area: 60°20', 123°15'
Coordinates: Lat.: 60°15'42.560" Long.: 123°21'58.579"
Area: LIARD NWT Field / Pool: N/A
Elevation-KB/~~RR~~: 294.3 (ASL) GL/~~RR~~: 290.3
Approx. Spud Date: DECEMBER 1, 2002 Est. Days on Location: 14
Anticipated Total Depth: 605 Target Horizons: MATTSON, CHINKEH

EVALUATION PROGRAM

Ten-metre sample intervals
Five-metre sample intervals: Surface to total depth
Canned sample intervals: Surface to total depth
Conventional cores at: None
Logs and Tests: 2-DST's, DLL-SFL, Sonic-GR-Cal, CNL-Den -GR-Cal

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m KB)	Cementing
219.1	35.7	J55	200	4.09"G"
139.7	20.83	J55	605	9.72"G"

B.O.P. Equipment: 228 mm Annular and 1-piperam and 1-blindram x 21 mpa

Other Information: The well will be completed with a service rig. Application and program will follow after drilling rig release.

Signed: *Wayne R. Tomm* Title: Sr. Drilling & Completion Engineer
Responsible Officer

Name: Wayne Tomm Company: Paramount Resources Ltd.
Date: November 12, 2002 Phone: (403) 290-3600

APPROVAL

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

Date: Feb 21/03 Signed: *C Kuf*
File: 9211-P33-19-2 *Chief Conservation Officer*
WID: 1966
UWI: 300K366020123150

444 Seventh Avenue SW
Calgary, Alberta T2P 0X8

444 Septième Avenue S.-O.
Calgary (Alberta) T2P 0X8

Canada

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http://www.neb.gc.ca

WELL TERMINATION RECORD

CANADA

NATIONAL ENERGY BOARD
Exploratio...

WELL TERMINATION RECORD

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

WELL DATA

Well Name: PARAMOUNT ET AL MCKAY LAKES K-36 Area: LIARD, NWT

Grid Area: 60°20', 123°15' Field/Pool: N/A

Permit or Lease No.: 1966 Final Coordinates: Lat.: 60°15'42.56" Long: 123°21'58.579"

Drilling Unit: K-36 Elevations RT/KB: 294.73 BF/GL: 289.88

Spud Date: MARCH 8, 2003 Rig Released: March 21, 2003 Total Depth: 800m

CASING AND CEMENTING

O.D.:	Weight:	Grade:	Depth Set:	Cement and Additives:
219.1mm	35.7	K55	201	15 Tonne 0:1:0 G + 3% CaCl2

PLUGGING PROGRAM

Approval of the following program was obtained by (person) WAYNE TOMM from (person) CHRIS KNOECHEL by means of TELEPHONE on MARCH 17, 2003 19 .

Type of Plug:	Interval:	Felt:	Cement and Additives:
Plug #1	795-542	March 20, 2003	10.5 Tonne 0:1:0 "G"
		at 590m	
Plug #2	227-Surface	March 20, 2003	11 Tonne 0:1:0 "G"
		at 27m	

Lost Circulation/Overpressure Zones: None

Equipment left on Seafloor (Describe): N/A

Provision for Re-entry (Describe and attach sketch): none

Cores: Type: none Intervals:

Other Downhole Completion/Suspension Equipment: none

CERTIFICATION

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

Signed: Wayne R. Tomm P. Eng. Title: SR. DRILLING & COMPLETIONS ENGINEER

Name: WAYNE R. TOMM Date: MARCH 21, 2003

Acknowledged by: J. M. Baker
Engineering Branch

Date: Mar. 27/03

File: 9211-P33-19-2

WID 1966 UWI 300K366020123150

Well Status
Suspended ☐
Completed ☐
Abandoned ☒

x

Canada

FINAL WELL REPORT

FINAL WELL REPORT (APR 17/03)
PARAMOUNT ET AL MCKAY LAKES K-36
300/K-36 600-200-123-15

N.E.B. COPY

FINAL WELL REPORT

Paramount Resources Ltd.

Paramount et al McKay Lakes K-36

W.I.D.: 1966
Grid: 60^0 20', 123^0 15'
UNIQUE I.D.: 300/K-36 600-200-123-15

DATE: 17 April 2003

COMPANY REPRESENTATIVE: Wayne Tomm

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A. INTRODUCTION

Paramount Resources Ltd. drilled a 800 metre exploratory well spudded on March 08, 2003 and finishing on March 17, 2003 to evaluate gas potential in the Mattson formation at a depth of 717 mKB.

The drilling contractor was Precision Drilling based out of Calgary, Alberta. The drilling rig used was a mechanical land rig rated for 1800 m. The rig had a 65 m^3 mud system and was equipped with two boilers.

The well was drilled on Exploration License No 382 in which Paramount Resources Ltd. has a 25% working interest. Operating License No. WID 1966 was issued to Paramount Resources Ltd. on February 21, 2003.

The well which was located approximately 14 km north east of Ft. Liard, NWT.
The exact co-ordinates of the well are as follows:

Latitude: 60^0 15' 42.560".....
Longitude: 123^0 21' 58.579".....

The rig was moved onto the location March 07, 2003 and the well spudded on March 08, 2003 @ 14:00 hrs to drill the 311 mm surface hole to a depth of 201m. The conductor hole was drilled to 19m with a rat hole rig. The 339.7 mm X 81.1 kg/m X K-55 LT&C conductor pipe was set with the shoe depth being at 19 m. The conductor pipe was cemented with 110 Sx of construction cement. The diverter was nippled up and functioned tested with the HCR.

The conductor shoe was then drilled out and the 311 mm surface hole was drilled ahead to 200 m. No lost circulation was encountered.

When running the 219.7 mm X 35.6 kg/m X K-55 ST&C casing the third joint had to be pumped down, the casing was run with no problems and cemented with 15 tonnes of 0:1:0 "G" + 3% $CaCl_2$. There was good mud returns reported throughout the cement job with 2 m^3 cement returns. The plug was bumped with 3,000 kPa and the pressure held. The plug was down at 16:00 hours on March 10, 2003.The surface casing was set at 201.6 m.

The BOP's were installed and pressure tested. The annular preventor was pressure tested to 1,500 kPa low and 10,500 kPa high. The pipe rams, kelly cock, stabbing valve and downhole BOP valve were tested to 1,500 kPa low and 10,500 kPa high. The accumulator precharge bottles were checked and the accumulator function tested prior to drilling out.

The float collar and shoe were drilled out on March 11, 2003. A formation leak off test was done and the gradient was taken to 34.68 kPa/m without breaking down the formation. The 200 mm main hole was drilled ahead to 229 m with hole deviation being a problem. A mu7d motor and MWD were picled up and then drilled ahead. The hole was drilled to a total depth of

800 m in the Mattson formation.

After total depth had been reached the open hole was logged by Schlumberger. Log run # 1 was a STI-MEL-SPED-CNS-GR from total depth to the surface casing. At this point, it was found that the bottom two joints of surface casing had parted and fell down hole with the top of one at 254m and the other at ~~254~~227m. The parted loints did not cause any problems while drilling or logging.

After the logs were evaluated it was decided to run three separate drill stem tests.

DST#1: 714 – 729 mKB, Mattson formation, NGTS, very week blow, reset for DST#2
DST#2: 696 – 711 mKB, Mattson formation, no blow, recovered 161m muddy water
DST#3: 684 – 711 mKB, Mattson formation, very week blow, recovered 85m drilling mud.

After the DST's were run and logs evaluated it was decided to abandon the well and cement plugs were run. Plug # 1 was run from 795 m to 542 m using 10.5tonnes of 0:1:0 Class "G" cement + .5 % CD-31+ .5% A-11. After the plug was run and pulled to 322 mKB. Drill pipe was run in and tagged the first plug at 590 m. The drill pipe was pulled up to 227 m to run plug # 2. Plug # 2 was run from 227 m to surface using 11tonnes 0:1:0 Class "G" cement + .5 % CD-31+ 1% A-11. The second plug was tagged at 26.8 m after waiting on cement for six hours. The rig was then rigged out and released at 08:00 hours on March 21, 2003.

Casing was cut off 1m below surface and steel plate welded over both conductor and surface casing. A surface marker was installed and site cleaned up.

OVERSIZED

DOCUMENT

FILMED

ON

35mm

B. GENERAL DATA

1. Well Name: Paramount et al McKay Lakes K-36.....

Authority to Drill a Well No:.1966.....

Exploration Agreement Number: EL 382.....

Location Unit: K.....

Section: 36.....

Grid Area: 60^0 20', 123^0 15'.....

Classification: Exploration.....

2. Well Location: .....
Coordinates: Latitude: 60^0 15' 42.560".....
Longitude: 123^0 21' 58.579".....

3. Unique Well Identifier: 300K366020123150.....

4. Operator: Paramount Resources Ltd. .....

5. Contractor: Precision Drilling Ltd.....
.....

6. Drilling Unit: Rig 117.....
.....

7. Support Craft (Helicopter): N/A.....

8. Drilling Unit Performance: N/A.....

9. Difficulties and Delays: Deviation control.....

10. Total Well Cost: $1,020,911.00.....

11. Horizontal Deviated Wells Require Bottom Hole Co-ordinates:
Latitude: N/A.....
Longitude:.....

C. SUMMARY OF DRILLING OPERATIONS

1. Elevations:
   - Ground: 289.88m .....
   - KB: 294.73m .....
   - KB To Casing Flange: N/A.....

2. Total Depth:
   - FTD: 800 mKB
   - PBTD: N/A
   - TVD: N/A

3. Date and Hour Spudded: March 08, 2003 @ 14:00 hrs.....

4. Date Drilling Completed: March17, 2003 .....

5. Date of Rig Release: March 21, 2003 .....

6. Well status: Dry and Abandoned

7. Hole Sizes and Depths:

Conductor Hole:	444. mm to 19 mKB
Surface Hole:	311 mm to 250 mKB
Main Hole:	200 mm to 800 mKB

8. Casing and Cementing Record:

Conductor Hole:

Casing Size:	339.7 mm
Casing Weight:	81.1 kg/m
Casing Grade:	K-55
Casing Make:	Ipsco
Number of Joints:	2
Thread:	BT&C
Depth Set:	19 m (KB)
Cut Height:	At Surface KB
Cut off Depth:	1.0m below ground level
Date Set:	March 06, 2003
Cement Volume:	110 Sx
Cement Type:	Construction

Surface Hole:

Casing Size:	219.7 mm

Casing Weight:	35.7 kg/m
Casing Grade:	K-55
Casing Make:	Ipsco
Number of Joints:	17
Thread:	ST&C
Depth Set:	200 m (KB)
Cut Height:	At Surface (KB)
Date Set:	March 10, 2003
Cement Volume:	15 Tonnes
Float Shoe Depth:	200 m
Float Collar Depth:	187 m
Cut Off Depth:	1.0 m below ground
Cement Type:	0:1:0 "G" Cement
Additives:	3.0% $CaCl_2$
Cement Top:	Surface (mKB)
Casing Bowl Size:	228.6 mm X 219.7 mm X 21 mpa
Casing Bowl Make:	ABB Vetco

9. Drilling Fluid:

Conductor Hole:		None	
Surface Hole:		Gel - Chemical	
Properties:	Viscosity:	90 sec/L	
		Weight:	1200kg/m^3
		PH:	10.5
Main Hole:		Gel - Chemical	
Properties:	Viscosity:	80 sec/L	
		Weight:	1180kg/m^3
		PH:	9.0

10. Fishing Operations: **N/A**

11. Well Kicks and Well Control Operations: **N/A**

12. Formation Leak Off Tests:

Depth:	201m
Fluid Density:	1000 kg/m^3
Applied Pressure:	4900 kPa
Hydrostatic Press.	1960 kPa
Mud Weight Equi.	3500 kg/m^3
Casing Setting Depth:	200mKB

The leak-off test was taken to a gradient of 34.68kPa /m without breaking down the formation.

13. Time Distribution Table:

	Activity												
Date	Drilling	Tripping	Surveying	Circulating	Cementing	WOC or WOO	Rig Service& safety	Rig Repair	Run Casing	Rig-up, Tear-out	Wait on Frost	Rig Move	Logging & DST
03/06/03											16		
03/07/03												24	
03/08/03										16		8	
03/09/03	11.25	2.75	1.25	2.25			.25			6.25			
03/10/03	8.25	10.50	.75	1.75			.75	2.00					
03/11/03		1.5		1.00	.75	4.00	1.75		4.75	10.25			
03/12/03	16.25	4.25	.75	1.75			1.00						
03/13/03	14.75	5.25	1.25	1.00			.75	1.00					
03/14/03	20.25		2.75				1.00						
03/15/03	16.25	6.50	.50	.25			.50						
03/16/03	23.50						.50						
03/17/03	17.25	4.00	.25	2.00			.50						
03/18/03		8.00					1.00						15.00
03/19/03		7.00				4.00	.50						12.50
03/20/03		12.75		2.00	1.00	4.50	.25						3.50
03/21/03		3.25			.25	5.75	.25			14.50			
Totals	127.75	65.75	7.50	12.0	2.00	18.25	9.00	3.00	4.75	47.00	16.00	32	31.00

Time Break Down

Activity	Hours	%
Drilling:	127.75	33.93
Tripping, Reaming:	65.75	17.46
Surveying:	7.50	01.99
Circulating:	12.00	03.19
Cementing:	2.00	00.53
WOC & WOO:	18.25	04.85
Rig Service & Safety:	9.00	02.39
Rig Repair:	3.00	00.80
Running casing:	4.75	01.26
Logging & DST:	31.00	08.23
Rig up & tear out:	47.00	12.62
Wait on Frost:	16.00	04.25
Rig Move:	32.00	08.50
Total Hours:	376.0	100.00

14. Deviation Survey: **see Geological section**

16. Abandonment Plugs:

	Plug 1	Plug 2	
Date	March 20, 2003	March 21, 2003	
Interval (KB)	795 - 590	227-26.8	
Formation Name	Mattson	Casing Shoe	
Formation Depth (KB)	685 - 800	201	
Tonnes of Cement	10.5	11	
Additives	.5% CD-31 + .5% A-11	.5% CD-31 + 2% A-11	
Slurry Density	1900kg/m^3	1900kg/m^3	
Felt Plug Depth (KB)	590m	26.8m	
Fluid Between Plugs	Gel-Chem mud	Gel-Chem mud	

17. Composite Well Record:

PARAMOUNT RESOURCES LTD

WELL DATA SUMMARY

Well Name:	Paramount et al mackay lake	Unique I.D.	300k366020123150		Licence#: 1966
Total Depth:	800	Surface Co-or:	60 deg 20', 123 deg 15'		
Spud Date:	Mar 8 @ 14:00	K.B. Elevation:	294.73 m.	Ground Level:	289.88 m.
Rig Release Date:	mar 21@08:00	Final Status	D&A		
AFE No:	02N310010	Drilling Cost:		Casing Cost:	$3,900
Drilling Rig	PD 117				
Rig Manager:	Wally Brecka				
Wellsite Supervisor	Brian Neigum				
Wellsite Geologist:	Jeff Mcneil				

Hole Size	
Size (mm)	Depth (m)
311	201
311	
200	800

Surface Casing: 17 jts. of 219.1 mm. 35.7 kg/m, K-55
Landed at (m) 201.69 Total Length 201.69
Cement with: 15 Tonne of 0-1-0 g with 3% cacl2
Cement returns 2 m3

Intermediate Csg: jts. of mm. kg/m
jts. of mm. kg/m
Landed at(m) Total length: Cement returns
Cement with:

Production Csg: jts. of mm. kg/m
jts. of mm. kg/m
Landed at (m) Total length: Cement returns
Cement with:

DST'S: Test #:		Top (m)	Base (m)	Formation
1		714	729	MATTSON
2		696	711	MATTSON
3		684	711	MATTSON
4				

Plug Number: 1		Plug Felt With:			
Base:		yes	Drill Pipe:	Mass (daN)	
Top:			Wireline:	Wireline Company:	
Bottom of Drill Pipe Set At:	795		Not Felt:		
Calculated Top Depth:	542	Plug Felt Date:	mar 20/03	Plug Felt at Depth:	590
Cement and Additives:	10.5 tonne of 0-1-0 g with .5% cd-31 dispersant & .5% a-11 accelerator				
Plug Number: 2		Plug Felt With:			
Base:		yes	Drill Pipe:	Mass (daN)	
Top:			Wireline:	Wireline Company:	
Bottom of Drill Pipe Set At:	227		Not Felt:		
Calculated Top Depth:	surface	Plug Felt Date:	mar 20/03	Plug Felt at Depth:	26.8
Cement and Additives:	11 tonne of 0-1-0 g with .5% cd-31 dispersant & 2% a-11 accelerator				
Plug Number:		Plug Felt With:			
Base:			Drill Pipe:	Mass (daN)	
Top:			Wireline:	Wireline Company:	
Bottom of Drill Pipe Set At:			Not Felt:		
Calculated Top Depth:		Plug Felt Date:		Plug Felt at Depth:	
Cement and Additives:					
Plug Number:		Plug Felt With:			
Base:			Drill Pipe:	Mass (daN)	
Top:			Wireline:	Wireline Company:	
Bottom of Drill Pipe Set At:			Not Felt:		
Calculated Top Depth:		Plug Felt Date:		Plug Felt at Depth:	
Cement and Additives:					

Comments: we had good return's to surface on plug #2.

PARAMOUNT RESOURCES LTD
RUNNING AND CEMENTING

SURFACE CASING O.D.: 219.1 MM

WELL NAME: Paramount et al mackay lakes K-36 LOC: K-36 60 deg, 20'-123 DATE: MAR 10/03

K.B. ELEVATION 294.73 CSG. FLG _____ TOTAL DEPTH (DRILLER) 201

HOLE SIZE	311			CSG IN HOLE	219.1		
DEPTH M	201			DEPTH SET	201.69		

MUD TYPE: GEL/CHEM WT: 1160 KG/M3 VISC: 45 WL: _____

BOP'S _____

RUNNING

POWER TONGS HILL'S TORQUE: MAX: 4460 NM NOM 3566 NM MIN 2670
TIME PIPE START: 9:45 TIME ON BOTTOM 14:00 TIME CIRCULATED 1
FILL UP POINTS: EVERY JT BOTTOM BY CSG 200.9 UP FROM KB: 0.79

REMARKS:

CEMENTING

CEMENT CO: BJ OPERATOR: KELLEY HYNDMAN AR. TIME: 23:00
TYPES & QUANTITY OF CEMENT: 15 Tonne of 0-1-0 g with 3% cacl2
HEIGHT TO BE CEMENTEI 201/0
FLUSH: 5m3 of water MIX TIME: START: 15:28 FIN: 15:45 WT: 1901
CALCULATED DISP 6.3 MEASURED DISP. 6.3 START: 15:51 FIN: 16:00
DISPLACING FLUID water MAX. PRESS 3 mpa BUMP W/ 3 mpa
CEMENT RETURNS 2 m3 FLOAT held WORKED CSG WHILE CMT recp.

REMARKS:

LANDING

TIME LANDED: DATE: WT. STRING (LESS BLOCKS)daN _____
WT. LANDED IN SLIPS: daN BOWL: _____ SIZE: _____
SERIES _____ SLIP & SEAL ASS: _____

REMARK:

AGENT OF OPERATOR: Brian Neigum

PARAMOUNT RESOURCES LTD
SURFACE CASING REPORT

O.D.: 219.1 MM

WELL NAME: Paramount et al mackay lakes K-36 LOC: K-36 60 deg, 20'-123 DATE: MAR 10/03

JTS ON LOC	M ON LOC	CASING WT.	GRADE	RANGE	THREAD	T & C	MAKE	JTS. RUN	DEPTH LANDED	M RUN IN WELL
22	258.52	35.7	K-55	3	8RD	ST&C	IPSCO	17	201.69	201.04

SHOE: MAKE:	topco	TYPE:	guide	LENGTH, M	0.28
COLLAR: MAKE:	weatherford	TYPE:	float	LENGTH, M	0.37
LANDING JOINT (WHEN USED) LENGTH, M				LENGTH, M	
OVERALL LENGTH OF CASING STRING, M				TOTAL, M	201.69
METERS UP FROM K.B. (SUBTRACT)		0.79 M			0.79
SETTING DEPTH: LOG:		DRILLER:	201.69		200.90
SHOE JOINT: OVERALL:	12.69 M (SUBTRACT)			SHOE JOINT	12.69
FLOAT COLLAR: LOG:	M	DRILLER:	189 M		188.21
K.B. TO CASING FLG:	M	CUT OFF:	M		

CENTRALIZERS & TURBOLIZERS:

MAKE: weatherford NUMBER 8

POSITIONS:

1 meter up on the shoe jt and every 2nd jt.

SCRATCHERS:

MAKE: NUMBER

POSITIONS:

JOINTS WELDED: thread lock the shoe and float top and bottom

REMARKS:

OPERATORS REP: Brian Neigum

PARAMOUNT RESOURCES LTD

PIPE TALLY

DATE: MAR 10/03

WELL NAME: Paramount et al mackay lakes K-36 LOCATION: K-36 60 deg, 20'-123 deg,15'

CONTRACTOR: PD 117

PIPE DESCRIPTION: 219.1 mm. 35.7 KG/M GRADE: K-55 RANGE: 3

CPLG: ST&C THREAD: 8RD MFG.: IPSCO NEW OR USED: NEW

TYPE OF STRING: SURFACE TALLIED: BRIAN & CREW THREADS OFF

	LENGTH		LENGTH		LENGTH		LENGTH		LENGTH		LENGTH
1	12.04	21	11.55	41		61		81		101	
2	11.68	22	12.07	42		62		82		102	
3	11.60	23		43		63		83		103	
4	11.77	24		44		64		84		104	
5	11.85	25		45		65		85		105	
6	11.47	26		46		66		86		106	
7	11.84	27		47		67		87		107	
8	11.85	28		48		68		88		108	
9	11.93	29		49		69		89		109	
10	12.05	30		50		70		90		110	
TTL 1-10	118.08	TTL 21-30	23.62	TTL 41-50		TTL 61-70		TTL 81-90		TTL 101-110	
11	11.56	31		51		71		91		111	
12	11.92	32		52		72		92		112	
13	11.40	33		53		73		93		113	
14	11.35	34		54		74		94		114	
15	11.93	35		55		75		95		115	
16	12.04	36		56		76		96		116	
17	11.57	37		57		77		97		117	
18	12.04	38		58		78		98		118	
19	11.45	39		59		79		99		119	
20	11.56	40		60		80		100		120	
TTL 11-20	116.82	TTL 31-40		TTL 51-60		TTL 71-80		TTL 91-100		TTL 111-120	
TTL 01-20	234.90	TTL 21-40	23.62	TTL 41-60		TTL 61-80		TTL 81-100		TTL 101-120	

TOTAL 1-20	234.90	PAGE 1 TOTAL	258.52	Shoe=	0.28
				Float=	0.37
TOTAL 21-40	23.62	LEFT OUT:	57.48	Shoe jt.=	12.69
TOTAL 41-60		FLOAT & SHOE	0.65	TOTAL JOINTS ON LOCATION	22
TOTAL 61-80		GRAND TOTAL:	201.69	REMARKS:	
TOTAL 81-100		jts out 14,17,19,20,21.			
TOTAL 100-120					
TOTAL 1 - 120	258.52			AGENT OF OPERATOR:	Brian Neigum

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D. 300k366020123150		WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$221,578
CELLULAR #:	403-548-0813	CUM. COST:	$1,017,411
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:	mar 21@08:00	CUM MUD:	$4,947
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	13

DAY: 16 REP DATE: Mar 21/03 STATUS 06:00 Rig released

DEPTH: 800m PROG. _____ KB: 294.73 GL: 289.88 MACP: 5013

SURVEYS:

MUD TYPE: WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
BIT SUB			
DRILL BHA			
DIR. BHA			
JARS			
DRILL PIPE			
KELLY			
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:		CEMENT:	0.25
SURVEY:		WOC:	5.75
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	
DRILL OUT:		TRIP:	1.25
CIRCULATE:		L.D.D.S.:	2.00
NIPPLE UP BOP:		REAM:	
tear out	14.50	safety	0.25
TOTAL HOURS:	24.00		

REMARKS

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

Wait on cement, run back in and feel the bottom plug at 590 mkb. Lay down 49 singles and hold a safety meeting with the cementers. Rig up the cementers to pump plug #2 the drill pipe was at 227 mkb. We pumped 11 tonne og 0-1-0 g with .5% cd-31 & 2% a-11, we got good cement back to surface. Pull out of plug #2 and wait on cement. Run back in and feel plug #2 at 26.8 mkb. Lay down the rest of the drill pipe. Tear out the rig for spring break and prepare it for the move back to White Court.

FINAL WELL STATUS: D&A

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$83,952
CELLULAR #:	403-548-0813	CUM. COST:	$795,833
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:	mar 21@08:00	CUM MUD:	$4,947
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	12

DAY: 15 REP DATE: Mar 20/03 STATUS 08:00 W O C

DEPTH: PROG. KB: 294.73 GL: 289.88 MACP: 5013

SURVEYS:

MUD TYPE: WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
BIT SUB			
DRILL BHA			
DIR. BHA			
JARS			
DRILL PIPE			
KELLY			
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		W.O.O	2.00
RIG SERVICE:	0.25	CEMENT:	1.00
SURVEY:		WOC:	2.50
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	3.50
DRILL OUT:		TRIP:	10.00
CIRCULATE:	1.50	L.D.D.S.:	
NIPPLE UP BOP:		REAM:	0.25
work with fish	0.50	w.o fishing	2.00
reverse cir	0.50		
TOTAL HOURS:	24.00		

REMARKS

Pull out dst # 3 and break it down, we got 85 meters of drilling mud for a recovery, load out the test tools. Run in with the drill pipe open ended, we hit something at 280.5 mkb, it felt like that jt of casing went farther down the well. We tripped out and run in with a drill bit and hit at the same point, we just rotated with the kelly spiner and it felt like a little fill then it would torque up like we where hitting the casing. Trip out and take a old bit to town, we cut 2 shank's off of the bit and run back in. We tagged the top jt of casing, turned the pipe and it fell right in, we then ran down to 280.5 mkb. We turned the pipe and worked it, it just wouldn't fall in and when you set a 1/2 dan on it and tryed to turn it with the tong's it just torqued up. Pull out and run back in with a bit while waiting on the canfish service hand. Pull out of the hole and make up mule shoe made out of 4 1/2 drill pipe, we tagged at 280.5 mkb, when you turned the pipe with a chain tong on a 1/2 tour it would take torque. We installed the kelly with a single and rotated it and worked it till it fell in. We ran right to bottom after this. Cirulate and condition hole for plug's. Pump plug #1 from 795-600 mkb, 10.5 tonne of 0-1-0 g with .5%cd-31 dispersant & .5% a-11 accelerator. Pull out to 322 mkb, reverse circulate and lay down drill collars while waiting on cement. (When we circulated we got back a small amount of oil in the mud.)

FINAL WELL STATUS: D&A

PARAMOUNT RESOURCES LTD

DRILL STEM TEST REPORT

WELL NAME:	Paramount et al mackay lakes K-36				
LOCATION:	K-36 60 deg, 20'-123 deg,15'			**DATE:**	Mar 19/03
TEST COMPANY:	NORTHSTAR			**TESTER:**	SHAWN
HOLE SIZE:	200	**WELL DEPTH:**	800	**DRILL PIPE SIZE:**	114
		INTERVAL Top:	684		
DST #	3	**INTERVAL Base:**	711	**ZONE:**	MATTSON
TYPE #	INFLATE STRADDL	**PACKER O.D.:**	165		

TIMES		**PRESSURES**		**PRESSURES**	
PF	15	**IHP**	8490	**FFP**	8000
ISI	57	**PF**	450	**FSIP**	1340
VO	88	**ISIP**	390	**FHP**	8060
FSI	209	**IFP**	8080		

FLOW DESCRIPTION WEAK BLOW 2" IN TO THE PAIL, DIMINISHING TO SURFACE BUBBLES, NO GAS TO SURFACE.

PREFLOW: WEAK BLOW 2" IN TO THE PAIL, DIMINISHING TO SURFACE BUBBLES IN 7 MIN'S, NO GAS TO SURFACE.

VALVE OPEN:

GAS FLOW RATES:

TIME	ORIFICE SIZE (mm)	BACK PRESSURE (kPa)	RISER (mm)	RATE (m3/d)	NOTES

RECOVERY:

85 METERS OF MUD IN THE DRILL COLLARS.

SAMPLES CAUGHT: YES

SENT TO: AGAT

PARAMOUNT RESOURCES LTD

DRILL STEM TEST REPORT

WELL NAME:	Paramount et al mackay lakes K-36				
LOCATION:	K-36 60 deg, 20'-123 deg,15'			**DATE:**	Mar 19/03
TEST COMPANY:	Northstar testers			**TESTER:**	SHAWN
HOLE SIZE:	200	**WELL DEPTH:**	800	**DRILL PIPE SIZE:**	114
		INTERVAL Top:	696		
DST #	2	**INTERVAL Base:**	711	**ZONE:**	MATTSON
TYPE #	inflate straddle	**PACKER O.D.:**	165		

TIMES		**PRESSURES**		**PRESSURES**	
PF	10	**IHP**	8280	**FFP**	2450
ISI	66	**PF**	2430	**FSIP**	7520
VO	65	**ISIP**	7510	**FHP**	8200
FSI	161	**IFP**	2440		

FLOW DESCRIPTION NO BLOW TO PAIL ON OPENING, NO GAS TO SURFACE

PREFLOW: NO BLOW TO PAIL ON OPENING, NO GAS TO SURFACE

VALVE OPEN:

GAS FLOW RATES:

TIME	ORIFICE SIZE (mm)	BACK PRESSURE (kPa)	RISER (mm)	RATE (m3/d)	NOTES

RECOVERY:

THIS TEST WAS A RESET. THE FLUID RECOVERY WAS 161 METERS OF MUDDY FREASH WATER.

SAMPLES CAUGHT YES
SENT TO: AGAT

PARAMOUNT RESOURCES LTD

DRILL STEM TEST REPORT

WELL NAME:	Paramount et al mackay lakes K-36				
LOCATION:	K-36 60 deg, 20'-123 deg,15'			**DATE:**	Mar 18/03
TEST COMPANY:	northstar			**TESTER:**	SHAWN
HOLE SIZE:	200	**WELL DEPTH:**	800	**DRILL PIPE SIZE:**	114
		INTERVAL Top:	714		
DST #	1	**INTERVAL Base:**	729	**ZONE:**	MATTSON
TYPE #	inflate straddle	**PACKER O.D.:**	165		

TIMES		**PRESSURES**		**PRESSURES**	
PF	10	**IHP**	8620	**FFP**	2330
ISI	52	**PF**	560	**FSIP**	7760
VO	88	**ISIP**	7810	**FHP**	8540
FSI	128	**IFP**	640		

FLOW DESCRIPTION very weak to light blow to pail, no gas to surface

PREFLOW: very weak to light blow to pail, open to 3/4" choke, blow very weak but steady, blow dropped off no blow to pail

VALVE OPEN: this test is a miss run because the tester run a extra stand in the hole and never recorded it. He found the mistake when we where done the final shut in. it was suppost to test 696-711

GAS FLOW RATES:

TIME	ORIFICE SIZE (mm)	BACK PRESSURE (kPa)	RISER (mm)	RATE (m3/d)	NOTES

RECOVERY:

SAMPLES CAUGHT Yes/No

SENT TO:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D. 300k366020123150		WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$24,397
CELLULAR #:	403-548-0813	CUM. COST:	$711,519
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	$4,585
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	11

DAY: 14 REP DATE: Mar 19/03 STATUS 08:00 Trip dst #3

DEPTH: 800 PROG. KB: 294.73 GL: 289.88 MACP: 5013

SURVEYS:

MUD TYPE: Gel/chem WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT			
BIT SUB			
DRILL BHA			
DIR. BHA			
JARS			
DRILL PIPE			
KELLY			
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.25	CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	12.50
DRILL OUT:		TRIP:	7.00
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
SAFETY	0.25	W.O.O	4.00
TOTAL HOURS:	24.00		

REMARKS

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Finish the main flow on dst #2 and the shut in. Pull out of the hole with dst #2 and recover the recorders, we got 161meters of muddy freash water. Send the charts to town and wait on orders. Make up the tools for dst #3 from 684-711 mkb. Run in with dst # 3 and pump up the packers. On the preflow we had a weak blow 2" in the pail going to nothing. Shut in for 60 min's, second flow was a weak blow 2" in the pail going to nothing in 7 min's. Final shut in 120 min's and then i sent the chart to town and wait on orders. Hoist dst # 3.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$46,610
CELLULAR #:	403-548-0813	CUM. COST:	$687,122
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	$4,585
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	10

DAY: 13 REP DATE: Mar 18/03 STATUS 08:00 run dst

DEPTH: 800 PROG. KB: 294.73 GL: 289.88 MACP: 2692

SURVEYS:

793 1.5

MUD TYPE: gel/chem WT: 1180 VISC: 80 WL: 9 FC: PH: 9

ADDITIVES: barite 10

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
2	176243	200	varel	CH-47 XG	3 x 11.9	800	148	50.25	4 2 in	14	100

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
BIT SUB	165	64	0.51
1 DC	165	64	9.54
SHOCK SUB	166	50	1.88
7 DC	165	64	65.04
JARS	160	56	4.82
8 DC	165	64	74.58
67 DP	114	72	635.22
KELLY			8.16
REMARKS		TOTAL	800.00

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	5.50
RIG SERVICE:	0.50	CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	9.50
DRILL OUT:		TRIP:	3.75
CIRCULATE:		L.D.D.S.:	0.75
NIPPLE UP BOP:		REAM:	
safety	0.50		
handle dst tools	3.50		
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

STI,HBC,SPED,MRT 798.2 MKB TO 175 MKB

Pull out to log. Rig up computalog and run in with the tools. We found that the casing was parted the 2 bottom JT's came off individually, one JT's is at 254 mkb and the other jt is 227mkb. Rig out loggers and lay down 6 dc's. Make up the dst tool's for dst #1 from 696 - 711 mkb. Pump up the tool and test. When we where ready to come out of the hole the tester noticed he missed transfering 1 stand from the rig hand's talley to his and I thought his was the only talley because it was hand written. On dst #1 we tested from 714.69 - 729.69 mkb, this is across the dst #3 intervall. Test description preflow very weak to light blow to pail, no gas to surface. second flow very weak to light blow to pail, open to 3/4 choke, blow very weak but steady, blow drop off no blow to pail. I talked to greg and we just moved up one single because we never got any wieght increase. This time we are at 696 -711 mkb. Pump up the packers again and start to test. On the preflow we only got about 6 bubbles in the pail with the hose just against the water, it was the same on the main flow.

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$26,129
CELLULAR #:	403-548-0813	CUM. COST:	$640,512
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$495
R.R. DATE:		CUM MUD:	$4,585
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	9

DAY: 12 REP DATE: Mar 17/03 STATUS 08:00 Hoist to log

DEPTH: 800 PROG. 54 KB: 294.73 GL: 289.88 MACP: 2692

SURVEYS: 746 2

MUD TYPE: Gel/chem WT: 1180 VISC: 80 WL: 9 FC: PH: 9

ADDITIVES: gel 33

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
2	176243	200	varel	CH-47 XG	3 x 11.9	IN	148	50.25	IN	14	100

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	100	1.250	7700	125	59	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
BIT SUB	165	64	0.51
1 DC	165	64	9.54
SHOCK SUB	166	50	1.88
7 DC	165	64	65.04
JARS	160	56	4.82
8 DC	165	64	74.58
67 DP	114	72	635.22
KELLY			8.16
REMARKS		TOTAL	800.00

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.50	CEMENT:	
SURVEY:	0.25	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	17.25	DST:	
DRILL OUT:		TRIP:	3.00
CIRCULATE:	2.00	L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
clean pump	1.00		
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Drill 200mm main hole from 746 mkb, rig service and survey. Drill to 776 mkb, stop and clean pump suction and valves. Drill to 800 mkb, circulate and condition the hole, wiper trip back to the drill collars. Circulate and condition the hole, survey, hoist to log.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$36,162
CELLULAR #:	403-548-0813	CUM. COST:	$614,383
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$375
R.R. DATE:		CUM MUD:	$4,090
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	8

DAY: 11 REP DATE: Mar 16/03 STATUS 08:00 Drill to 746

DEPTH: 746 PROG. 68 KB: 294.73 GL: 289.88 MACP: 2770

SURVEYS:

MUD TYPE: Gel/chem WT: 1140 VISC: 42 WL: 9 FC: PH: 10

ADDITIVES: gel 10, caustic 1, satyflo 1,

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
2	176243	200	varel	CH-47 XG	3 x 11.9	IN	94	33	IN	14	100

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	100	1.250	6300	125	59	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
BIT SUB	165	64	0.51
1 DC	165	64	9.54
SHOCK SUB	166	50	1.88
7 DC	165	64	65.04
JARS	160	56	4.82
8 DC	165	64	74.58
61 DP	114	72	578.03
KELLY			11.40
		TOTAL	746.05

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.50	CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	23.50	DST:	
DRILL OUT:		TRIP:	
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Drill 200 mm main hole from 678 mkb to 746 mkb with 2 rig services. Our average penitration rate is 2.8 meters an hour with this bit.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$46,683
CELLULAR #:	403-548-0813	CUM. COST:	$578,221
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	$3,715
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	7

DAY: 10 REP DATE: Mar 15/03 STATUS 08:00 Drill to 678 mkb

DEPTH: 678 PROG. 58 KB: 294.73 GL: 289.88 MACP: 2731

SURVEYS: 605 .94, 615 .47, 637 .31, 651 .21.

MUD TYPE: Gel/chem WT: 1160 VISC: 48 WL: 8.5 FC: PH: 10

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1	187387	200	varel	ch-18	3 x 11.9	652	451	58.5	8 8 O	6	40/ motor
2	176243	200	varel	CH-47 XG	3 x 11.9	IN	26	9.5	IN	14	80

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	100	1.250	7000	125	59	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
BIT SUB	165	64	0.51
1 DC	165	64	9.54
SHOCK SUB	166	50	1.88
7 DC	165	64	65.04
JARS	160	56	4.82
8 DC	165	64	74.58
54 DP	114	72	511.98
KELLY			9.40
		TOTAL	678.00

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.50	CEMENT:	
SURVEY:	0.50	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	16.25	DST:	
DRILL OUT:		TRIP:	3.50
CIRCULATE:	0.25	L.D.D.T.:	1.50
NIPPLE UP BOP:		REAM:	1.50
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Drill and survey from 620 to 652 mkb, survey and trip the bit. Lay down the directional tool's. Run back to bottom with a CH-47 bit, we put the kelly on from 623 mkb on because the old bit was really under gauge. We had to ream 638-652 mkb. Rig service and drill to 678 mkb.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$33,709
CELLULAR #:	403-548-0813	CUM. COST:	$530,938
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$572
R.R. DATE:		CUM MUD:	$3,115
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	6

DAY: 9 REP DATE: Mar 14/03 STATUS 08:00 Drill main hole

DEPTH: 620 PROG. 200 KB: 294.73 GL: 289.88 MACP: 2751

SURVEYS: 406 .42, 425 .25, 444 .58, 463 .06, 501 .34, 520 .3, 539 .35, 558 .47,

MUD TYPE: gel/chem WT: 1150 VISC: 50 WL: 8 FC: PH: 10

ADDITIVES: soda ash 2, stayflo 1, gel 24.

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1	187387	200	varel	ch-18	3 x 11.9	in	419	51.75	in	6	40/ motor

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	100	1.250	9000	125	59	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
Motor	178		8.34
Float sub	162	58	0.56
NM MULESHOE	163	71	0.93
NMDC	153	83	8.15
NM FIN CUTTER	164	83	0.64
NMDC	155	83	8.47
8 DC 1JAR 8DC	165	65	153.98
46 DP	114	72	436.53
KELLY			2.50
		TOTAL	620.35

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.75	CEMENT:	
SURVEY:	2.75	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	20.25	DST:	
DRILL OUT:		TRIP:	
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
bop drill	0.25		
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Rig service & drill and survey from 420 mkb to 620 mkb with survey's. Bop drill with the new crew back from day's off. The last survey was at 558 mkb because the tools quit and I would like to find the permian before I trip it.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$49,994
CELLULAR #:	403-548-0813	CUM. COST:	$508,781
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$455
R.R. DATE:		CUM MUD:	$2,543
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	5

DAY: 8 REP DATE: Mar 13/03 STATUS 08:00 Drill

DEPTH: 420 PROG. 125 KB: 294.73 GL: 289.88 MACP: 2957

SURVEYS: 290 2.27, 311 1.75, 330 1.06, 349 1.57, 368 .66, 387 .96

MUD TYPE: gel/chem WT: 1045 VISC: 40 WL: 7 FC: PH: 10

ADDITIVES: envirofloc 1, gypsum 2, sawdust 5, floc 2, gel 22, caustic 1.

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1	187387	200	varel	ch-18	3 x 11.9	in	219	31.5	in	6	40/ motor

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	100	1.250	6000	125	59	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
Motor	178		8.34
Float sub	162	58	0.56
NM MULESHOE	163	71	0.93
NMDC	153	83	8.15
NM FIN CUTTER	164	83	0.64
NMDC	155	83	8.47
8 DC 1JAR 8DC	165	65	153.98
24 DP	114	72	227.69
KELLY			11.40
		TOTAL	420.41

TIME DISTRIBUTION

MORU:		RIG REP:	1.00
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.75	CEMENT:	
SURVEY:	1.25	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	14.75	DST:	
DRILL OUT:		TRIP:	3.25
CIRCULATE:	1.00	L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
Make dir. Tools	2.00		
TOTAL HOURS:	24.00		

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Drill to 229 mkb,survey. Trip into the casing and change the swedge on the swivel gooseneck. Drill a head to 309 mkb. Trip out for directional tools, make up directional tool's, run back in with the tool's. Directional drill to straighten the hole out. Drill and survey to 420 mkb.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$59,406
CELLULAR #:	403-548-0813	CUM. COST:	$457,460
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	$916
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	4

DAY: 7 REP DATE: Mar 12/03 STATUS 08:00 Drill to 295

DEPTH: 295 PROG. 94 KB: 294.73 GL: 289.88 MACP: 3026

SURVEYS: 217 2.5, 248 2.5, 267 2.5,

MUD TYPE: floc/water WT: 1010 VISC: 28 WL: FC: PH: 10.5

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1	187387	200	varel	ch-18	3 x 11.9	in	94	16	in	1/3	140

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229	120	1.500	5000	150	71	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	200		0.25
BIT SUB	165	64	0.51
1 DC	165	64	8.90
SHOCK SUB	166	50	1.88
15 DC	165	64	140.26
14 DP	114	72	132.66
KELLY			11.40
		TOTAL	295.86

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.50	CEMENT:	
SURVEY:	0.75	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	16.25	DST:	
DRILL OUT:	2.00	TRIP:	2.25
CIRCULATE:	1.25	L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
BOP DRILL	0.50		
LEAK OFF	0.50		
TOTAL HOURS:	24.00		

REMARKS

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Run in the hole with a ch-18 bit. Hold a safety meeting and bop drill, Rig service and check motor kill's. Drill out the cement and drill to 210 mkb, circulate bottom's up. Break off the kelly and do a leak off gradient, we had an applied press of 4900 kpa and this gives you a 34.68 kpa/meter gradient with no break. Drill ahead to 229 mkb and survey our survey was 2.5 deg's. Drill ahead to 238 mkb and we got stuck for about 1/4 hour. Pull back into the casing and mix up some mud, run back in and continuie to drill with floc water. Drill and survey to 295 mkb with 1-2 dan on the bit. while waiting on a motor and directional hand's.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$48,237
CELLULAR #:	403-548-0813	CUM. COST:	$398,054
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	$916
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	3

DAY: 6 REP DATE: Mar 11/03 STATUS 08:00 slip & cut line

DEPTH: 201 PROG. KB: 294.73 GL: 289.88 MACP:

SURVEYS:

MUD TYPE: WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	229						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:		CEMENT:	0.75
SURVEY:		WOC:	4.00
PRESSURE TEST:	7.75	RUN CSG:	4.25
DRILL:		DST:	
DRILL OUT:		TRIP:	1.50
CIRCULATE:	1.00	L.D.D.S.:	
NIPPLE UP BOP:	3.00	REAM:	
SLIP & CUT	1.25	safety	0.50
		TOTAL HOURS:	24.00

REMARKS

RAN 17 JTS OF 219.1 MM, 35.7 KG/M, k-55 8rd st&c CASING.

LANDED AT 200.90 MKB. TOTAL LENGTH 201.69 METERS.

CEMENTED WITH 15 Tonne of 0-1-0 g with 3% cacl2

PLUG DOWN AT 16:00 HRS. ON mar 10/03 WITH 2.0 M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC M TO M.

REMARK'S

Pull out to run casing. Hold a safety meeting and job discussion with hill's tong hand. Rig up the tong's and start runing casing. We run in 3 jts and hit a bridge at 33 mkb, at this point we got stuck, we could circulate but couldn't pull up, we then put on 1 more jt and pushed it through with the block's. the pipe went in good after this. Circulate casing, hold a job meeting with bj. Cement the casing with 15 tonne of 0 -1-0 g with 3% cacl2.

Voc, nipple down diverter, cut casing and weld on the boul. Nipple up the bop's and press test all maniflod valve's 1500/10500 kpa, press test the casing, blind rams, hcr valve, kill line valve 1500/10500 kpa 15 min's each. Install the cup tester and press test the out side kill line valves, hcr valve, pipe ram's, in side bop's and stabbing valve to 1500/10500 kpa. Function test the motor kill's, accumulator. Slip and cut drilling line.

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg, 15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$38,899
CELLULAR #:	403-548-0813	CUM. COST:	$349,817
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$615
R.R. DATE:		CUM MUD:	$916
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	2

DAY: 5 REP DATE: Mar 10/03 STATUS 08:00 Condition mud

DEPTH: 201 PROG. 77 KB: 294.73 GL: 289.88 MACP:

SURVEYS: 130 1 3/4, 158 2, 189 1 3/4.

MUD TYPE: Gel/chem WT: 1200 VISC: 90 WL: FC: PH: 10.5

ADDITIVES: Gel 38, caustic 1.

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
2a	2030302	311	russian	LS 115	3 x15.9	201	81	7		6	60/100

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	219	120	1.500	27	23		

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	311		0.30
BIT SUB	203		0.91
2 DC	203		17.88
1 X/O	203		0.63
16 DC	165		149.16
3 DP	114		28.53
KELLY			3.59
		TOTAL	201.00

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.25	CEMENT:	
SURVEY:	0.75	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	8.25	DST:	
DRILL OUT:		TRIP:	8.00
CIRCULATE:	1.75	L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
work tight hole	2.50	safety	0.50
work on tong's	2.00		
TOTAL HOURS:	24.00		

REMARKS

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Drill from 120 to 143mkb,survey, and work our way back out of tight hole to 116 mkb. Run back to bottom and drill from 143 to 171 mkb,survey. Drill to 189 mkb circulate and condition the hole. Wiper trip and strap, diff .27. Drill and survey to 201 mkb, circulate and condition the hole, pull out to run casing. Hold a job safety meeting and rig up the power tong's. We could not get the tong's to work so we had to run back in and wait on different tong's. We had a few tight spots to ream and the vis went from 90 to 60 so we are also working on the mud.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$143,552
CELLULAR #:	403-548-0813	CUM. COST:	$310,918
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	$301
R.R. DATE:		CUM MUD:	$301
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	1

DAY: 4 REP DATE: Mar 9/03 STATUS 08:00 TRIP BIT

DEPTH: 124 PROG. 105 KB: 294.73 GL: 289.88 MACP:

SURVEYS: 31 3/4, 58 1.25,77 1. 105 1.25.

MUD TYPE: Gel/chem WT: 1100 VISC: WL: FC: PH: 10

ADDITIVES: gel 16, caustic 1, soda ash 1

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM
1a	126641	311	varel	L-117	3 x 17.5	120	105	11.25	4 2 IN	4/8	60/180

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	219	120	1.500	2000	27	23	

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
BIT	311		0.30
BIT SUB	203		0.91
2 DC	203		17.88
1 X/O	203		0.63
10 DC	165		93.05
KELLY			7.40
		TOTAL	120.17

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:	0.25	CEMENT:	
SURVEY:	1.25	WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:	11.25	DST:	
DRILL OUT:		TRIP:	2.75
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:	5.50	CTB:	
HANDLE TOOLS:		BOP DRILL	0.50
safety & prespud	0.25	MIX MUD	2.25
TOTAL HOURS:	24.00		

REMARKS

RAN _____ JTS OF _____ MM, _____ KG/M, _____ _____ CASING.

LANDED AT _____ MKB. TOTAL LENGTH _____ METERS.

CEMENTED WITH _____

PLUG DOWN AT _____ HRS. ON _____ WITH _____ M3 CEMENT RETURNS.

LOGS RUN

DISFL _____ M TO _____ M. CNL-DEN _____ M TO _____ M.

SONIC _____ M TO _____ M.

REMARKS:

Finish nippling up the diverters system and rigging up the prefab's. Hold a prespud meeting, function test the diverter system and motor kill's. Hold a bop drill. Spud with a 311 mm bit at 14:00 hrs mar 8/03. Drill and survey to 77 mkb, trip and check the bit. Drill and survey to 120 mkb. Trip for bit. (we hit gravel right below the conductor and there is very hard stringers through out the hole.)

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		**LOCATION:**	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	**WELL LICENCE**	1966
SUPERVISOR:	Brian Neigum 403-997-5286	**DAILY COST:**	$25,882
CELLULAR #:	403-548-0813	**CUM. COST:**	$167,366
SPUD DATE:	Mar 8 @ 14:00	**DAILY MUD:**	
R.R. DATE:		**CUM MUD:**	
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 **EST. T.D** 605	**DAYS FROM SPUD:**	

DAY: 3 **REP DATE:** Mar 8/03 **STATUS 08:00** Nipple up diverter

DEPTH: **PROG.** **KB:** 294.73 **GL:** 289.88 **MACP:**

SURVEYS:

MUD TYPE: **WT:** **VISC:** **WL:** **FC:** **PH:**

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	219						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
		TOTAL	

TIME DISTRIBUTION

MORU:		**RIG REP:**	
DRILL MH & RH:		**LOGGING:**	
RIG SERVICE:		**CEMENT:**	
SURVEY:		**WOC:**	
PRESSURE TEST:		**RUN CSG:**	
DRILL:		**DST:**	
DRILL OUT:		**TRIP:**	
CIRCULATE:		**L.D.D.S.:**	
NIPPLE UP BOP:	6.00	**REAM:**	
rig move	7.75	**Safety**	0.25
Rig up	10.00		
TOTAL HOURS:	24.00		

REMARKS

RAN ____ **JTS OF** ____ **MM,** ____ **KG/M,** ____ **CASING.**

LANDED AT ____ **MKB. TOTAL LENGTH** ____ **METERS.**

CEMENTED WITH ____

PLUG DOWN AT ____ **HRS. ON** ____ **WITH** ____ **M3 CEMENT RETURNS.**

LOGS RUN

DISFL ____ **M TO** ____ **M.** **CNL-DEN** ____ **M TO** ____ **M.**

SONIC ____ **M TO** ____ **M.**

REMARKS:

Hold a safety meeting with Allnite trucking. Spot the rig over the conductor and the rest of the buildings. Rig up the rig and Nipple up the Diverter. **The conductor barrel should have been a 16" not 13 5/8" because there is no room for error and the flage for the diverter is for 16" barrel, so we had to build a bell.**

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$124,286
CELLULAR #:	403-548-0813	CUM. COST:	$141,484
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	

DAY: 2 REP DATE: Mar 7/03 STATUS 08:00 wait on daylight

DEPTH: PROG. KB: 294.73 GL: 289.88 MACP:

SURVEYS:

MUD TYPE: WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	219						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:		CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	
DRILL OUT:		TRIP:	
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
WELD BOWL:		safety	0.25
rig move	23.75		
TOTAL HOURS:	24.00		

REMARKS

RAN JTS OF MM, KG/M, CASING.

LANDED AT MKB. TOTAL LENGTH METERS.

CEMENTED WITH

PLUG DOWN AT HRS. ON WITH M3 CEMENT RETURNS.

LOGS RUN

DISFL M TO M. CNL-DEN M TO M.

SONIC M TO M.

REMARKS:

Hold a safety meeting with All Nite trucking. Load out the drilling rig and travel to Fort Liard ruffly 700 km.

FINAL WELL STATUS:

PARAMOUNT RESOURCES LTD

DAILY DRILLING REPORT

Paramount et al mackay lakes K-36		LOCATION:	K-36 60 deg, 20'-123 deg,15'
UNIQUE I.D.	300k366020123150	WELL LICENCE	1966
SUPERVISOR:	Brian Neigum 403-997-5286	DAILY COST:	$17,198
CELLULAR #:	403-548-0813	CUM. COST:	$17,198
SPUD DATE:	Mar 8 @ 14:00	DAILY MUD:	
R.R. DATE:		CUM MUD:	
CONTRACTOR:	PD 117		
A.F.E. #:	02N310010 EST. T.D 605	DAYS FROM SPUD:	

DAY: 1 REP DATE: Mar 6/03 STATUS 08:00 Load out rig

DEPTH: PROG. KB: 294.73 GL: 289.88 MACP:

SURVEYS:

MUD TYPE: WT: VISC: WL: FC: PH:

ADDITIVES:

BIT	SERIAL #	SIZE	MFG	TYPE	JETS	OUT	RUN	HRS	TBG	WEIGHT	RPM

PUMP	DESCR.	LINER	STK	SPM	RATE	PRESS	AV DC	AV DP	NOZZEL VEL
emsco	F-800	152	219						

DRILLING ASSEMBLY

TOOL	OD	ID	LENGTH
		TOTAL	

TIME DISTRIBUTION

MORU:		RIG REP:	
DRILL MH & RH:		LOGGING:	
RIG SERVICE:		CEMENT:	
SURVEY:		WOC:	
PRESSURE TEST:		RUN CSG:	
DRILL:		DST:	
DRILL OUT:		TRIP:	
CIRCULATE:		L.D.D.S.:	
NIPPLE UP BOP:		REAM:	
Tear out rig	16.00		
TOTAL HOURS:	16.00		

REMARKS

RAN JTS OF MM, KG/M, CASING.

LANDED AT MKB. TOTAL LENGTH METERS.

CEMENTED WITH

PLUG DOWN AT HRS. ON WITH M3 CEMENT RETURNS.

LOGS RUN

DISFL M TO M. CNL-DEN M TO M.

SONIC M TO M.

REMARKS:

Tear out the drilling rig and wait on daylight to move.

FINAL WELL STATUS:

Final Well Configuration: Attach Stick Diagram

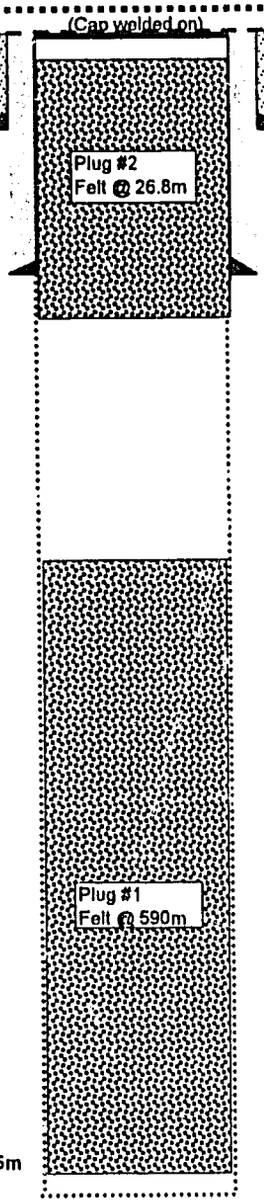
Paramount et al McKay Lakes K-36

Date: April 02, 2003

(as drilled and abvandoned)

Grd Elev.: 289.9m
KB Elev.: 294.7m

Formation	Top	DEPTH	HOLE SIZES:	CASING SIZES:
				Cut- Off: 1.0m below Ground
Plug top	26.8m			Conductor Barrel: 339mm
		19m	445mm	Cement: Construction
				Surf. Csg.: 219.7mm
		201	311mm	Cement: 0:1:0 "G"
Plug bottom	225m			
Scatter	295.0m			
Garbutt	393.0m			
Chinkeh	576.5m			
Plug top	590m			
Permian	606.0m			
Kindle	659.0m			
Mattson	686.5m			
Mattson M-2b	---------			
Mattson M-3	717.5m			
Mattson M-4	776.0m			
Plug bottom	795m			
Total Depth	800m			200mm



Plug #1:
10.5 Tonnes 0:1:0 "G" + .5%CD-31 + .5% A-11

D: GEOLOGY

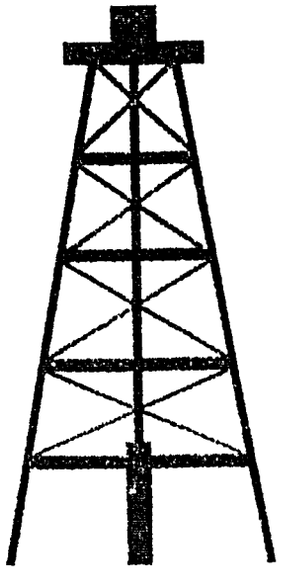
Geological Summary

CORING RECORD: **No core cut**

T.I.H.

Consulting Ltd.

1602 – 5th Street N.E.
Calgary, Alberta. T2E 7W3
Tel:(403) 233-7729
Fax:(403) 266-0258



Geological Report:

PARAMOUNT ET AL McKAY LAKES K-36
UNIQUE I.D.: 300K366020123150

Len Horback, P.Geol.
Consulting Geologist
Tel: 233-7729
24 hour Answering Service

SUMMARY OF WELL DATA

WELL NAME:	PARAMOUNT ET AL McKAY LAKES K-36
UNIQUE I.D.:	300/K-36 60-20-123-15
SURFACE CO-ORDINATES:	
DRILLING LICENCE:	1966
GROUND ELEVATION:	294.7M K.B. ELEVATION: 289.9M
DATE SPUDDED:	14:00 HOURS, MARCH 8, 2003.
DRILLING COMPLETED:	02:40 HOURS, MARCH 17, 2003.
RIG RELEASED:	MARCH 19, 2003 (ESTIMATED).
SURFACE CASING:	RAN 12 JOINTS OF 219.1MM, 35.7KG/M, K-55, ST&C CASING. LANDED @ 200.9M K.B. CEMENTED WITH 15 TONNES OF 0:1:0 CLASS "G" + 3% $CaCl_2$. HAD 2.0M^3 GOOD CEMENT RETURNS.
HOLE SIZE:	200MM
TOTAL DEPTH	800M
DRILLSTEM TESTS:	DATA NOT INCLUDED IN THIS REPORT.
CORES:	NONE
CONTRACTOR:	PRECISION DRILLING INC. RIG NO.: 117
ENGINEER:	BRIAN NEIGUM
GEOLOGIST:	G.J. McNEILL, P.GEOL.
OPERATOR:	PARAMOUNT RESOURCES LTD.
WELL STATUS:	PLUGGED AND ABANDONED.

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

MARKERS & FORMATION TOPS

FORMATION	PROGNOSIS		SAMPLES		LOGS	
	M.D.	SUBSEA	M.D.	SUBSEA	M.D.	SUBSEA
SCATTER	N/A	N/A	295.0	-0.3	294.7	0.0
GARBUTT	N/A	N/A	393.0	-98.3	393.0	-98.3
GARBUTT RADIOACTIVE	N/A	N/A	???	???	530.8	-236.1
CHINKEH	N/A	N/A	576.5	-281.8	572.3	-277.6
PERMIAN	505.7	-211.0	606.0	-311.3	607.2	-312.5
KINDLE	N/A	N/A	659.0	-364.3	661.5	-366.8
MATTSON	N/A	N/A	686.5	-391.8	685.5	-390.8
MATTSON 2B	530.7	-236.0	—	—	—	—
MATTSON M3	580.7	-286.0	717.5	-422.8	717.1	-422.4
MATTSON M4	N/A	N/A	776.0	-481.3	776.2	-481.5
TOTAL DEPTH	605.7	-311.0	800.0	-505.3	800.3	-505.6

GROUND ELEVATION: 289.9M
K.B. ELEVATION: 294.7M
T.D. DRILLER: 800.0M
T.D. LOGGER: 800.3M

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

BIT RECORD

BIT NO.	SIZE (MM)	TYPE	SERIAL NO.	IN	OUT	METRES	HRS.	AVE. R.O.P.	CONDITION
1A	311	L-117	126641	0	120	120	4.25	28.2	4-2-1
2A	311	Ls115	203032	120	201	81	7.00	11.6	—
1	200	CH18XG	187387	201	652	451	58.50	7.7	8-8-0
2	200	CH47	176243	652	800	148	50.25	2.9	4-2-1

SURVEY SUMMARY

DEPTH (M)	DEGREE(S)
31	0.75
58	1.25
77	1.00
105	1.25
130	1.75
158	2.00
189	1.75
226	2.70
308	2.27
369	0.66
387	0.96
406	0.42
444	0.58
463	0.06
501	0.34
[illegible]	0.30
[illegible]	0.35
558	0.47
637	0.31
746	2.00
793	1.50

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

SAMPLE DESCRIPTIONS

200.0M - 205.0M: CLAYSTONE WITH MINOR AMOUNTS OF SHALE AND CALCITE CRYSTALS.
CLAYSTONE: WHITE, SOFT, AND SLIGHTLY SILTY.
SHALE: PREDOMINANTLY MEDIUM GRAY, AND PLATY TO SUB-BLOCKY.

205.0M - 210.0M: INTERBEDDED? CLAYSTONE AND SHALE, WITH MINOR AMOUNTS OF CALCITE CRYSTALS
CLAYSTONE: AS ABOVE.
SHALE: AS ABOVE.

210.0M - 230.0M: SHALE WITH MINOR AMOUNTS OF CLAYSTONE (BENTONITE?).
SHALE: AS ABOVE.
CLAYSTONE: AS ABOVE.

230.0M - 235.0M: SHALE WITH MINOR AMOUNTS OF CLAYSTONE, AND RARE CALCITE CRYSTALS.
SHALE: AS ABOVE.
CLAYSTONE: AS ABOVE.

235.0M - 240.0M: SHALE WITH MINOR AMOUNTS OF INTERBEDDED CLAYSTONE.
SHALE: MEDIUM GRAY, PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SLIGHTLY SILTY IN PART.
CLAYSTONE: AS ABOVE.

240.0M - 245.0M: SHALE WITH MINOR AMOUNTS OF INTERBEDDED CLAYSTONE.
SHALE: MEDIUM GRAY. SUB-BLOCKY TO BLOCKY. MICROMICACEOUS IN PART, SILTY IN PART, AND SLIGHTLY PYRITIC.
CLAYSTONE: AS ABOVE.

245.0M - 250.0M: SHALE WITH RARE TRACES OF SHELL FRAGMENTS.
SHALE: DARK GRAY. SUB-BLOCKY TO BLOCKY, SLIGHTLY SILTY, AND SLIGHTLY MICROMICACEOUS.

250.0M - 255.0M: SHALE: AS ABOVE.

255.0M - 260.0M: SHALE WITH FAIR AMOUNT INTERBEDDED BENTONITE? AND RARE CALCITE CRYSTALS.
SHALE: AS ABOVE.

260.0M - 265.0M: INTERBEDDED SHALE AND BENTONITE, WITH MINOR AMOUNTS OF CHERT.
SHALE: GENERALLY AS ABOVE, EXCEPT SLIGHTLY MORE SILTY.
CHERT: COARSE TO VERY COARSE GRAINED TO PEBBLE SIZE.
TRANSLUCENT PINK, GREEN, AND BROWN. GENERALLY WELL ROUNDED, AND FRACTURED IN PART

265.0M - 270.0M: SHALE WITH MINOR AMOUNTS OF BENTONITE?
SHALE: DARK GRAY. EARTHY, SUB-BLOCKY TO BLOCKY, AND SILTY.

270.0M - 275.0M: INTERBEDDED SHALE AND BENTONITE?
SHALE: GENERALLY AS ABOVE.

275.0M - 290.0M: INTERBEDDED SHALE AND BENTONITE WITH RARE QUARTZ GRAINS.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. SLIGHTLY MICRO-MICACEOUS, AND SLIGHTLY SILTY.
BENTONITE: OFF-WHITE, SOFT, AND ARGILLACEOUS TO SILTY.
QUARTZ GRAINS: MEDIUM TO COARSE GRAINED, AND CLEAR.

290.0M - 295.0M: SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

295.0M - 297.0M: BENTONITE: OFF-WHITE. SOFT TO MODERATELY HARD. SILTY AND VERY RARELY, SLIGHTLY GLAUCONITIC.

297.0M - 301.5M: SHALE: AS ABOVE.

301.5M - 305.0M: BENTONITE: OFF WHITE. SOFT TO MODERATELY HARD, AND SILTY.

305.0M - 310.0M: SAMPLE NOT CAUGHT - FLUSHING SHAKER SCREENS.

310.0M - 315.0M: INTERBEDDED SHALE, SILTSTONE, AND BENTONITE.
SHALE: AS ABOVE, WITH RARE TRACES OF GLAUCONITE.
BENTONITE: AS ABOVE.
SILTSTONE: LIGHT TAN TO LIGHT GRAY. QUARTZOSE IN PART, WITH MINOR AMOUNTS OF GLAUCONITE. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

315.0M - 318.0M: SILTSTONE: GENERALLY AS ABOVE. GRADES IN PART TO VERY FINE GRAINED SANDSTONE WITH DEPTH.

318.0M - 330.0M: SANDSTONE: SILT SIZED, TO VERY FINE GRAINED, AND LIGHT TAN TO LIGHT GRAY. QUARTZOSE, WELL MINOR AMOUNTS OF SCATTERED DARK MINERALS, AND MINOR AMOUNTS OF GLAUCONITE. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

330.0M - 333.0M: SANDSTONE: GENERALLY AS ABOVE, EXCEPT LESS GLAUCONITE THAN ABOVE. OCCASIONAL AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TAN HYDROCARBON STAIN.

333.0M - 334.0M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

334.0M - 336.0M: SANDSTONE: AS ABOVE.

336.0M - 337.0M: SHALE: AS ABOVE.

337.0M - 339.0M: SANDSTONE: AS ABOVE.

339.0M - 341.0M: SHALE: AS ABOVE.

341.0M - 343.0M: SANDSTONE: AS ABOVE.

343.0M - 344.0M: SHALE: AS ABOVE.

344.0M - 346.5M: SANDSTONE: AS ABOVE.

346.5M - 348.5M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE, AND DENSE. NO VISIBLE POROSITY.

348.5M - 350.0M: SANDSTONE: AS ABOVE.

350.0M - 351.0M: SHALE: AS ABOVE.

351.0M - 352.0M: SANDSTONE: AS ABOVE.

352.0M - 352.5M: SHALE: AS ABOVE.

352.5M - 355.0M: SANDSTONE: AS ABOVE.

355.0M - 365.0M: INTERBEDDED SILTSTONE AND SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SILTSTONE: WHITE TO LIGHT GRAY, SLIGHTLY TO MODERATELY ARGILLACEOUS, AND SLIGHTLY GLAUCONITIC. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

365.0M - 372.0M: INTERBEDDED SILTSTONE AND SHALE WITH MINOR AMOUNTS OF DOLOMITE.
SILTSTONE: AS ABOVE.
SHALE: AS ABOVE.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

372.0M - 373.5M: DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE TO MICRO-CRYSTALLINE, AND TIGHT.

373.5M - 374.0M: SHALE: AS ABOVE.

374.0M - 375.5M: SANDSTONE: SILT SIZED TO VERY FINE GRAINED. QUARTZOSE, AND GLAUCONITIC, WITH RARE SCATTERED DARK MINERALS. MODERATELY WELL INDURATED WITH CALCAREOUS CEMENT. NO VISIBLE POROSITY. MANY

SAMPLE DESCRIPTION, CONTINUED ...

AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN.

375.5M - 383.0M: SHALE AND MINOR AMOUNTS OF DOLOMITE.
SHALE: BLACK. SUB-BLOCKY TO BLOCKY. MICROMICACEOUS, GLAUCONITIC IN PART, AND SILTY IN PART.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, AND TIGHT.

383.0M - 388.0M: SANDSTONE: SILT SIZED TO VERY FINE GRAINED. QUARTZOSE. AND GLAUCONITIC, WITH RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW A QUESTIONABLE, EVEN, MEDIUM BROWN HYDROCARBON STAIN.

388.0M - 390.0M: SHALE, OCCURRENCES OF DOLOMITE, AND TRACES OF SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. SUB-BLOCKY TO BLOCKY. MICRO-MICACEOUS AND SILTY IN PART.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

390.0M - 393.0M: SANDSTONE: SILT SIZED TO PREDOMINANTLY VERY FINE GRAINED, ALSO FINE GRAINED IN PART. MEDIUM TO DARK BROWN. QUARTZOSE, GLAUCONITIC IN PART, AND ARGILLACEOUS IN PART, WITH RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON-CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW A QUESTIONABLE, EVEN, MEDIUM TO DARK BROWN HYDROCARBON STAIN. NO FLUORESCENCE, SOME SHOW A SLOW, PATCHY, LIGHT GREEN-YELLOW CUT FLUORESCENCE, AND A SLOW, WEAK, RIBBONY STREAMING CUT FLUORESCENCE.

393.0M - 401.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, SILTY IN PART, AND PYRITIC IN PART.

401.0M - 407.0M: SILTSTONE: LIGHT GRAY. QUARTZOSE, ARGILLACEOUS, AND GLAUCONITIC IN PART, WITH SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. APPEARS TIGHT.

407.0M - 410.0M: SHALE, ABUNDANT DOLOMITE, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

410.0M - 415.0M: SHALE: BLACK. SUB-BLOCKY TO BLOCKY. SILTY TO VERY SILTY.

415.0M - 420.0M: SHALE WITH OCCURRENCES OF DOLOMITE.
SHALE: AS ABOVE.

SAMPLE DESCRIPTION, CONTINUED ...

DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

420.0M - 435.0M: SHALE: GENERALLY AS ABOVE. GRADES TO BLACK SILTSTONE IN PART.

435.0M - 445.0M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: DARK GRAY, DARK GRAY-BROWN, AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART. GRADES TO SILTSTONE IN PART.

445.0M - 450.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: DARK GRAY, DARK GRAY-BROWN, AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART. GRADES TO SILTSTONE IN PART.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

450.0M - 455.0M: INTERBEDDED SHALE AND SILTSTONE.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.

455.0M - 465.0M: INTERBEDDED SHALE AND SILTSTONE, WITH TRACE AMOUNTS OF DOLOMITE.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, TO FINE CRYSTALLINE IN PART. APPEARS TIGHT.

465.0M - 470.0M: SHALE, ABUNDANT BENTONITE?, AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
BENTONITE: OFF WHITE, ARGILLACEOUS, AND SOFT.
DOLOMITE: AS ABOVE.

470.0M - 475.0M: INTERBEDDED SHALE AND SILTSTONE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
SILTSTONE: MEDIUM TO DARK BROWN, MEDIUM TO DARK GRAY. QUARTZOSE IN PART, AND GLAUCONITIC IN PART, WITH SCATTERED DARK MINERALS. NON CALCAREOUS, AND TIGHT.

475.0M - 480.0M: SHALE WITH MODERATELY AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SLIGHTLY GLAUCONITIC IN PART.
DOLOMITE: DARK BROWN, MICROCRYSTALLINE, AND TIGHT.

480.0M - 500.0M: SHALE, OCCURRENCES OF SILTSTONE, AND MINOR AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
SILTSTONE: DARK GRAY-BROWN. QUARTZOSE IN PART AND ARGILLACEOUS. WELL INDURATED WITH NON CALCAREOUS CEMENT, AND TIGHT.
DOLOMITE: GENERALLY AS ABOVE.

500.0M - 510.0M: SHALE WITH MINOR AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: LIGHT TO MEDIUM GRAY. PLATY, AND MICROMICACEOUS.
SILTSTONE: MEDIUM TO DARK GRAY/BROWN. QUARTZOSE IN PART, ARGILLACEOUS, AND GLAUCONITIC IN PART. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.
DOLOMITE: AS ABOVE.

510.0M - 520.0M: SHALE WITH MINOR AMOUNTS OF SILTSTONE AND DOLOMITE, AND RARE LOOSE QUARTZ GRAINS.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: AS ABOVE.
QUARTZ GRAINS: CLEAR, MEDIUM TO COARSE GRAINED, AND WELL ROUNDED TO SUB-ANGULAR.

520.0M - 525.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND SLIGHTLY MICROMICACEOUS.

525.0M - 535.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: DARK GRAY. PREDOMINANTLY PLATY TO SUB-BLOCKY IN PART, AND SLIGHTLY MICROMICACEOUS.

535.0M - 540.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE, SHELL FRAGMENTS, AND WHITE CLAY MINERAL.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

540.0M - 545.0M: SHALE, MINOR AMOUNTS OF DOLOMITE AND WHITE CLAY, AND RARE SANDSTONE AGGREGATES.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.
SANDSTONE: FINE GRAINED. QUARTZOSE WITH SCATTERED BIOTITE. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

545.0M - 550.0M: SHALE WITH MINOR AMOUNTS OF DOLOMITE AND WHITE CLAY.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

550.0M - 555.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE, SHELL FRAGMENTS, AND WHITE CLAY.

SAMPLE DESCRIPTION, CONTINUED ...

SHALE: DARK GRAY. PLATY TO SUB-BLOCKY, MICROMICACEOUS, AND RARELY SLIGHTLY PYRITIC.

555.0M - 560.0M: AS ABOVE WITH SLIGHTLY GREATER AMOUNT DOLOMITE.

560.0M - 576.5M: SHALE, OCCURRENCES OF DOLOMITE AND CLAY, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: MEDIUM BROWN. CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, AND TIGHT.

576.5M - 580.0M: SANDSTONE: VERY FINE TO FINE GRAINED. WHITE TO LIGHT GRAY. QUARTZOSE WITH ABUNDANT GLAUCONITE AND RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

580.0M - 581.5M: CHERT: MEDIUM TO VERY COARSE GRAINED. VARI-COLOURED, MASSIVE, AND FRACTURED.

581.5M - 582.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO TRANSLUCENT WHITE WITH SCATTERED VARI-COLOURED CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, PATCHY TO EVEN, LIGHT GRAY/BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

582.0M - 586.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO TRANSLUCENT WHITE WITH SCATTERED VARI-COLOURED CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, PATCHY TO EVEN, LIGHT GRAY/BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

586.0M - 587.5M: SHALE: AS ABOVE.

587.5M - 590.0M: SANDSTONE: VERY FINE TO MEDIUM GRAINED. QUARTZOSE, ARGILLACEOUS, WITH RARE SCATTERED DARK CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

590.0M - 592.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.

592.0M - 595.0M: SANDSTONE: VERY FINE TO PREDOMINANTLY FINE GRAINED. CLEAR TO MILKY-WHITE WITH SCATTERED LIGHT BROWN CHERT. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. NO SHOWS.

595.0M - 596.0M: SHALE: AS ABOVE.

596.0M - 601.5M: SANDSTONE: FINE TO MEDIUM GRAINED, MILKY WHITE TO LIGHT GRAY TO LIGHT TAN WITH SCATTERED DARK CHERTS AND GLAUCONITE. MODERATELY WELL TO WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

601.5M - 606.0M: SHALE: DARK GRAY, DARK BROWN-GRAY IN PART. PLATY TO SUB-BLOCKY. MICROMICACEOUS, GLAUCONITIC IN PART, SILTY IN PART, AND RARELY PYRITIC.

606.0M - 615.0M: CHERT: MEDIUM TO LARGER THAN VERY COARSE GRAINED. TRANSLUCENT WHITE, GRAY, AND BROWN. MASSIVE, AND FRACTURED.

615.0M - 616.5M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND VERY SLIGHTLY SILTY IN RARE PART.

616.5M - 620.5M: DOLOMITE: DARK GRAY-BROWN. MICROCRYSTALLINE, ARGILLACEOUS, GLAUCONITIC IN PART, AND TIGHT.

620.5M - 621.0M: CHERT: LIGHT TO MEDIUM TRANSLUCENT BROWN. MASSIVE AND FRACTURED.

621.0M - 622.5M: SANDSTONE: VERY FINE TO FINE GRAINED. QUARTZOSE, AND ARGILLACEOUS, WITH SCATTERED DARK MINERALS AND RARE GLAUCONITE. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

622.5M - 625.5M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND RARELY PYRITIC.

625.5M - 626.0M: DOLOMITE: AS ABOVE.

626.0M - 634.5M: CHERT: TRANSLUCENT LIGHT TO MEDIUM BROWN AND LIGHT TO MEDIUM GRAY. MASSIVE AND FRACTURED. RARE CHIPS SHOW GOOD, PATCHY, SUCROSIC, DARK BROWN HYDROCARBON STAIN ON ONE EDGE.

634.5M - 636.0M: SHALE: LIGHT, MEDIUM, DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-MICACEOUS AND SLIGHTLY PYRITIC IN RARE PART.

636.0M - 640.5M: CHERT: TRANSLUCENT LIGHT TO MEDIUM BROWN AND LIGHT TO MEDIUM GRAY. MASSIVE AND FRACTURED.

640.5M - 641.0M: SHALE: AS ABOVE - CAVINGS?

641.0M - 646.0M: CHERT: AS ABOVE, ALSO DARK GRAY IN PART. SOME WITH PYROBITUMEN SPOTTING?

646.0M - 646.5M: SHALE: AS ABOVE - CAVINGS?

646.5M - 652.0M: CHERT: AS ABOVE, ALSO DARK GRAY IN PART. SOME WITH PYROBITUMEN SPOTTING?

652.0M - 653.5M: SHALE WITH MINOR AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS AND SILTY, GRADING IN PART TO SILTSTONE.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

653.5M - 659.0M: CHERT: AS ABOVE, ALSO OPAQUE WHITE AND EARTHY IN PART.

659.0M - 665.0M: INTERBEDDED SHALE, SILTSTONE AND DOLOMITE WITH MINOR AMOUNTS OF CHERT.
SHALE: AS ABOVE.
SILTSTONE: MEDIUM TO DARK GRAY-BROWN, DARK GRAY, BLOCKY. MICROMICACEOUS AND DOLOMITIC IN PART.
DOLOMITE: DARK BROWN. MICROCRYSTALLINE, MODERATELY TO FAIRLY ARGILLACEOUS, SLIGHTLY TO MODERATELY CALCAREOUS, AND TIGHT.
CHERT: AS ABOVE - CAVINGS?

665.0M - 670.0M: INTERBEDDED DOLOMITE AND SILTSTONE, WITH MINOR AMOUNTS OF SHALE.
SILTSTONE: AS ABOVE.
DOLOMITE: AS ABOVE.
SHALE: AS ABOVE.

670.0M - 675.0M: INTERBEDDED DOLOMITE AND SHALE, WITH MINOR AMOUNTS OF CHERT.
DOLOMITE: DARK GRAY-BROWN. CRYPTOCRYSTALLINE TO FINE CRYSTALLINE. MODERATELY TO FAIRLY ARGILLACEOUS, SLIGHTLY TO MODERATELY CALCAREOUS, AND TIGHT.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?

675.0M - 686.5M: INTERBEDDED DOLOMITE AND SHALE, WITH MINOR AMOUNTS OF LIMESTONE AND SHELL FRAGMENTS.
DOLOMITE: AS ABOVE.
SHALE: DARK GRAY-BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
LIMESTONE: LIGHT GRAY-WHITE. SOFT, CHALKY, AND SLIGHTLY ARGILLACEOUS.

686.5M - 690.0M: SANDSTONE: SILT SIZED, TO VERY FINE GRAINED, TO FINE GRAINED IN RARE PART.. QUARTZOSE, AND CLEAR TO MILKY WHITE WITH RARE SCATTERED DARK TRANSLUCENT GRAINS. AGGREGATES ARE MODERATELY TO WELL INDURATED WITH CALCAREOUS CEMENT AND HAVE TRACES OF POOR VISIBLE INTERGRANULAR POROSITY. ALL SHOW A PREDOMINANTLY PATCHY, TO EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, A PATCHY TO EVEN, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, EVEN, GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, RIBBONY, MILKY-YELLOW

SAMPLE DESCRIPTION, CONTINUED ...

STREAMING CUT FLUORESCENCE.

690.0M - 692.5M: SHALE: AS ABOVE - CAVINGS?

692.5M - 698.0M: SANDSTONE: PREDOMINANTLY VERY FINE TO FINE GRAINED, ALSO MEDIUM GRAINED IN RARE PART. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT - LOOSE GRAINS ARE RARE. RARE AGGREGATES HAVE TRACES OF POOR VISIBLE INTERGRANULAR POROSITY. ALL SHOW A PATCHY TO EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, NO FLUORESCENCE, SOME ALSO SHOW A SLOW, PATCHY TO EVEN, LIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A PATCHY, BRIGHT GRAY-YELLOW DRY CUT FLUORESCENCE.

698.0M - 701.0M: SHALE WITH MINOR AMOUNTS OF LIMESTONE AND SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
LIMESTONE: AS ABOVE.

701.0M - 705.0M: SANDSTONE: PREDOMINANTLY VERY FINE TO FINE GRAINED, ALSO SILT SIZED AND MEDIUM GRAINED IN RARE PART. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY WELL TO WELL INDURATED WITH CALCAREOUS CEMENT - MINOR AMOUNTS OF LOOSE GRAINS. NO VISIBLE POROSITY. ALL AGGREGATES SHOW AN EVEN, MEDIUM BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, PATCHY TO EVEN, DULL GRAY-YELLOW CUT FLUORESCENCE, AND A WEAK, IMMEDIATE, BRIGHT MILKY-YELLOW STREAMING CUT FLUORESCENCE.

705.0M - 706.0M: SHALE: DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND PYRITIC AND SILTY IN RARE PART.

706.0M - 714.0M: SANDSTONE: VERY FINE TO FINE GRAINED, TO FINE TO MEDIUM GRAINED WITH DEPTH. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY FRIABLE TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. ALL SHOW A PATCHY, MEDIUM TO DARK BROWN HYDROCARBON STAIN, A PATCHY, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, PATCHY TO EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A SLOW, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

714.0M - 717.5M: SHALE WITH MINOR AMOUNTS OF CHERT AND SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
CHERT: AS ABOVE - CAVINGS?

717.5M - 723.0M: SANDSTONE: VERY FINE TO FINE GRAINED, TO MEDIUM GRAINED WITH DEPTH. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE

SAMPLE DESCRIPTION, CONTINUED ...

MODERATELY FRIABLE TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. APPEARS TO BECOME MORE FRIABLE WITH DEPTH. ALL SHOW A PATCHY, LIGHT TO DARK BROWN HYDROCARBON STAIN, OCCASIONAL AGGREGATES SHOW AN EVEN, DULL YELLOW FLUORESCENCE, MOST SHOW AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

723.0M - 726.5M: SHALE, MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND GLAUCONITIC IN PART.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE TO MICRO-CRYSTALLINE AND TIGHT.

726.5M - 729.0M: SANDSTONE: VERY FINE TO FINE GRAINED, WITH LOOSE GRAINS TO MEDIUM GRAINED. QUARTZOSE, AND CLEAR TO FROSTED. AGGREGATES ARE MODERATELY WELL TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. ALL SHOW A PATCHY TO EVEN, LIGHT TO DARK BROWN HYDROCARBON STAIN, AN EVEN, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, EVEN, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, WEAK, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

729.0M - 733.5M: SHALE WITH MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACES OF CHERT.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?

773.5M - 737.0M: SANDSTONE: AS ABOVE. SHOWS AS ABOVE.

737.0M - 740.0M: SHALE WITH MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACES OF CHERT AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE AND TIGHT.

740.0M - 741.5M: SILTSTONE: MEDIUM GRAY-BROWN. QUARTZOSE IN PART. WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT. NO VISIBLE POROSITY.

741.5M - 743.0M: SHALE: DARK GRAY. PLATY, MICROMICACEOUS, SILTY IN PART, AND GLAUCONITIC IN RARE PART.

743.0M - 744.0M: SANDSTONE: VERY FINE TO FINE GRAINED. QUARTZOSE AND MILKY-WHITE. AGGREGATES WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND ARE SLIGHTLY CALCAREOUS. NO VISIBLE POROSITY.

744.0M - 745.0M: SHALE: AS ABOVE.

745.0M - 747.0M: SANDSTONE: VERY FINE TO FINE GRAINED, LIGHT GRAY AGGREGATES. QUARTZOSE, CLEAR TO FROSTED, AND ARGILLACEOUS. AGGREGATES ARE WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT.

747.0M - 748.5M: SHALE: GENERALLY AS ABOVE.

748.5M - 750.0M: SANDSTONE: FINE GRAINED, TO MEDIUM GRAINED IN PART, MILKY-WHITE AGGREGATES WITH OCCASIONAL MEDIUM - COARSE GRAINED, WELL ROUNDED, VARI-COLOURED CHERT AND CLEAR QUARTZ GRAINS. AGGREGATES ARE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH SILICA CEMENT, AND OCCASIONALLY HAVE FAIR VISIBLE INTERGRANULAR POROSITY. MOST SHOW AN EVEN, LIGHT TAN HYDROCARBON STAIN, A VERY FAINT, PATCHY GRAY FLUORESCENCE, AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A SLOW, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

750.0M - 751.0M: SHALE: GENERALLY AS ABOVE.

751.0M - 754.0M: SANDSTONE: PREDOMINANTLY FINE TO MEDIUM GRAINED, TO COARSE GRAINED IN RARE PART. CLEAR TO FROSTED QUARTZ. PREDOMINANTLY UNCONSOLIDATED. AGGREGATES ARE FRIABLE TO MODERATELY WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT, AND APPEAR TIGHT. MANY LOOSE GRAINS AND ALL AGGREGATES SHOW A PATCHY, MEDIUM TO DARK BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, EVEN, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, FAIR, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

754.0M - 760.0M: SHALE, ABUNDANT SANDSTONE, MINOR AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
SANDSTONE: AS ABOVE - CAVINGS?
CHERT: AS ABOVE - CAVINGS?

760.0M - 762.5M: AS ABOVE WITH TRACE AMOUNTS OF DOLOMITE.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

762.5M - 765.5M: SANDSTONE: PREDOMINANTLY FINE TO MEDIUM GRAINED. CLEAR TO FROSTED, AND PREDOMINANTLY UNCONSOLIDATED. AGGREGATES ARE MODERATELY WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. MOST SHOW A SPOTTY, DARK BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, PATCHY, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, WEAK, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

765.5M - 769.0M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-

SAMPLE DESCRIPTION, CONTINUED ...

MICACEOUS, AND SILTY IN PART.
CHERT: AS ABOVE - CAVINGS?
SILTSTONE: DARK GRAY-BROWN. SUB-BLOCKY. WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEARS TIGHT.

769.0M - 770.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

770.0M - 771.5M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE.
SILTSTONE: AS ABOVE..
DOLOMITE: DARK GRAY, CRYPTOCRYSTALLINE, AND TIGHT.

771.5M - 773.5M: SANDSTONE: AS ABOVE.

773.5M - 776.0M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: DARK GRAY, CRYPTOCRYSTALLINE, AND TIGHT.

776.0M - 778.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

780.0M - 781.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

781.0M - 783.0M: SHALE WITH OCCURRENCES OF DOLOMITE.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

783.0M - 784.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

784.0M - 785.5M: SHALE, OCCURRENCES OF CLAY, AND TRACE AMOUNTS OF CHERT, DOLOMITE, AND SHELL FRAGMENTS.
SHALE: AS ABOVE.
CHERT: AS ABOVE.

SAMPLE DESCRIPTION, CONTINUED ...

DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE AND TIGHT.

785.5M - 787.5M: SANDSTONE: AS ABOVE.

787.5M - 792.5M: SHALE WITH OCCURRENCES OF SANDSTONE, CLAY, CHERT AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-MICACEOUS, AND SILTY IN RARE PART.
SANDSTONE: AS ABOVE - CAVINGS?
CHERT: AS ABOVE - CAVINGS?
DOLOMITE: MEDIUM BROWN, CRYPTOCRYSTALLINE AND TIGHT.

792.5M - 793.5M: SANDSTONE: VERY FINE GRAINED, AND LIGHT BROWN. QUARTZOSE IN PART, ARGILLACEOUS IN PART, AND RARELY GLAUCONITIC. AGGREGATES ARE WELL INDURATED WITH CALCAREOUS CEMENT AND APPEAR TIGHT. ALL SHOW A QUESTIONABLE, EVEN, LIGHT BROWN HYDROCARBON STAIN.

793.5M - 797.0M: SHALE WITH TRACES OF DOLOMITE AND CHERT.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN RARE PART.
CHERT: AS ABOVE - CAVINGS.

797.0M - 798.5M: SANDSTONE: VERY FINE TO FINE GRAINED AND LIGHT RED-BROWN. QUARTZOSE, PYRITIC IN RARE PART, AND WELL INDURATED WITH CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW AN EVEN, VERY LIGHT TAN-RED, AND RARELY A PATCHY DARK BROWN HYDROCARBON STAIN. SOME SHOW A PATCHY TO EVEN DULL YELLOW FLUORESCENCE; MOST AN EVEN, BRIGHT YELLOW CUT FLUORESCENCE, AND A MODERATELY FAST, STRONG, RIBBONY TO MASSIVE, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

798.5M - 800.0M: SHALE: LIGHT GREEN-GRAY. SUB-BLOCKY, MICROMICACEOUS, AND SLIGHTLY CALCAREOUS.

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

GEOLOGICAL SUMMARY

THIS WELL WAS SPUDDED ON MARCH 8, 2003 AND DRILLING WAS COMPLETED ON MARCH 17, 2003. IT WAS DRILLED TO EXPLORE THE HYDROCARBON POTENTIAL OF THE MATTSON 2B AND M3 SANDS. FIVE METRE SAMPLES WERE CAUGHT, WASHED, AND VIALED FOR THE N.E.B. FROM 20 METRES TO TOTAL DEPTH. IN ADDITION, 10 METRE SAMPLES WERE CAUGHT AND BAGGED, AND TURNED IN TO THE N.E.B. FIVE METRE SAMPLES WERE CAUGHT, WASHED, AND DESCRIBED FOR THE CLIENT, FROM 200 METRES TO TOTAL DEPTH. A PORTABLE GAS DETECTOR WAS INSTALLED AND MONITORED FROM DRILL OUT TO TOTAL DEPTH. ALL DEPTHS REFERRED TO IN THIS SUMMARY ARE LOGGED DEPTHS RELATIVE TO THE KELLY BUSHING ELEVATION.

THE MAIN ZONE OF INTEREST, THE MATTSON 2B, WAS ABSENT AT THIS LOCATION.

THE MATTSON M3 WAS INTERSECTED AT 717.1 METRES. THESE SANDS WERE GENERALLY VERY FINE TO FINE GRAINED, BUT APPEARED TO GRADE TO MEDIUM GRAINED WITH DEPTH. THEY WERE QUARTZOSE, AND CLEAR TO MILKY-WHITE IN COLOUR. THE AGGREGATES PRESENT IN THESE SAMPLES WERE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH A SILICA CEMENT, AND HAD NO VISIBLE INTERGRANULAR POROSITY. THEY APPEARED TO BECOME MORE FRIABLE WITH DEPTH. THEY SHOWED A PATCHY, LIGHT TO DARK BROWN HYDROCARBON STAIN. OCCASIONAL AGGREGATES SHOWED AN EVEN, DULL YELLOW FLUORESCENCE, AND MOST ALSO SHOWED AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE. THE GAS DETECTOR READINGS RANGED FROM 0%, AT THE TOP OF THIS INTERVAL, TO APPROXIMATELY 1.5% NEAR THE MIDDLE OF THESE SANDS.

SUBSEQUENT TO THE DRILLING AND LOGGING OPERATIONS, DRILLSTEM TESTS WERE CONDUCTED, AND THIS WELL WAS PLUGGED AND ABANDONED.

THE ABOVE IS A BRIEF GEOLOGICAL SUMMARY OUTLINING THE MAIN ZONES OF HYDROCARBON POTENTIAL AND / OR INTEREST THAT WERE ENCOUNTERED IN THIS WELL BORE.

SUBMITTED CORDIALLY,

G.J. McNEILL, P.GEOL. / L. HORBACK, P. GEOL.

PROFESSIONAL GEOLOGIST ALBERTA

LITHOLOGY STRIP LOG
WellSight Systems
Scale 1:240 (5"=100') Metric

Well Name: PARAMOUNT ET AL MCKAY LAKES K-36
Location: 300K366020123150
Licence Number: 1998
Spud Date: 14:00hrs, Mar 8/03
Surface Coordinates: 60 18' 45.560" / 123 21' 58.379"

Region: Ft. Liard, N.W.T.
Drilling Completed: 02:40hrs, Mar 17

Bottom Hole Coordinates:

Ground Elevation (m): 289.9m
Logged Interval (m): 200m To: 800m
Formation: Mattson
Type of Drilling Fluid: Floc water / Gel-Chem

K.B. Elevation (m): 294.7m
Total Depth (m): 800m

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.wellsight.com

OPERATOR
Company: PARAMOUNT RESOURCES LTD.
Address: 888 - 3rd Street S.W.
Calgary, AB. T2P 5C5

GEOLOGIST
Name: G.J. (Jeff) McNEILL
Company: T.I.H. CONSULTING LTD.
Address: 1602 - 5th Street N.E.
Calgary, AB. T2E 7W3
Phone: (403) 233-7720

Comments
Ran 17 jts, 219.1mm, 35.7Kg/m, K-55, 8rd, ST&C csg. Landed @ 200.9m K.B. Cemented w/ 15 tonnes 0:1:0 class "G" + 3% CaCl2. Had 2.0m3 returns to surface. Plug down @ 16:00 hrs, Mar 10/03.

ROCK TYPES

Anhy	Coal	Lmst	Shcol		Blank
Bent	Congl	Meta	Shgy		
Brec	Dol	Mrst	Sltst		
Cht	Gyp	Salt	Ss		
Clyst	Igne	Shale	Till		

ACCESSORIES

MINERAL
- A Anhy
- Ar Argil
- Arg Arg
- Bent Bent
- Bit Bit
- Brecfrag Brecfrag
- Calc Calc
- Ch Ch
- Chtdk Chtdk
- Chtlt Chtlt
- Dol Dol
- Feldspar Feldspar
- Ferrpel Ferrpel
- Ferr Ferr
- Glau Glau
- Gyp Gyp
- Hvymin Hvymin
- Kaol Kaol
- Marl Marl
- Mineol Mineol
- Nodule Nodule
- Phos Phos
- Pyr Pyr
- Salt Salt
- Sandy Sandy
- Slt Slt
- Sil Sil
- Sulphur Sulphur
- Tuff Tuff

FOSSIL
- Algae Algae
- Amph Amph
- Belm Belm
- Bioclst Bioclst
- Brach Brach
- Bryozoa Bryozoa
- Cephal Cephal
- Coral Coral
- Crin Crin
- Echin Echin
- Fish Fish
- Foram Foram
- Fossil Fossil
- Gastro Gastro
- Oolilo Oolilo
- Ostra Ostra
- Pelec Pelec
- Pellet Pellet
- Pisolite Pisolite
- Plant Plant
- Strom Strom

STRINGER
- Anhy Anhy
- Arg Arg
- Bent Bent
- Coal Coal
- Dol Dol
- Gyp Gyp
- Ls Ls
- Mrst Mrst
- Sltstrg Sltstrg
- Sststrg Sststrg

TEXTURE
- Boundst Boundst
- Chalky Chalky
- Crystln Crystln
- Earthy Earthy
- Finecrn Finecrn
- Grainst Grainst
- Lithagr Lithagr
- Microxln Microxln
- Mudst Mudst
- Packst Packst
- Wackest Wackest

OTHER SYMBOLS

POROSITY TYPE
- E Earthy
- F Fenest
- Fx Fracture
- I Intxr
- M Moldic
- O Organic
- P Pinpoint
- V Vuggy

SORTING
- W Well
- M Moderate
- P Poor

ROUNDING
- R Rounded
- Sbrnd Subrnd
- Sbang Subang
- A Angular

OIL SHOWS
- Even Even

- Spotted Spotted
- Quest Questionable
- Dead Dead

EVENTS
- RR RR
- SS Sidewall

INTERVALS
- None None
- Core Core
- Dst Dst

Curve Track 1
ROP (m/min)
Gas (%)

Depth (metres)
Porosity
Lithology
Grain Size
Sorting
Geological Descriptions

ROP (perm)
Gas (%)

Drill out w/ bit #1 @ 11.50hrs, Mar 11, 2003

ROP (perm)
Gas (%)

Survey 2.5

WOB: 5-10kN
RPM: 60-70
SPM: 140-150
PP: 5800kPa

Survey 2.5

WOB: 10-15kN
RPM: 60
SPM: 140
PP: 5800kPa

Survey 2.5
Survey #1
Inc: 82.5
Azi: 61.9

28.50hrs, Mar 14/03

Survey 2.5

ROP (perm)
Gas (%)

Survey
Inc: 0.00
Azi: 61.9

Survey
Inc: 1.00
Azi: 61.9

22.00 hrs, Mar 12/03

ROP (perm)
Gas (%)

Survey
Inc: 2.00
Azi: 61.9

ROP (perm)
Gas (%)

Survey
Inc: 3.00
Azi: 61.9

Survey
Inc: 4.00
Azi: 61.9

ROP (perm)
Gas (%)

Survey
Inc: 5.00
Azi: 61.9

09.00 hrs, Mar 13/03

ROP (perm)
Gas (%)

Change over to PDC
Stabex bit #2

ROP (perm)
Gas (%)

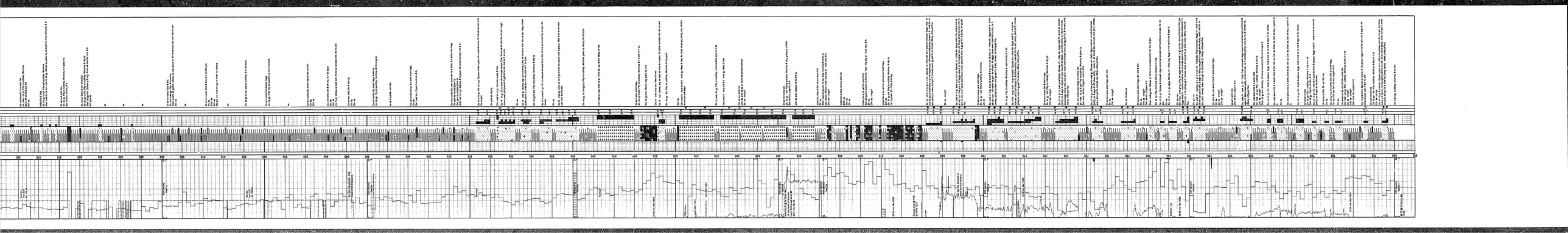
Change out dryer on PDC

Sh: m-vf gr, tr ltn to lt gy. Glcnse, w incr amts sub dk mins, & incr amts glaun. Vf lnd w/ calc cnt. No vis por.

Sh: m-vf gr, tr ltn to lt gy. Glcnse, w incr amts sub dk mins, & incr amts glaun. Vf lnd w/ calc cnt. No vis por.

Sh: med-dk gy, pty-subblky, micmica ip, vfly lp

Sh: m-vf gr, tr ltn to lt gy. Glcnse, w incr amts sub dk mins, & incr amts glaun. Vf lnd w/ calc cnt. No vis por.



DRILL STEM TESTS

DST #1 TYPE: Inflate –Straddle

Formation:	Mattson formation, NGTS, very week blow, reset for DST#2
TOP:	714 m/KB
BOTTOM:	729 m/KB
OIL RATE:	NO Oil
GAS RATE:	NGTS
CONDENSATE:	No Condensate
WATER RATE:	0.0 m^3/d
OIL GRAVITY:	N/A
Water Salinity:	N/A
Recovery ISIP:	7810 kPa
Recovery FSIP:	7760 kPa

DST #2 TYPE: Inflate –Straddle

Formation:	Mattson formation, no blow, recovered 161m muddy water
TOP:	696 m/KB
BOTTOM:	711 m/KB
OIL RATE:	NO Oil
GAS RATE:	NGTS
CONDENSATE:	No Condensate
WATER RATE:	0.0 m^3/d
OIL GRAVITY:	N/A
Water Salinity:	N/A
Recovery ISIP:	7510 kPa
Recovery FSIP:	7520 kPa

DST #3 TYPE: Inflate -Straddle

Formation:	Mattson formation, very week blow, recovered 85m drilling mud.
TOP:	684 m/KB
BOTTOM:	711 m/KB
OIL RATE:	NO Oil
GAS RATE:	NGTS
CONDENSATE:	No Condensate
WATER RATE:	0.0 m^3/d
OIL GRAVITY:	N/A
Water Salinity:	N/A
Recovery ISIP:	390 kPa
Recovery FSIP:	1340 kPa

SUBSURFACE PRESSURE MEASUREMENTS

DST Number: 3
Well: Paramount et al Mackay Lakes
Location: K-36 60-20-120-15
Date Of Test: 03/03/18 14:49:55
Test Interval: 684.00 - 711.09
Probe Serial #: 20844
Data File:
Time Interval: Fast Sample:

aramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

tem #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
1	03/03/18 16:00:55	0:00:57	12.08	0.0	51	03/03/18 16:50:55	0:50:57	13.40	11.0
2	03/03/18 16:01:55	0:01:57	12.03	0.0	52	03/03/18 16:51:55	0:51:57	13.51	10.6
3	03/03/18 16:02:55	0:02:57	11.97	0.0	53	03/03/18 16:52:55	0:52:57	13.60	10.3
4	03/03/18 16:03:55	0:03:57	11.90	0.0	54	03/03/18 16:53:55	0:53:57	13.71	10.6
5	03/03/18 16:04:55	0:04:57	11.84	0.0	55	03/03/18 16:54:55	0:54:57	13.83	10.3
6	03/03/18 16:05:55	0:05:57	11.79	0.0	56	03/03/18 16:55:55	0:55:57	13.96	9.9
7	03/03/18 16:06:55	0:06:57	11.75	0.0	57	03/03/18 16:56:55	0:56:57	14.10	10.2
8	03/03/18 16:07:55	0:07:57	11.68	0.0	58	03/03/18 16:57:55	0:57:57	14.19	10.2
9	03/03/18 16:08:55	0:08:57	11.70	4.7	59	03/03/18 16:58:55	0:58:57	14.26	9.9
10	03/03/18 16:09:55	0:09:57	11.61	5.2	60	03/03/18 16:59:55	0:59:57	14.35	9.6
11	03/03/18 16:10:55	0:10:57	11.51	5.1	61	03/03/18 17:00:55	1:00:57	14.41	10.2
12	03/03/18 16:11:55	0:11:57	11.35	5.6	62	03/03/18 17:01:55	1:01:57	14.49	12.1
13	03/03/18 16:12:55	0:12:57	11.18	5.4	63	03/03/18 17:02:55	1:02:57	14.60	13.2
14	03/03/18 16:13:55	0:13:57	11.06	5.4	64	03/03/18 17:03:55	1:03:57	14.72	12.9
15	03/03/18 16:14:55	0:14:57	10.92	5.4	65	03/03/18 17:04:55	1:04:57	14.81	13.7
16	03/03/18 16:15:55	0:15:57	10.85	4.4	66	03/03/18 17:05:55	1:05:57	14.86	13.6
17	03/03/18 16:16:55	0:16:57	10.79	4.8	67	03/03/18 17:06:55	1:06:57	14.93	15.1
18	03/03/18 16:17:55	0:17:57	10.75	5.2	68	03/03/18 17:07:55	1:07:57	15.03	13.7
19	03/03/18 16:18:55	0:18:57	10.74	5.2	69	03/03/18 17:08:55	1:08:57	15.17	13.7
20	03/03/18 16:19:55	0:19:57	10.68	5.6	70	03/03/18 17:09:55	1:09:57	15.33	15.1
21	03/03/18 16:20:55	0:20:57	10.69	6.3	71	03/03/18 17:10:55	1:10:57	15.46	14.7
22	03/03/18 16:21:55	0:21:57	10.70	6.2	72	03/03/18 17:11:55	1:11:57	15.56	14.1
23	03/03/18 16:22:55	0:22:57	10.71	6.7	73	03/03/18 17:12:55	1:12:57	15.67	14.6
24	03/03/18 16:23:55	0:23:57	10.74	6.7	74	03/03/18 17:13:55	1:13:57	15.75	14.6
25	03/03/18 16:24:55	0:24:57	10.77	6.7	75	03/03/18 17:14:55	1:14:57	15.85	14.3
26	03/03/18 16:25:55	0:25:57	10.79	7.4	76	03/03/18 17:15:55	1:15:57	15.99	16.2
27	03/03/18 16:26:55	0:26:57	10.84	7.7	77	03/03/18 17:16:55	1:16:57	16.14	15.7
28	03/03/18 16:27:55	0:27:57	10.93	12.7	78	03/03/18 17:17:55	1:17:57	16.27	16.3
29	03/03/18 16:28:55	0:28:57	11.01	9.1	79	03/03/18 17:18:55	1:18:57	16.39	16.7
30	03/03/18 16:29:55	0:29:57	11.11	8.6	80	03/03/18 17:19:55	1:19:57	16.55	16.9
31	03/03/18 16:30:55	0:30:57	11.23	8.8	81	03/03/18 17:20:55	1:20:57	16.70	18.6
32	03/03/18 16:31:55	0:31:57	11.33	8.4	82	03/03/18 17:21:55	1:21:57	16.89	19.7
33	03/03/18 16:32:55	0:32:57	11.44	11.8	83	03/03/18 17:22:55	1:22:57	17.05	18.6
34	03/03/18 16:33:55	0:33:57	11.52	8.7	84	03/03/18 17:23:55	1:23:57	17.16	21.5
35	03/03/18 16:34:55	0:34:57	11.60	8.9	85	03/03/18 17:24:55	1:24:57	17.35	20.9
36	03/03/18 16:35:55	0:35:57	11.68	9.2	86	03/03/18 17:25:55	1:25:57	17.51	20.4
37	03/03/18 16:36:55	0:36:57	11.78	9.0	87	03/03/18 17:26:55	1:26:57	17.59	18.5
38	03/03/18 16:37:55	0:37:57	11.92	10.2	88	03/03/18 17:27:55	1:27:57	17.75	19.9
39	03/03/18 16:38:55	0:38:57	12.04	9.7	89	03/03/18 17:28:55	1:28:57	17.91	18.8
40	03/03/18 16:39:55	0:39:57	12.13	9.9	90	03/03/18 17:29:55	1:29:57	18.10	23.6
41	03/03/18 16:40:55	0:40:57	12.22	9.4	91	03/03/18 17:30:55	1:30:57	18.31	25.3
42	03/03/18 16:41:55	0:41:57	12.32	10.8	92	03/03/18 17:31:55	1:31:57	18.44	24.7
43	03/03/18 16:42:55	0:42:57	12.44	10.4	93	03/03/18 17:32:55	1:32:57	18.56	21.2
44	03/03/18 16:43:55	0:43:57	12.59	9.9	94	03/03/18 17:33:55	1:33:57	18.72	21.6
45	03/03/18 16:44:55	0:44:57	12.75	9.7	95	03/03/18 17:34:55	1:34:57	18.90	22.8
46	03/03/18 16:45:55	0:45:57	12.89	11.3	96	03/03/18 17:35:55	1:35:57	19.05	22.9
47	03/03/18 16:46:55	0:46:57	13.01	10.6	97	03/03/18 17:36:55	1:36:57	19.20	23.0
48	03/03/18 16:47:55	0:47:57	13.10	10.3	98	03/03/18 17:37:55	1:37:57	19.35	21.0
49	03/03/18 16:48:55	0:48:57	13.17	10.1	99	03/03/18 17:38:55	1:38:57	19.64	20.0
50	03/03/18 16:49:55	0:49:57	13.29	11.3	100	03/03/18 17:39:55	1:39:57	19.80	21.4

Parmount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
101	03/03/18 17:40:55	1:40:57	20.04	21.3	183	03/03/18 19:02:55	3:02:57	29.77	22.7
102	03/03/18 17:41:55	1:41:57	20.24	21.9	184	03/03/18 19:03:55	3:03:57	29.80	22.3
[redacted]	03/03/18 17:42:55	1:42:57	20.41	21.5	185	03/03/18 19:04:55	3:04:57	29.82	21.9
[redacted]	03/03/18 17:43:55	1:43:57	20.71	21.4	186 B	03/03/18 19:05:55	3:05:57	29.84	21.9
105	03/03/18 17:44:55	1:44:57	20.95	22.5	187	03/03/18 19:06:55	3:06:57	29.85	22.4
106	03/03/18 17:45:55	1:45:57	21.12	21.8	188	03/03/18 19:07:55	3:07:57	29.88	50.8
107	03/03/18 17:46:55	1:46:57	21.29	22.9	189	03/03/18 19:08:55	3:08:57	29.89	56.0
108	03/03/18 17:47:55	1:47:57	21.55	23.7	190	03/03/18 19:09:55	3:09:57	29.91	59.3
109	03/03/18 17:48:55	1:48:57	21.76	24.2	191	03/03/18 19:10:55	3:10:57	29.93	62.2
110	03/03/18 17:49:55	1:49:57	22.06	23.0	192	03/03/18 19:11:55	3:11:57	29.94	65.0
111	03/03/18 17:50:55	1:50:57	22.27	23.4	193	03/03/18 19:12:55	3:12:57	29.94	67.0
112	03/03/18 17:51:55	1:51:57	22.45	25.3	194	03/03/18 19:13:55	3:13:57	29.97	69.0
113	03/03/18 17:52:55	1:52:57	22.63	24.4	195	03/03/18 19:14:55	3:14:57	29.98	71.0
114	03/03/18 17:53:55	1:53:57	22.88	24.2	196 B1	03/03/18 19:15:55	3:15:57	30.01	72.9
115	03/03/18 17:54:55	1:54:57	23.01	24.1	197	03/03/18 19:16:55	3:16:57	30.03	74.7
116	03/03/18 17:55:55	1:55:57	23.19	23.5	198	03/03/18 19:17:55	3:17:57	30.04	76.5
117	03/03/18 17:56:55	1:56:57	23.44	24.4	199	03/03/18 19:18:55	3:18:57	30.06	76.9
118	03/03/18 17:57:55	1:57:57	23.71	24.1	200	03/03/18 19:19:55	3:19:57	30.08	76.8
119	03/03/18 17:58:55	1:58:57	23.85	23.7	201	03/03/18 19:20:55	3:20:57	30.11	76.3
120	03/03/18 17:59:55	1:59:57	24.02	23.4	202	03/03/18 19:21:55	3:21:57	30.12	76.6
121	03/03/18 18:00:55	2:00:57	24.28	24.5	203	03/03/18 19:22:55	3:22:57	30.14	76.5
122	03/03/18 18:01:55	2:01:57	24.47	24.0	204	03/03/18 19:23:55	3:23:57	30.17	76.4
123	03/03/18 18:02:55	2:02:57	24.65	23.4	205	03/03/18 19:24:55	3:24:57	30.19	76.9
124	03/03/18 18:03:55	2:03:57	24.93	23.8	206	03/03/18 19:25:55	3:25:57	30.22	76.8
125	03/03/18 18:04:55	2:04:57	25.15	24.5	207	03/03/18 19:26:55	3:26:57	30.22	76.8
126	03/03/18 18:05:55	2:05:57	25.34	24.1	208	03/03/18 19:27:55	3:27:57	30.25	76.7
127	03/03/18 18:06:55	2:06:57	25.56	24.0	209	03/03/18 19:28:55	3:28:57	30.28	76.6
128	03/03/18 18:07:55	2:07:57	25.69	24.5	210	03/03/18 19:29:55	3:29:57	30.28	76.9
129	03/03/18 18:08:55	2:08:57	25.88	23.9	211	03/03/18 19:30:55	3:30:57	30.30	76.7
130	03/03/18 18:09:55	2:09:57	26.11	24.4	212	03/03/18 19:31:55	3:31:57	30.31	77.0
131	03/03/18 18:10:55	2:10:57	26.30	23.8	213	03/03/18 19:32:55	3:32:57	30.32	76.9
132	03/03/18 18:11:55	2:11:57	26.46	23.3	214	03/03/18 19:33:55	3:33:57	30.34	76.9
133	03/03/18 18:12:55	2:12:57	26.55	23.0	215	03/03/18 19:34:55	3:34:57	30.34	76.9
134	03/03/18 18:13:55	2:13:57	26.65	22.7	216	03/03/18 19:35:55	3:35:57	30.36	76.8
135	03/03/18 18:14:55	2:14:57	26.82	23.6	217	03/03/18 19:36:55	3:36:57	30.37	76.9
136	03/03/18 18:15:55	2:15:57	26.98	23.1	218	03/03/18 19:37:55	3:37:57	30.37	76.6
137	03/03/18 18:16:55	2:16:57	27.09	23.0	219	03/03/18 19:38:55	3:38:57	30.39	76.7
138	03/03/18 18:17:55	2:17:57	27.19	22.5	220	03/03/18 19:39:55	3:39:57	30.39	76.7
139	03/03/18 18:18:55	2:18:57	27.31	22.1	221	03/03/18 19:40:55	3:40:57	30.40	76.8
140	03/03/18 18:19:55	2:19:57	27.46	21.7	222	03/03/18 19:41:55	3:41:57	30.41	76.8
141	03/03/18 18:20:55	2:20:57	27.63	22.1	223	03/03/18 19:42:55	3:42:57	30.42	76.8
142	03/03/18 18:21:55	2:21:57	27.74	22.2	224	03/03/18 19:43:55	3:43:57	30.43	76.7
[redacted]	03/03/18 18:22:55	2:22:57	27.84	21.5	225	03/03/18 19:44:55	3:44:57	30.44	76.7
144	03/03/18 18:23:55	2:23:57	27.87	21.9	226	03/03/18 19:45:55	3:45:57	30.44	76.7
145	03/03/18 18:24:55	2:24:57	27.95	22.0	227	03/03/18 19:46:55	3:46:57	30.45	76.7
146	03/03/18 18:25:55	2:25:57	28.08	22.3	228	03/03/18 19:47:55	3:47:57	30.45	76.7
147	03/03/18 18:26:55	2:26:57	28.18	24.3	229	03/03/18 19:48:55	3:48:57	30.47	76.6
148	03/03/18 18:27:55	2:27:57	28.27	24.0	230	03/03/18 19:49:55	3:49:57	30.47	76.9
149	03/03/18 18:28:55	2:28:57	28.32	24.0	231	03/03/18 19:50:55	3:50:57	30.48	77.2
150	03/03/18 18:29:55	2:29:57	28.36	24.8	232	03/03/18 19:51:55	3:51:57	30.48	76.8
151	03/03/18 18:30:55	2:30:57	28.40	24.6	233	03/03/18 19:52:55	3:52:57	30.50	76.8
152	03/03/18 18:31:55	2:31:57	28.47	24.4	234	03/03/18 19:53:55	3:53:57	30.50	76.8
153	03/03/18 18:32:55	2:32:57	28.53	24.2	235	03/03/18 19:54:55	3:54:57	30.50	76.5
154	03/03/18 18:33:55	2:33:57	28.57	23.9	236	03/03/18 19:55:55	3:55:57	30.51	76.3
155	03/03/18 18:34:55	2:34:57	28.62	22.1	237	03/03/18 19:56:55	3:56:57	30.51	77.1
156	03/03/18 18:35:55	2:35:57	28.69	22.2	238	03/03/18 19:57:55	3:57:57	30.52	76.4
157	03/03/18 18:36:55	2:36:57	28.75	22.6	239	03/03/18 19:58:55	3:58:57	30.53	75.7
158	03/03/18 18:37:55	2:37:57	28.86	23.8	240	03/03/18 19:59:55	3:59:57	30.54	76.1
159	03/03/18 18:38:55	2:38:57	28.96	23.7	241	03/03/18 20:00:55	4:00:57	30.54	76.2
160	03/03/18 18:39:55	2:39:57	29.03	24.2	242	03/03/18 20:01:55	4:01:57	30.55	76.2
161	03/03/18 18:40:55	2:40:57	29.08	22.3	243	03/03/18 20:02:55	4:02:57	30.55	76.2
162	03/03/18 18:41:55	2:41:57	29.14	23.4	244	03/03/18 20:03:55	4:03:57	30.54	76.2
163	03/03/18 18:42:55	2:42:57	29.18	23.3	245	03/03/18 20:04:55	4:04:57	30.54	76.1
164	03/03/18 18:43:55	2:43:57	29.19	22.5	246	03/03/18 20:05:55	4:05:57	30.56	76.8
165	03/03/18 18:44:55	2:44:57	29.22	23.7	247	03/03/18 20:06:55	4:06:57	30.56	76.0
166	03/03/18 18:45:55	2:45:57	29.24	22.2	248	03/03/18 20:07:55	4:07:57	30.56	76.4
167	03/03/18 18:46:55	2:46:57	29.26	22.4	249	03/03/18 20:08:55	4:08:57	30.57	76.7
168	03/03/18 18:47:55	2:47:57	29.29	22.8	250	03/03/18 20:09:55	4:09:57	30.56	76.7
169	03/03/18 18:48:55	2:48:57	29.31	22.1	251	03/03/18 20:10:55	4:10:57	30.57	76.7
170	03/03/18 18:49:55	2:49:57	29.35	22.7	252	03/03/18 20:11:55	4:11:57	30.58	76.7
171	03/03/18 18:50:55	2:50:57	29.38	22.8	253 C	03/03/18 20:12:55	4:12:57	30.57	76.6
172	03/03/18 18:51:55	2:51:57	29.43	22.6	254	03/03/18 20:13:55	4:13:57	30.58	77.0
173	03/03/18 18:52:55	2:52:57	29.46	22.5	255	03/03/18 20:14:55	4:14:57	30.60	76.8
174	03/03/18 18:53:55	2:53:57	29.52	22.3	256	03/03/18 20:15:55	4:15:57	30.59	76.8
175	03/03/18 18:54:55	2:54:57	29.57	21.9	257	03/03/18 20:16:55	4:16:57	30.60	77.5
176	03/03/18 18:55:55	2:55:57	29.62	22.1	258 D	03/03/18 20:17:55	4:17:57	30.60	77.5
177	03/03/18 18:56:55	2:56:57	29.64	22.0	259	03/03/18 20:18:55	4:18:57	30.60	75.1
178	03/03/18 18:57:55	2:57:57	29.66	22.6	260	03/03/18 20:19:55	4:19:57	30.62	76.7
179	03/03/18 18:58:55	2:58:57	29.67	22.4	261	03/03/18 20:20:55	4:20:57	30.63	150.2
180	03/03/18 18:59:55	2:59:57	29.71	22.3	262	03/03/18 20:21:55	4:21:57	30.66	161.2
181	03/03/18 19:00:55	3:00:57	29.72	22.4	263	03/03/18 20:22:55	4:22:57	30.69	170.7
182	03/03/18 19:01:55	3:01:57	29.74	23.0	264	03/03/18 20:23:55	4:23:57	30.75	175.6

[redacted] 03/03/18 17:40:55 to 03/03/18 20:23:55 Elapse time: 1:40:57 to 4:23:57 Northstar

aramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

tem #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
265	03/03/18 20:24:55	4:24:57	30.78	183.0	347	03/03/18 21:46:55	5:46:57	31.76	1054.0
266	03/03/18 20:25:55	4:25:57	30.81	189.4	348	03/03/18 21:47:55	5:47:57	31.74	1056.3
[illegible]	03/03/18 20:26:55	4:26:57	30.85	197.4	349	03/03/18 21:48:55	5:48:57	31.74	1086.1
[illegible]	03/03/18 20:27:55	4:27:57	30.87	208.1	350	03/03/18 21:49:55	5:49:57	31.74	1091.8
269	03/03/18 20:28:55	4:28:57	30.90	217.7	351	03/03/18 21:50:55	5:50:57	31.73	1076.4
270	03/03/18 20:29:55	4:29:57	30.91	222.5	352	03/03/18 21:51:55	5:51:57	31.74	1083.3
271	03/03/18 20:30:55	4:30:57	30.93	228.7	353	03/03/18 21:52:55	5:52:57	31.75	1081.2
272	03/03/18 20:31:55	4:31:57	30.93	233.3	354	03/03/18 21:53:55	5:53:57	31.74	1077.1
273	03/03/18 20:32:55	4:32:57	30.96	239.8	355	03/03/18 21:54:55	5:54:57	31.73	1074.1
274	03/03/18 20:33:55	4:33:57	30.97	247.7	356	03/03/18 21:55:55	5:55:57	31.74	1071.8
275	03/03/18 20:34:55	4:34:57	30.97	258.1	357	03/03/18 21:56:55	5:56:57	31.73	1069.1
276	03/03/18 20:35:55	4:35:57	30.99	259.4	358	03/03/18 21:57:55	5:57:57	31.72	1067.1
277	03/03/18 20:36:55	4:36:57	31.00	264.2	359	03/03/18 21:58:55	5:58:57	31.73	1064.2
278	03/03/18 20:37:55	4:37:57	31.01	295.9	360	03/03/18 21:59:55	5:59:57	31.72	1063.5
279	03/03/18 20:38:55	4:38:57	31.01	313.2	361	03/03/18 22:00:55	6:00:57	31.71	1061.7
280	03/03/18 20:39:55	4:39:57	31.02	325.8	362	03/03/18 22:01:55	6:01:57	31.72	1059.6
281	03/03/18 20:40:55	4:40:57	31.03	333.4	363	03/03/18 22:02:55	6:02:57	31.71	1058.6
282	03/03/18 20:41:55	4:41:57	31.04	342.9	364	03/03/18 22:03:55	6:03:57	31.70	1057.3
283	03/03/18 20:42:55	4:42:57	31.04	359.7	365	03/03/18 22:04:55	6:04:57	31.70	1054.7
284	03/03/18 20:43:55	4:43:57	31.06	367.0	366	03/03/18 22:05:55	6:05:57	31.69	1054.4
285	03/03/18 20:44:55	4:44:57	31.06	394.1	367	03/03/18 22:06:55	6:06:57	31.69	1053.8
286	03/03/18 20:45:55	4:45:57	31.09	465.8	368	03/03/18 22:07:55	6:07:57	31.69	1053.4
287	03/03/18 20:46:55	4:46:57	31.13	514.1	369	03/03/18 22:08:55	6:08:57	31.68	1052.4
288	03/03/18 20:47:55	4:47:57	31.23	570.4	370	03/03/18 22:09:55	6:09:57	31.67	1052.2
289	03/03/18 20:48:55	4:48:57	31.33	604.0	371	03/03/18 22:10:55	6:10:57	31.67	1051.9
290	03/03/18 20:49:55	4:49:57	31.43	632.6	372	03/03/18 22:11:55	6:11:57	31.67	1050.5
291	03/03/18 20:50:55	4:50:57	31.53	663.8	373	03/03/18 22:12:55	6:12:57	31.66	1050.2
292	03/03/18 20:51:55	4:51:57	31.58	678.6	374	03/03/18 22:13:55	6:13:57	31.66	1049.9
293	03/03/18 20:52:55	4:52:57	31.61	691.7	375	03/03/18 22:14:55	6:14:57	31.65	1049.1
294	03/03/18 20:53:55	4:53:57	31.65	692.6	376	03/03/18 22:15:55	6:15:57	31.65	1049.1
295	03/03/18 20:54:55	4:54:57	31.66	696.3	377	03/03/18 22:16:55	6:16:57	31.65	1048.5
296	03/03/18 20:55:55	4:55:57	31.68	696.3	378	03/03/18 22:17:55	6:17:57	31.65	1048.5
297	03/03/18 20:56:55	4:56:57	31.69	700.4	379	03/03/18 22:18:55	6:18:57	31.64	1046.6
298	03/03/18 20:57:55	4:57:57	31.70	709.0	380	03/03/18 22:19:55	6:19:57	31.63	1046.1
299	03/03/18 20:58:55	4:58:57	31.70	703.5	381	03/03/18 22:20:55	6:20:57	31.63	1046.1
300	03/03/18 20:59:55	4:59:57	31.70	706.3	382	03/03/18 22:21:55	6:21:57	31.63	1045.7
301	03/03/18 21:00:55	5:00:57	31.71	709.0	383	03/03/18 22:22:55	6:22:57	31.62	1045.2
302	03/03/18 21:01:55	5:01:57	31.70	716.1	384	03/03/18 22:23:55	6:23:57	31.62	1045.2
303	03/03/18 21:02:55	5:02:57	31.71	762.2	385	03/03/18 22:24:55	6:24:57	31.63	1044.5
304	03/03/18 21:03:55	5:03:57	31.71	812.8	386	03/03/18 22:25:55	6:25:57	31.61	1044.2
305	03/03/18 21:04:55	5:04:57	31.73	825.3	387	03/03/18 22:26:55	6:26:57	31.62	1043.9
306	03/03/18 21:05:55	5:05:57	31.77	835.5	388	03/03/18 22:27:55	6:27:57	31.60	1043.4
[illegible]	03/03/18 21:06:55	5:06:57	31.79	839.8	389	03/03/18 22:28:55	6:28:57	31.60	1043.2
[illegible]	03/03/18 21:07:55	5:07:57	31.82	845.6	390	03/03/18 22:29:55	6:29:57	31.61	1042.5
309	03/03/18 21:08:55	5:08:57	31.82	895.2	391	03/03/18 22:30:55	6:30:57	31.59	1042.5
310	03/03/18 21:09:55	5:09:57	31.84	914.9	392	03/03/18 22:31:55	6:31:57	31.60	1041.8
311	03/03/18 21:10:55	5:10:57	31.87	919.7	393	03/03/18 22:32:55	6:32:57	31.61	1041.0
312	03/03/18 21:11:55	5:11:57	31.89	941.3	394	03/03/18 22:33:55	6:33:57	31.59	1040.9
313	03/03/18 21:12:55	5:12:57	31.90	960.2	395	03/03/18 22:34:55	6:34:57	31.60	1040.0
314	03/03/18 21:13:55	5:13:57	31.91	965.2	396	03/03/18 22:35:55	6:35:57	31.58	1040.1
315	03/03/18 21:14:55	5:14:57	31.91	964.2	397	03/03/18 22:36:55	6:36:57	31.59	1039.6
316	03/03/18 21:15:55	5:15:57	31.92	966.5	398	03/03/18 22:37:55	6:37:57	31.57	1040.6
317	03/03/18 21:16:55	5:16:57	31.92	969.3	399	03/03/18 22:38:55	6:38:57	31.57	1038.6
318	03/03/18 21:17:55	5:17:57	31.93	970.1	400	03/03/18 22:39:55	6:39:57	31.57	1038.8
319	03/03/18 21:18:55	5:18:57	31.93	972.6	401	03/03/18 22:40:55	6:40:57	31.57	1037.9
320	03/03/18 21:19:55	5:19:57	31.92	974.0	402	03/03/18 22:41:55	6:41:57	31.56	1037.8
321	03/03/18 21:20:55	5:20:57	31.91	974.9	403	03/03/18 22:42:55	6:42:57	31.57	1037.0
322	03/03/18 21:21:55	5:21:57	31.91	976.2	404	03/03/18 22:43:55	6:43:57	31.56	1036.9
323	03/03/18 21:22:55	5:22:57	31.90	989.0	405	03/03/18 22:44:55	6:44:57	31.56	1036.9
324	03/03/18 21:23:55	5:23:57	31.90	992.4	406	03/03/18 22:45:55	6:45:57	31.57	1036.4
325	03/03/18 21:24:55	5:24:57	31.89	989.3	407	03/03/18 22:46:55	6:46:57	31.56	1036.5
326	03/03/18 21:25:55	5:25:57	31.89	991.4	408	03/03/18 22:47:55	6:47:57	31.55	1035.3
327	03/03/18 21:26:55	5:26:57	31.88	996.5	409	03/03/18 22:48:55	6:48:57	31.57	1035.4
328	03/03/18 21:27:55	5:27:57	31.88	996.1	410	03/03/18 22:49:55	6:49:57	31.55	1034.9
329	03/03/18 21:28:55	5:28:57	31.87	998.3	411	03/03/18 22:50:55	6:50:57	31.54	1034.8
330	03/03/18 21:29:55	5:29:57	31.86	1000.1	412	03/03/18 22:51:55	6:51:57	31.56	1034.7
331	03/03/18 21:30:55	5:30:57	31.86	1002.9	413	03/03/18 22:52:55	6:52:57	31.55	1034.0
332	03/03/18 21:31:55	5:31:57	31.85	1004.4	414	03/03/18 22:53:55	6:53:57	31.54	1033.2
333	03/03/18 21:32:55	5:32:57	31.84	1014.3	415	03/03/18 22:54:55	6:54:57	31.55	1033.1
334	03/03/18 21:33:55	5:33:57	31.83	1028.7	416	03/03/18 22:55:55	6:55:57	31.55	1033.1
335	03/03/18 21:34:55	5:34:57	31.84	1043.6	417	03/03/18 22:56:55	6:56:57	31.54	1033.2
336	03/03/18 21:35:55	5:35:57	31.83	1040.2	418	03/03/18 22:57:55	6:57:57	31.54	1031.1
337	03/03/18 21:36:55	5:36:57	31.82	1036.2	419	03/03/18 22:58:55	6:58:57	31.53	1031.7
338	03/03/18 21:37:55	5:37:57	31.82	1040.2	420	03/03/18 22:59:55	6:59:57	31.54	1030.7
339	03/03/18 21:38:55	5:38:57	31.81	1043.3	421	03/03/18 23:00:55	7:00:57	31.53	1031.7
340	03/03/18 21:39:55	5:39:57	31.81	1044.6	422	03/03/18 23:01:55	7:01:57	31.54	1029.9
341	03/03/18 21:40:55	5:40:57	31.79	1046.6	423	03/03/18 23:02:55	7:02:57	31.52	1030.0
342	03/03/18 21:41:55	5:41:57	31.79	1049.1	424	03/03/18 23:03:55	7:03:57	31.54	1029.9
343	03/03/18 21:42:55	5:42:57	31.79	1050.1	425	03/03/18 23:04:55	7:04:57	31.53	1030.0
344	03/03/18 21:43:55	5:43:57	31.78	1051.6	426	03/03/18 23:05:55	7:05:57	31.53	1030.0
345	03/03/18 21:44:55	5:44:57	31.76	1051.8	427	03/03/18 23:06:55	7:06:57	31.54	1029.8
[illegible]	03/03/18 21:45:55	5:45:57	31.76	1053.3	428	03/03/18 23:07:55	7:07:57	31.54	1029.2

[illegible]: 03/03/18 20:24:55 to 03/03/18 23:07:55 Elapse time: 4:24:57 to 7:07:57 Northstar

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
429	03/03/18 23:08:55	7:08:57	31.52	1028.4	511	03/03/19 00:30:55	8:30:57	31.50	1008.9
430	03/03/18 23:09:55	7:09:57	31.52	1028.4	512	03/03/19 00:31:55	8:31:57	31.51	1008.9
[illegible]	03/03/18 23:10:55	7:10:57	31.53	1029.1	513	03/03/19 00:32:55	8:32:57	31.49	1007.3
[illegible]	03/03/18 23:11:55	7:11:57	31.52	1028.7	514	03/03/19 00:33:55	8:33:57	31.50	1008.0
433	03/03/18 23:12:55	7:12:57	31.54	1027.3	515	03/03/19 00:34:55	8:34:57	31.51	1008.0
434	03/03/18 23:13:55	7:13:57	31.53	1027.3	516	03/03/19 00:35:55	8:35:57	31.50	1008.2
435	03/03/18 23:14:55	7:14:57	31.51	1025.8	517	03/03/19 00:36:55	8:36:57	31.50	1009.0
436	03/03/18 23:15:55	7:15:57	31.53	1026.3	518	03/03/19 00:37:55	8:37:57	31.51	1008.8
437	03/03/18 23:16:55	7:16:57	31.52	1026.3	519	03/03/19 00:38:55	8:38:57	31.50	1007.9
438	03/03/18 23:17:55	7:17:57	31.53	1026.3	520	03/03/19 00:39:55	8:39:57	31.51	1008.3
439	03/03/18 23:18:55	7:18:57	31.53	1025.4	521	03/03/19 00:40:55	8:40:57	31.50	1008.2
440	03/03/18 23:19:55	7:19:57	31.51	1025.5	522	03/03/19 00:41:55	8:41:57	31.50	1008.2
441	03/03/18 23:20:55	7:20:57	31.53	1024.2	523	03/03/19 00:42:55	8:42:57	31.50	1007.8
442	03/03/18 23:21:55	7:21:57	31.53	1024.3	524	03/03/19 00:43:55	8:43:57	31.51	1007.6
443	03/03/18 23:22:55	7:22:57	31.50	1024.3	525	03/03/19 00:44:55	8:44:57	31.51	1007.6
444	03/03/18 23:23:55	7:23:57	31.51	1024.3	526	03/03/19 00:45:55	8:45:57	31.50	1006.5
445	03/03/18 23:24:55	7:24:57	31.52	1024.3	527	03/03/19 00:46:55	8:46:57	31.51	1006.7
446	03/03/18 23:25:55	7:25:57	31.53	1024.3	528	03/03/19 00:47:55	8:47:57	31.49	1006.8
447	03/03/18 23:26:55	7:26:57	31.53	1024.3	529	03/03/19 00:48:55	8:48:57	31.50	1006.8
448	03/03/18 23:27:55	7:27:57	31.52	1023.4	530	03/03/19 00:49:55	8:49:57	31.51	1006.1
449	03/03/18 23:28:55	7:28:57	31.51	1022.4	531	03/03/19 00:50:55	8:50:57	31.51	1006.1
450	03/03/18 23:29:55	7:29:57	31.51	1021.7	532	03/03/19 00:51:55	8:51:57	31.50	1006.6
451	03/03/18 23:30:55	7:30:57	31.51	1022.0	533	03/03/19 00:52:55	8:52:57	31.50	1006.8
452	03/03/18 23:31:55	7:31:57	31.51	1021.5	534	03/03/19 00:53:55	8:53:57	31.49	1006.8
453	03/03/18 23:32:55	7:32:57	31.50	1021.3	535	03/03/19 00:54:55	8:54:57	31.50	1006.7
454	03/03/18 23:33:55	7:33:57	31.51	1021.2	536	03/03/19 00:55:55	8:55:57	31.48	1006.8
455	03/03/18 23:34:55	7:34:57	31.53	1021.2	537	03/03/19 00:56:55	8:56:57	31.50	1006.7
456	03/03/18 23:35:55	7:35:57	31.52	1020.9	538	03/03/19 00:57:55	8:57:57	31.49	1006.8
457	03/03/18 23:36:55	7:36:57	31.50	1021.0	539	03/03/19 00:58:55	8:58:57	31.50	1006.0
458	03/03/18 23:37:55	7:37:57	31.52	1020.5	540	03/03/19 00:59:55	8:59:57	31.50	1006.1
459	03/03/18 23:38:55	7:38:57	31.50	1019.9	541	03/03/19 01:00:55	9:00:57	31.49	1005.0
460	03/03/18 23:39:55	7:39:57	31.51	1019.9	542	03/03/19 01:01:55	9:01:57	31.49	1005.5
461	03/03/18 23:40:55	7:40:57	31.51	1019.9	543	03/03/19 01:02:55	9:02:57	31.50	1005.6
462	03/03/18 23:41:55	7:41:57	31.51	1019.8	544	03/03/19 01:03:55	9:03:57	31.47	1005.2
463	03/03/18 23:42:55	7:42:57	31.52	1019.1	545	03/03/19 01:04:55	9:04:57	31.51	1005.1
464	03/03/18 23:43:55	7:43:57	31.51	1019.0	546	03/03/19 01:05:55	9:05:57	31.50	1005.1
465	03/03/18 23:44:55	7:44:57	31.51	1019.5	547	03/03/19 01:06:55	9:06:57	31.49	1005.7
466	03/03/18 23:45:55	7:45:57	31.51	1018.9	548	03/03/19 01:07:55	9:07:57	31.49	1005.6
467	03/03/18 23:46:55	7:46:57	31.52	1017.5	549	03/03/19 01:08:55	9:08:57	31.50	1005.6
468	03/03/18 23:47:55	7:47:57	31.51	1017.6	550	03/03/19 01:09:55	9:09:57	31.49	1005.6
469	03/03/18 23:48:55	7:48:57	31.52	1017.0	551	03/03/19 01:10:55	9:10:57	31.49	1005.3
470	03/03/18 23:49:55	7:49:57	31.50	1017.0	552	03/03/19 01:11:55	9:11:57	31.49	1005.3
[illegible]	03/03/18 23:50:55	7:50:57	31.51	1017.0	553	03/03/19 01:12:55	9:12:57	31.49	1005.6
[illegible]	03/03/18 23:51:55	7:51:57	31.49	1016.8	554	03/03/19 01:13:55	9:13:57	31.50	1005.4
473	03/03/18 23:52:55	7:52:57	31.49	1016.8	555	03/03/19 01:14:55	9:14:57	31.49	1005.3
474	03/03/18 23:53:55	7:53:57	31.51	1016.7	556	03/03/19 01:15:55	9:15:57	31.51	1004.4
475	03/03/18 23:54:55	7:54:57	31.50	1014.2	557	03/03/19 01:16:55	9:16:57	31.49	1005.2
476	03/03/18 23:55:55	7:55:57	31.51	1016.4	558 F	03/03/19 01:17:55	9:17:57	31.49	1004.4
477	03/03/18 23:56:55	7:56:57	31.51	1014.5	559	03/03/19 01:18:55	9:18:57	31.49	1004.3
478	03/03/18 23:57:55	7:57:57	31.52	1014.5	560	03/03/19 01:19:55	9:19:57	31.50	1036.2
479	03/03/18 23:58:55	7:58:57	31.50	1014.5	561	03/03/19 01:20:55	9:20:57	31.50	1065.0
480	03/03/18 23:59:55	7:59:57	31.51	1014.5	562	03/03/19 01:21:55	9:21:57	31.49	1075.9
481	03/03/19 00:00:55	8:00:57	31.51	1014.6	563	03/03/19 01:22:55	9:22:57	31.51	1072.3
482	03/03/19 00:01:55	8:01:57	31.51	1014.5	564	03/03/19 01:23:55	9:23:57	31.51	1069.5
483	03/03/19 00:02:55	8:02:57	31.51	1013.9	565	03/03/19 01:24:55	9:24:57	31.51	1066.6
484	03/03/19 00:03:55	8:03:57	31.51	1013.9	566	03/03/19 01:25:55	9:25:57	31.50	1064.3
485	03/03/19 00:04:55	8:04:57	31.49	1013.1	567	03/03/19 01:26:55	9:26:57	31.49	1063.3
486	03/03/19 00:05:55	8:05:57	31.50	1012.8	568	03/03/19 01:27:55	9:27:57	31.49	1064.2
487	03/03/19 00:06:55	8:06:57	31.50	1012.5	569	03/03/19 01:28:55	9:28:57	31.51	1064.1
488	03/03/19 00:07:55	8:07:57	31.49	1012.5	570	03/03/19 01:29:55	9:29:57	31.50	1064.1
489	03/03/19 00:08:55	8:08:57	31.50	1013.7	571	03/03/19 01:30:55	9:30:57	31.50	1063.3
490	03/03/19 00:09:55	8:09:57	31.49	1012.5	572	03/03/19 01:31:55	9:31:57	31.49	1063.4
491	03/03/19 00:10:55	8:10:57	31.50	1012.9	573	03/03/19 01:32:55	9:32:57	31.49	1062.7
492	03/03/19 00:11:55	8:11:57	31.51	1012.4	574	03/03/19 01:33:55	9:33:57	31.49	1063.6
493	03/03/19 00:12:55	8:12:57	31.49	1011.3	575	03/03/19 01:34:55	9:34:57	31.50	1063.5
494	03/03/19 00:13:55	8:13:57	31.51	1011.1	576	03/03/19 01:35:55	9:35:57	31.47	1062.1
495	03/03/19 00:14:55	8:14:57	31.48	1010.9	577	03/03/19 01:36:55	9:36:57	31.50	1061.6
496	03/03/19 00:15:55	8:15:57	31.51	1010.8	578	03/03/19 01:37:55	9:37:57	31.51	1061.6
497	03/03/19 00:16:55	8:16:57	31.50	1011.1	579	03/03/19 01:38:55	9:38:57	31.50	1062.1
498	03/03/19 00:17:55	8:17:57	31.49	1010.7	580	03/03/19 01:39:55	9:39:57	31.50	1062.8
499	03/03/19 00:18:55	8:18:57	31.50	1010.6	581	03/03/19 01:40:55	9:40:57	31.49	1063.0
500	03/03/19 00:19:55	8:19:57	31.50	1010.5	582	03/03/19 01:41:55	9:41:57	31.47	1062.0
501	03/03/19 00:20:55	8:20:57	31.51	1011.8	583	03/03/19 01:42:55	9:42:57	31.50	1062.5
502	03/03/19 00:21:55	8:21:57	31.50	1010.6	584	03/03/19 01:43:55	9:43:57	31.49	1048.8
503	03/03/19 00:22:55	8:22:57	31.50	1010.3	585	03/03/19 01:44:55	9:44:57	31.51	1049.7
504	03/03/19 00:23:55	8:23:57	31.50	1010.3	586	03/03/19 01:45:55	9:45:57	31.51	1051.2
505	03/03/19 00:24:55	8:24:57	31.50	1009.8	587	03/03/19 01:46:55	9:46:57	31.50	1050.0
506	03/03/19 00:25:55	8:25:57	31.51	1009.8	588	03/03/19 01:47:55	9:47:57	31.52	1049.9
507	03/03/19 00:26:55	8:26:57	31.50	1009.8	589	03/03/19 01:48:55	9:48:57	31.52	1081.1
508	03/03/19 00:27:55	8:27:57	31.49	1009.8	590	03/03/19 01:49:55	9:49:57	31.52	1080.6
509	03/03/19 00:28:55	8:28:57	31.50	1008.9	591	03/03/19 01:50:55	9:50:57	31.52	1080.6
[illegible]	03/03/19 00:29:55	8:29:57	31.48	1010.2	592	03/03/19 01:51:55	9:51:57	31.52	1077.4

Date: 03/03/18 23:08:55 to 03/03/19 01:51:55 Elapse time: 7:08:57 to 9:51:57 Northstar

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
593	03/03/19 01:52:55	9:52:57	31.53	1077.2	675	03/03/19 03:14:55	11:14:57	26.40	1064.8
594	03/03/19 01:53:55	9:53:57	31.52	1075.4	676	03/03/19 03:15:55	11:15:57	26.25	1044.0
595	03/03/19 01:54:55	9:54:57	31.51	1074.8	677	03/03/19 03:16:55	11:16:57	26.09	1052.0
596	03/03/19 01:55:55	9:55:57	31.53	1073.3	678	03/03/19 03:17:55	11:17:57	25.89	1039.3
597	03/03/19 01:56:55	9:56:57	31.52	1071.8	679	03/03/19 03:18:55	11:18:57	25.71	1036.1
598	03/03/19 01:57:55	9:57:57	31.51	1071.1	680	03/03/19 03:19:55	11:19:57	25.61	1052.1
599	03/03/19 01:58:55	9:58:57	31.53	1070.8	681	03/03/19 03:20:55	11:20:57	25.50	1037.8
600	03/03/19 01:59:55	9:59:57	31.52	1070.7	682	03/03/19 03:21:55	11:21:57	25.30	1050.8
601	03/03/19 02:00:55	10:00:57	31.52	1069.5	683	03/03/19 03:22:55	11:22:57	25.17	1037.5
602	03/03/19 02:01:55	10:01:57	31.52	1068.3	684	03/03/19 03:23:55	11:23:57	25.03	1050.3
603	03/03/19 02:02:55	10:02:57	31.52	1067.3	685	03/03/19 03:24:55	11:24:57	24.80	1052.2
604	03/03/19 02:03:55	10:03:57	31.52	1066.8	686	03/03/19 03:25:55	11:25:57	24.62	1053.6
605	03/03/19 02:04:55	10:04:57	31.51	1065.1	687	03/03/19 03:26:55	11:26:57	24.47	1067.4
606	03/03/19 02:05:55	10:05:57	31.52	1064.9	688	03/03/19 03:27:55	11:27:57	24.31	1052.4
607	03/03/19 02:06:55	10:06:57	31.50	1064.3	689	03/03/19 03:28:55	11:28:57	24.16	1039.4
608	03/03/19 02:07:55	10:07:57	31.52	1062.9	690	03/03/19 03:29:55	11:29:57	23.98	1035.6
609	03/03/19 02:08:55	10:08:57	31.53	1062.4	691	03/03/19 03:30:55	11:30:57	23.84	1035.6
610	03/03/19 02:09:55	10:09:57	31.51	1062.5	692	03/03/19 03:31:55	11:31:57	23.73	1033.7
611	03/03/19 02:10:55	10:10:57	31.50	1050.2	693	03/03/19 03:32:55	11:32:57	23.52	1075.2
612	03/03/19 02:11:55	10:11:57	31.51	1057.2	694	03/03/19 03:33:55	11:33:57	23.26	1060.8
613	03/03/19 02:12:55	10:12:57	31.51	1058.5	695	03/03/19 03:34:55	11:34:57	23.12	1070.9
614	03/03/19 02:13:55	10:13:57	31.50	1053.4	696	03/03/19 03:35:55	11:35:57	22.95	1059.0
615	03/03/19 02:14:55	10:14:57	31.51	1059.0	697	03/03/19 03:36:55	11:36:57	22.84	1062.2
616	03/03/19 02:15:55	10:15:57	31.51	1049.7	698	03/03/19 03:37:55	11:37:57	22.64	1062.8
617	03/03/19 02:16:55	10:16:57	31.49	1044.1	699	03/03/19 03:38:55	11:38:57	22.46	1068.6
618	03/03/19 02:17:55	10:17:57	31.49	1027.9	700	03/03/19 03:39:55	11:39:57	22.32	1055.2
619	03/03/19 02:18:55	10:18:57	31.46	1048.7	701	03/03/19 03:40:55	11:40:57	22.15	1062.1
620	03/03/19 02:19:55	10:19:57	31.46	1044.6	702	03/03/19 03:41:55	11:41:57	21.97	1066.8
621	03/03/19 02:20:55	10:20:57	31.45	1043.7	703	03/03/19 03:42:55	11:42:57	21.71	1056.2
622	03/03/19 02:21:55	10:21:57	31.42	1035.3	704	03/03/19 03:43:55	11:43:57	21.55	1049.9
623	03/03/19 02:22:55	10:22:57	31.39	1038.1	705	03/03/19 03:44:55	11:44:57	21.33	1064.6
624	03/03/19 02:23:55	10:23:57	31.36	1057.7	706	03/03/19 03:45:55	11:45:57	21.17	1055.0
625	03/03/19 02:24:55	10:24:57	31.34	1048.2	707	03/03/19 03:46:55	11:46:57	21.07	1068.4
626	03/03/19 02:25:55	10:25:57	31.31	1039.9	708	03/03/19 03:47:55	11:47:57	20.92	1061.7
627	03/03/19 02:26:55	10:26:57	31.27	1060.5	709	03/03/19 03:48:55	11:48:57	20.73	1039.4
628	03/03/19 02:27:55	10:27:57	31.24	1049.7	710	03/03/19 03:49:55	11:49:57	20.49	1026.3
629	03/03/19 02:28:55	10:28:57	31.22	1060.1	711	03/03/19 03:50:55	11:50:57	20.30	1020.1
630	03/03/19 02:29:55	10:29:57	31.19	1047.4	712	03/03/19 03:51:55	11:51:57	20.20	1018.0
631	03/03/19 02:30:55	10:30:57	31.16	1044.8	713	03/03/19 03:52:55	11:52:57	20.03	1012.6
632	03/03/19 02:31:55	10:31:57	31.12	1047.0	714	03/03/19 03:53:55	11:53:57	19.85	1009.4
633	03/03/19 02:32:55	10:32:57	31.10	1039.3	715	03/03/19 03:54:55	11:54:57	19.73	1005.6
634	03/03/19 02:33:55	10:33:57	31.07	1060.1	716	03/03/19 03:55:55	11:55:57	19.58	1002.5
635	03/03/19 02:34:55	10:34:57	31.05	1057.1	717	03/03/19 03:56:55	11:56:57	19.37	999.7
636	03/03/19 02:35:55	10:35:57	31.03	1043.3	718	03/03/19 03:57:55	11:57:57	19.24	997.9
637	03/03/19 02:36:55	10:36:57	31.02	1065.1	719	03/03/19 03:58:55	11:58:57	19.14	995.2
638	03/03/19 02:37:55	10:37:57	31.00	1044.6	720	03/03/19 03:59:55	11:59:57	19.00	999.0
639	03/03/19 02:38:55	10:38:57	30.94	1064.8	721	03/03/19 04:00:55	12:00:57	18.90	998.7
640	03/03/19 02:39:55	10:39:57	30.87	1045.5	722	03/03/19 04:01:55	12:01:57	18.77	983.0
641	03/03/19 02:40:55	10:40:57	30.75	1062.4	723	03/03/19 04:02:55	12:02:57	18.65	925.0
642	03/03/19 02:41:55	10:41:57	30.65	1050.5	724	03/03/19 04:03:55	12:03:57	18.56	918.4
643	03/03/19 02:42:55	10:42:57	30.58	1053.9	725	03/03/19 04:04:55	12:04:57	18.49	912.7
644	03/03/19 02:43:55	10:43:57	30.51	1053.6	726	03/03/19 04:05:55	12:05:57	18.43	904.8
645	03/03/19 02:44:55	10:44:57	30.42	1042.8	727	03/03/19 04:06:55	12:06:57	18.34	901.0
646	03/03/19 02:45:55	10:45:57	30.31	1041.4	728	03/03/19 04:07:55	12:07:57	18.25	911.4
647	03/03/19 02:46:55	10:46:57	30.18	1038.6	729	03/03/19 04:08:55	12:08:57	18.13	909.5
648	03/03/19 02:47:55	10:47:57	30.04	1037.8	730	03/03/19 04:09:55	12:09:57	18.01	900.0
649	03/03/19 02:48:55	10:48:57	29.93	1038.1	731	03/03/19 04:10:55	12:10:57	17.94	832.0
650	03/03/19 02:49:55	10:49:57	29.81	1035.6	732	03/03/19 04:11:55	12:11:57	17.86	706.2
651	03/03/19 02:50:55	10:50:57	29.70	1048.7	733	03/03/19 04:12:55	12:12:57	17.80	702.1
652	03/03/19 02:51:55	10:51:57	29.58	1061.3	734	03/03/19 04:13:55	12:13:57	17.72	688.0
653	03/03/19 02:52:55	10:52:57	29.41	1045.3	735	03/03/19 04:14:55	12:14:57	17.67	669.2
654	03/03/19 02:53:55	10:53:57	29.28	1042.9	736	03/03/19 04:15:55	12:15:57	17.61	488.1
655	03/03/19 02:54:55	10:54:57	29.22	1042.1	737	03/03/19 04:16:55	12:16:57	17.57	477.9
656	03/03/19 02:55:55	10:55:57	29.13	1039.6	738	03/03/19 04:17:55	12:17:57	17.54	482.1
657	03/03/19 02:56:55	10:56:57	28.92	1051.4	739	03/03/19 04:18:55	12:18:57	17.50	477.9
658	03/03/19 02:57:55	10:57:57	28.72	1053.0	740	03/03/19 04:19:55	12:19:57	17.47	435.2
659	03/03/19 02:58:55	10:58:57	28.57	1042.4	741	03/03/19 04:20:55	12:20:57	17.42	266.7
660	03/03/19 02:59:55	10:59:57	28.42	1058.5	742	03/03/19 04:21:55	12:21:57	17.36	264.5
661	03/03/19 03:00:55	11:00:57	28.33	1041.3	743	03/03/19 04:22:55	12:22:57	17.29	264.5
662	03/03/19 03:01:55	11:01:57	28.21	1038.9	744	03/03/19 04:23:55	12:23:57	17.24	264.0
663	03/03/19 03:02:55	11:02:57	28.04	1054.7	745	03/03/19 04:24:55	12:24:57	17.20	263.1
664	03/03/19 03:03:55	11:03:57	27.88	1042.6	746	03/03/19 04:25:55	12:25:57	17.14	205.9
665	03/03/19 03:04:55	11:04:57	27.79	1059.1	747	03/03/19 04:26:55	12:26:57	17.12	146.5
666	03/03/19 03:05:55	11:05:57	27.66	1049.8	748	03/03/19 04:27:55	12:27:57	17.10	147.8
667	03/03/19 03:06:55	11:06:57	27.44	1041.9	749	03/03/19 04:28:55	12:28:57	17.07	146.3
668	03/03/19 03:07:55	11:07:57	27.28	1039.7	750	03/03/19 04:29:55	12:29:57	17.04	145.9
669	03/03/19 03:08:55	11:08:57	27.16	1038.2	751	03/03/19 04:30:55	12:30:57	17.02	145.7
670	03/03/19 03:09:55	11:09:57	27.02	1054.5	752	03/03/19 04:31:55	12:31:57	16.98	145.1
671	03/03/19 03:10:55	11:10:57	26.88	1038.7	753	03/03/19 04:32:55	12:32:57	16.97	144.1
672	03/03/19 03:11:55	11:11:57	26.68	1051.7	754	03/03/19 04:33:55	12:33:57	16.95	142.1
673	03/03/19 03:12:55	11:12:57	26.58	1042.3	755	03/03/19 04:34:55	12:34:57	16.93	139.1
674	03/03/19 03:13:55	11:13:57	26.51	1038.9	756	03/03/19 04:35:55	12:35:57	16.90	90.4

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 3

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
757	03/03/19 04:36:55	12:36:57	16.88	15.4					
758	03/03/19 04:37:55	12:37:57	16.86	16.8					
[illegible]	03/03/19 04:38:55	12:38:57	16.86	14.3					
	03/03/19 04:39:55	12:39:57	16.85	19.6					
761	03/03/19 04:40:55	12:40:57	16.84	14.8					
762	03/03/19 04:41:55	12:41:57	16.84	11.2					
763	03/03/19 04:42:55	12:42:57	16.77	11.5					
764	03/03/19 04:43:55	12:43:57	16.68	11.9					
765	03/03/19 04:44:55	12:44:57	16.70	12.6					
766	03/03/19 04:45:55	12:45:57	16.69	11.6					
767	03/03/19 04:46:55	12:46:57	16.69	12.8					
768	03/03/19 04:47:55	12:47:57	16.70	12.9					
769	03/03/19 04:48:55	12:48:57	16.73	13.4					
770	03/03/19 04:49:55	12:49:57	16.78	13.9					
771	03/03/19 04:50:55	12:50:57	16.82	15.0					
772	03/03/19 04:51:55	12:51:57	16.87	0.0					
773	03/03/19 04:52:55	12:52:57	16.77	0.0					
774	03/03/19 04:53:55	12:53:57	16.49	0.0					
775	03/03/19 04:54:55	12:54:57	16.13	0.0					
776	03/03/19 04:55:55	12:55:57	15.73	0.0					
777	03/03/19 04:56:55	12:56:57	15.22	0.0					
778	03/03/19 04:57:55	12:57:57	14.71	0.0					
779	03/03/19 04:58:55	12:58:57	14.16	0.0					
780	03/03/19 04:59:55	12:59:57	13.46	0.0					
781	03/03/19 05:00:55	13:00:57	12.95	0.0					
782	03/03/19 05:01:55	13:01:57	12.29	0.0					
783	03/03/19 05:02:55	13:02:57	11.76	0.0					
784	03/03/19 05:03:55	13:03:57	11.22	0.0					
785	03/03/19 05:04:55	13:04:57	10.57	0.0					
786	03/03/19 05:05:55	13:05:57	10.15	0.0					
787	03/03/19 05:06:55	13:06:57	9.54	0.0					
788	03/03/19 05:07:55	13:07:57	9.07	0.0					
789	03/03/19 05:08:55	13:08:57	8.58	0.0					
790	03/03/19 05:09:55	13:09:57	8.09	0.0					
791	03/03/19 05:10:55	13:10:57	7.68	0.0					
792	03/03/19 05:11:55	13:11:57	7.26	0.0					
793	03/03/19 05:12:55	13:12:57	6.85	0.0					
794	03/03/19 05:13:55	13:13:57	6.52	0.0					
795	03/03/19 05:14:55	13:14:57	6.20	0.0					
796	03/03/19 05:15:55	13:15:57	5.76	0.0					
797	03/03/19 05:16:55	13:16:57	5.48	0.0					
798	03/03/19 05:17:55	13:17:57	5.15	0.0					
[illegible]	03/03/19 05:18:55	13:18:57	4.93	0.0					
	03/03/19 05:19:55	13:19:57	4.70	0.0					
801	03/03/19 05:20:55	13:20:57	4.41	0.0					
802	03/03/19 05:21:55	13:21:57	4.16	0.0					
803	03/03/19 05:22:55	13:22:57	3.96	0.0					
804	03/03/19 05:23:55	13:23:57	3.73	0.0					
805	03/03/19 05:24:55	13:24:57	3.99	0.0					
806	03/03/19 05:25:55	13:25:57	4.83	0.0					

INFLATE - TALLY SHEET

Northstar Drillstem Testers Inc.

1210, 540 - 5 Avenue S.W.
Calgary, Alberta T2P 0M2

1-800-567-8420 (24 Hrs.)
Tel: (403) 265-8987 (24 Hrs.)
Fax: (403) 265-6776

Company: PARAMOUNT RESOURCES LTD

Well Name: PARAMOUNT et al McKAY LAKES

Well Number: K-36/60° 20', 123° -15'

DST NO. THREE Interval 684 - 711

Customer Representative: BRIAN

Tester: T. BLONDIN / E. FLOOD RT

1	1849	11	1886	21	1900.	31	~~1880~~	41	
2	1923	12	1905	22	1902	32	9.70	42	
3	1886	13	1880	23	1862	33	SLV.46	43	
4	1903	14	1885	24	1926	34		44	
5	1900	15	1894	25	1899	35		45	
6	1858	16	1894	26	~~1905~~	36		46	
7	1896	17	1903	27	1922	37		47	
8	1926	18	1923	28	1892	38		48	
9	1900	19	1872	29	1864	39		49	
10	1896	20	1902	30	1922	40		50	
A	190.37	B	189.44	C	190.14	D	10.16	E	

190.37

51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

Drill Pipe		Drill Collars		Pipe Out	
A	189.37	1	194.5		
B	189.44	2	182.34		
C	190.14	3	189.6		
D	10.16	4	184.6		
E		5	186.7		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	579.11	DC	93.72		

579.11

D.P 579.11
D.C 93.72
X = Total Pipe 673.83
Y = Tool Above Interval 20.40
X + Y 693.23
Z = Top of Interval 684.00
Stick Up = X + Y - Z 9.23

Stick Up	[-9.23]		
KB			
Drill Pipe Tally	579.11		
Drill Collar Tally	93.72		
Stabbing Valve			
XO Sub	.30		
Reversing Sub	.30		
Choke Sub			
PIOSUB	.30		
Upper Hanger	.30	664.80	Recorder # 20844
Bomb Well	1.22		
Hydraulic Tool	1.42		
Sampler	1.12	# 203	
Sampler			
~~Sub~~ SQZ	1.00		
Upper Hanger	4.36	674.12	Recorder # RT22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N
Safety Joint	.73		
Inflate Pump	.99		S/N
Screen	1.32		
Release System	1.12		S/N
Top Packer	1.78	684.00	**Top of Interval**
			Element # 67049
Perforations	.86		
Upper Hanger	.30		Recorder # 20494
Lower Hanger	1.56		Recorder # 20655
XO Sub	.30		
COLLARS	18.79		
SPACING	4.56		
XO Sub	.30		
Packer Stub	.42	711.09	**Bottom of Interval**
Bottom Packer	1.86		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	715.10	**Bottom Tools**

Reliable Drillstem Testing

Lowest "Misruns" in the Industry

Northstar Drillstem Testers Inc.
ISO 9001-Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2
Tel: 403.265.8987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	PARAMOUNT RESOURCES LTD	Date	03/03/18
Well Name	PARAMOUNT et al McKAY LAKES	Formation	
Well Location	K-36/60°20', 123°15'	Type of test	INFLATE STRADDLE
License No.	1966	Kelly Bushing	294.73 Gr. Elevation 290.3
DST No.	THREE Interval	684 - 711	Total Depth 800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: WEAK BLOW → 2 INCHES DEEP DIMINISHING TO SURFACE BUBBLES → NO GAS TO SURFACE

Secondflow: WEAK BLOW 2 INCHES DEEP DIMINISHING TO SURFACE BUBBLES IN 7 MINUTES, NO GAS TO Surface

Comments:

PRESSURE DATA

Recorder#	20494	Depth	685.16
A. Init.Hyd.	8480	kPa	
B. First Flow	300	kPa	
B1. Final Flow	420	kPa	
C. Init.Shut In	7540	kPa	
D. Init.Flow	400	kPa	
E. Final Flow	1330	kPa	
F. Final Shut In	8000	kPa	
G. Final Hyd.	8060	kPa	

FLUID RECOVERY

Oil		m	°API
Water		m	
Mud	85	m	
		m	
		m	
Total Fluid	85	m	
Samples sent to:	AGAT		
BHS#	203		
Fluid Samples	3	Gas Samples	

GAS RECOVERY

Measured with

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time	
Arrive on Location	03/03/17	14:30	hr
Start Pick up Tools	03/03/18	17:00	hr
Start Recorder	03/03/18	16100	hr
Recover Recorder	03/03/19	09:00	hr
Finish Lay Down Tools	03/03/14	11.00	hr
Released	/		hr
Weight Set on Packer	12,000	daN	
Weight Pulled Loose	34,000	daN	
Initial String Weight	21,000	daN	
Unseated String Weight	25,000	daN	

MUD DATA

Mud Type	GEL CHEM	
Weight	1180	kg/m³
Viscosity	80	s/L
Mud Drop		m
Amount of Fill		m
Bottom Hole Temp.	31	°C
Preflow	11	min
Initial	62	min
Second Flow	88	min
Final Shut In	120	min

PIPE DATA

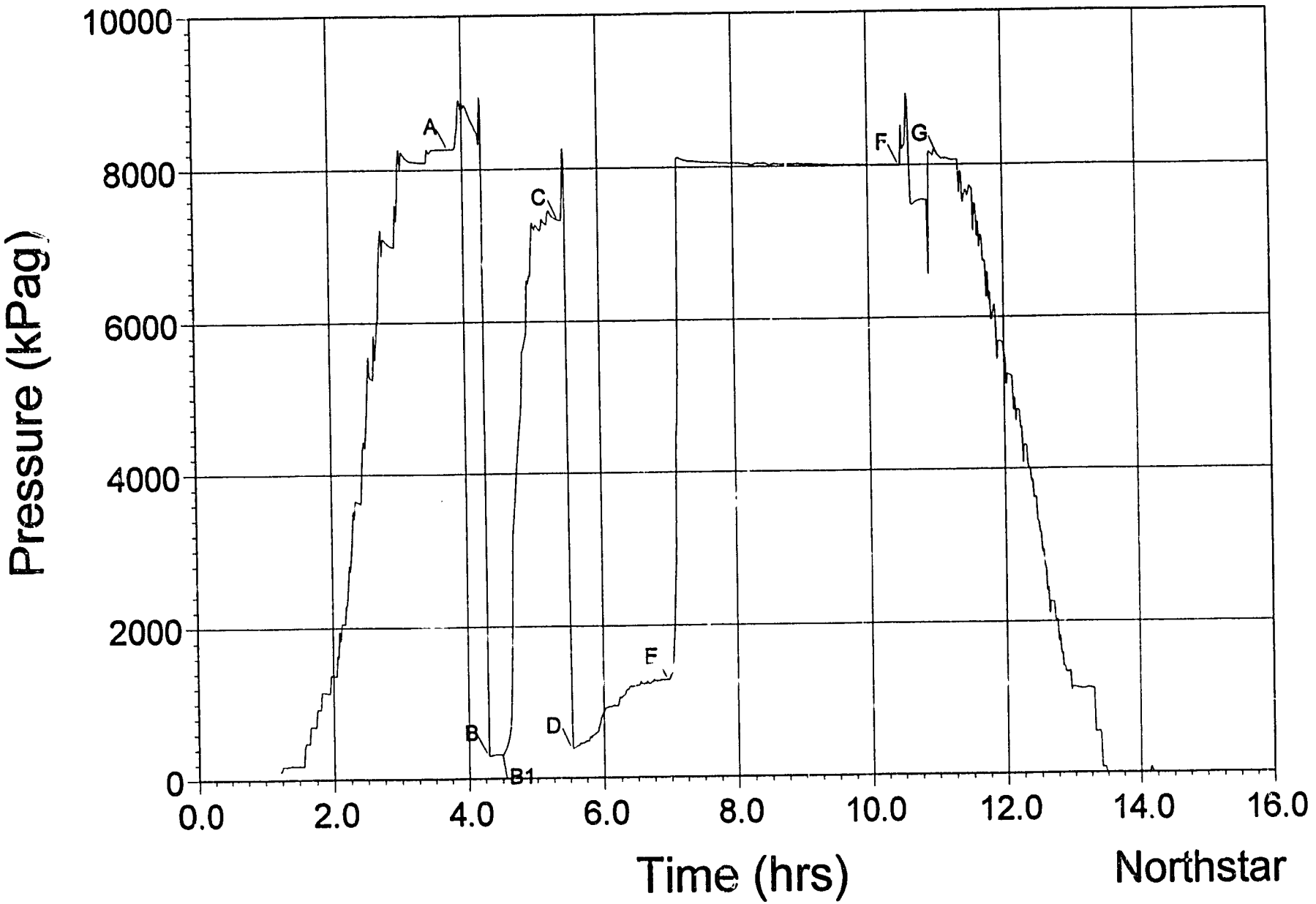
	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	143	63.5	93.72
Drill Pipe	114.3	24.7	97.2	579.11
Water Cushion		Stands		

Time begin	Time End
22:21	22:32
22:32	23:34
23:34	01:02
01:02	03:02

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

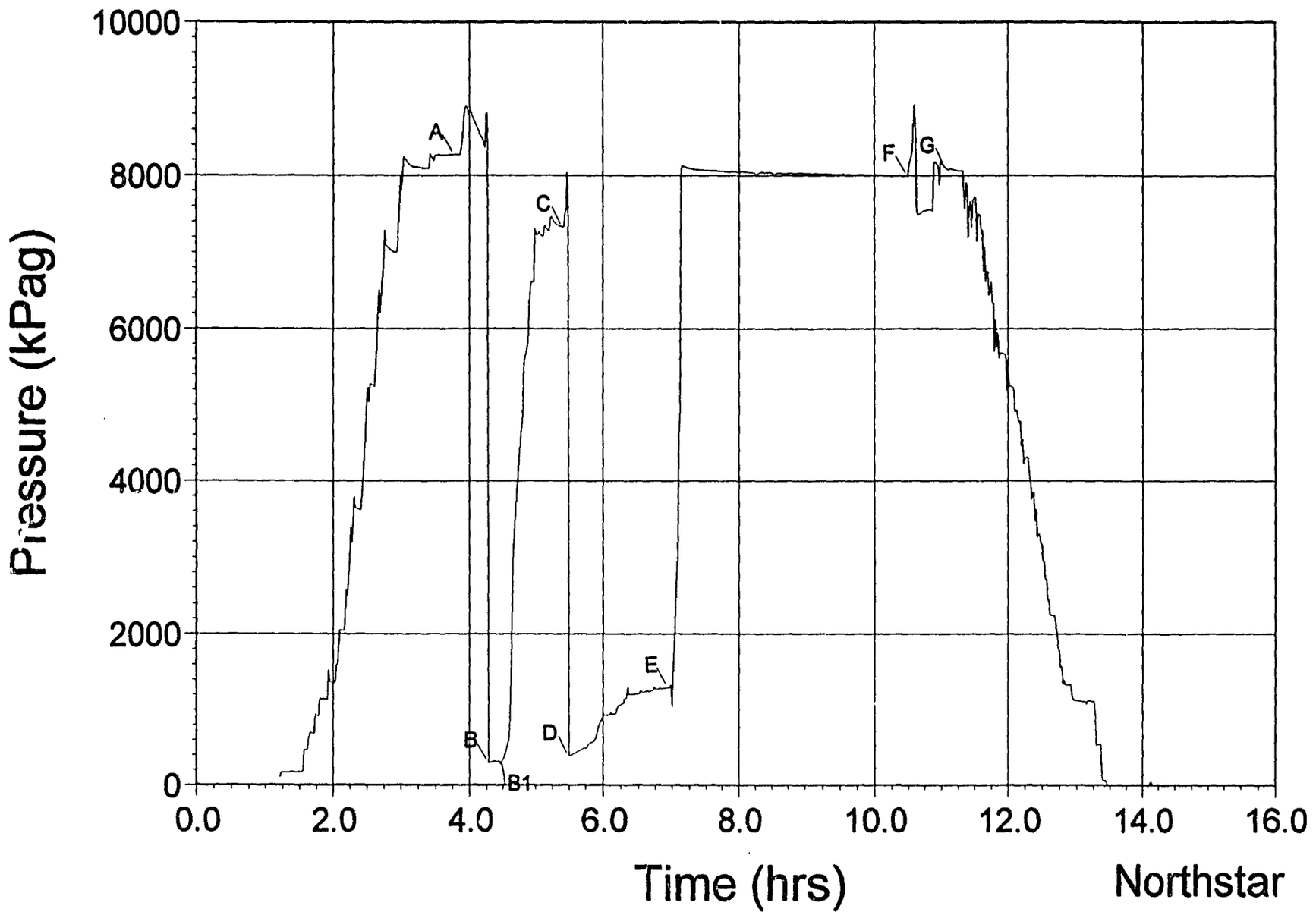
Recorder No: 20655 Depth: 685.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

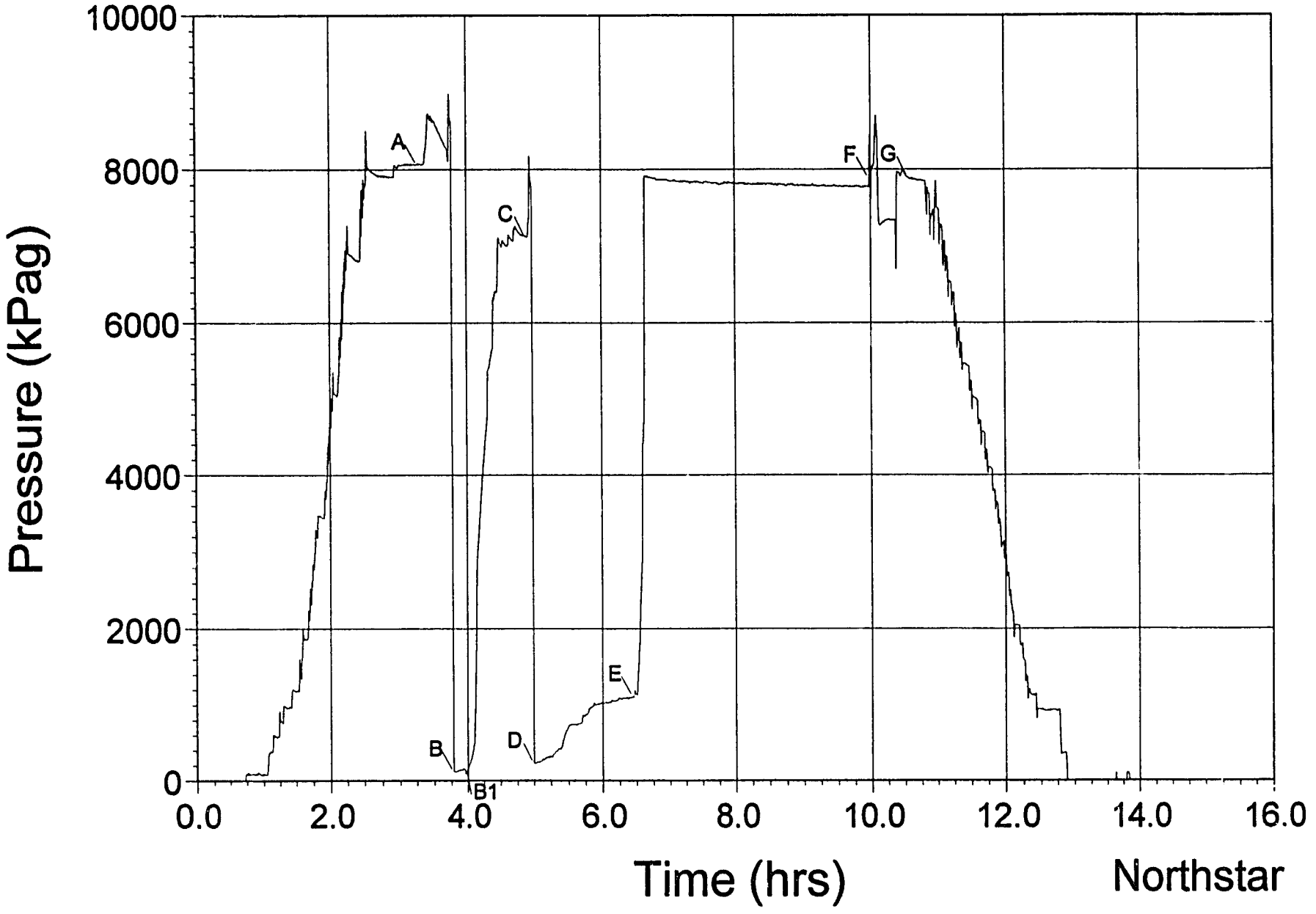
Recorder No: 20494 Depth: 685.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

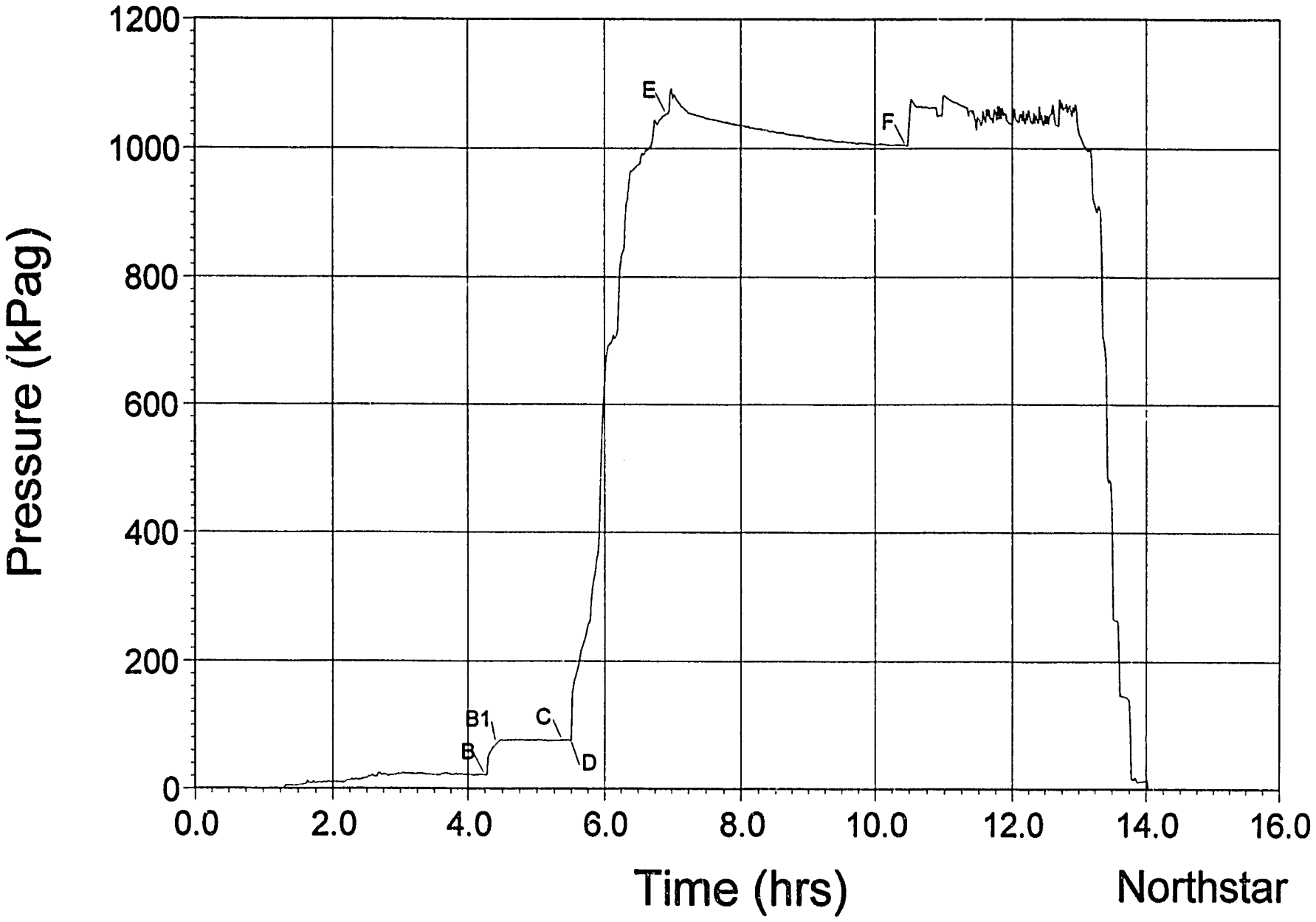
Recorder No: 022 Depth: 674.12 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

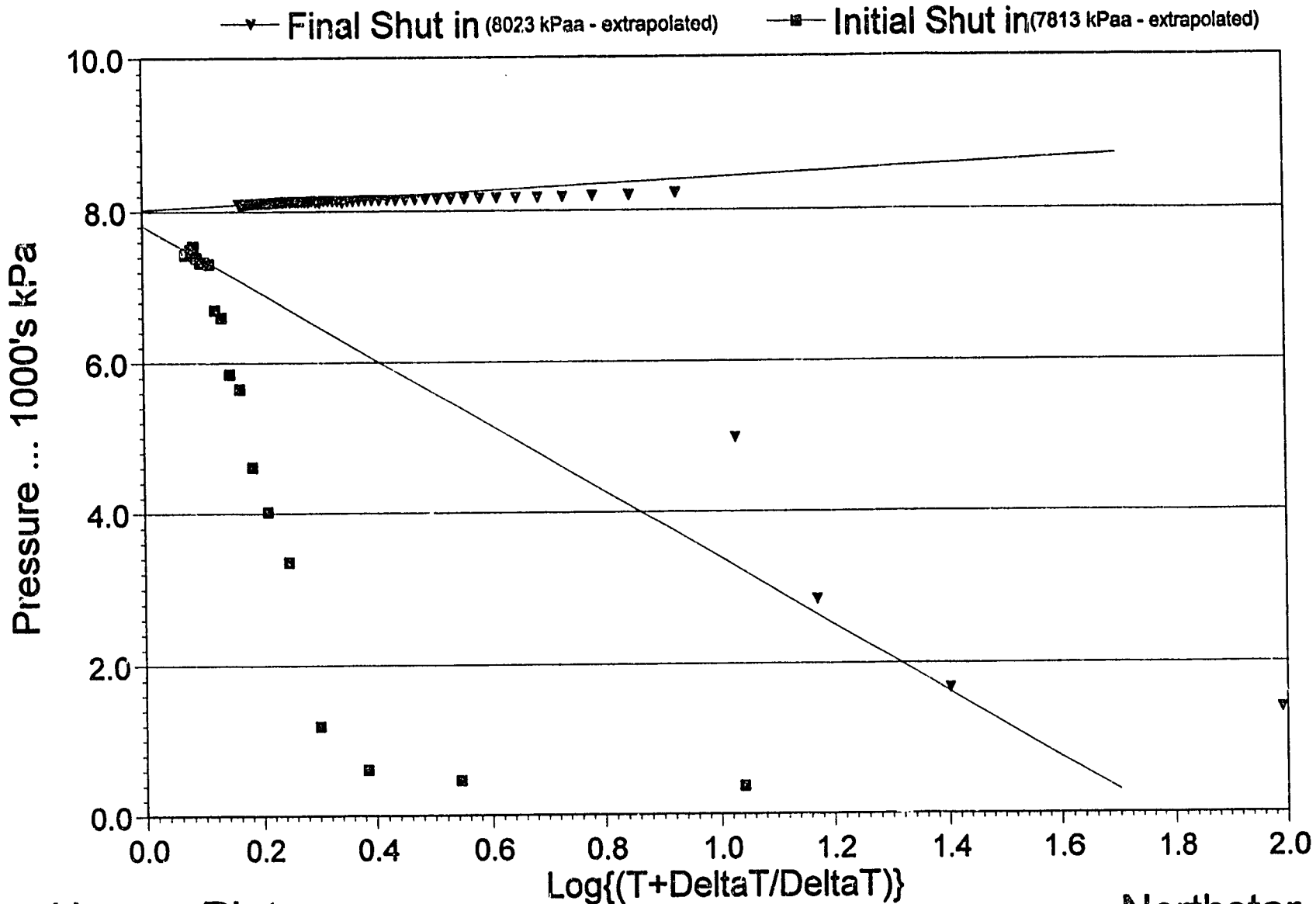
Recorder No: 20844 Depth: 664.80 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

Recorder No: 20494 Depth: 685.16 Date: 03/03/18



Horner Plot

Northstar

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 3**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* = 2.6\ \%$
$P_1 = 7813$ (kPaa)
$P_2 = 8023$ (kPaa)

× This DST **does not meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* = -0.8\ \%$
$P_{FSI} = 8089$ (kPaa)

× This DST **does not meet** this requirement.

4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

Northstar Drillstem Testers Inc.
ISO 9001-1994 Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2

T 403.265.0987
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ndst@northstardst.com
www.northstardst.com

Paramount et al Mackay Lakes K-36 60-20-120-15

DST 3 Interval: 684.0 to 711.1

DATE	03/03/18		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA (all measurements in SI units - pressure kPag, depth m)

Preflow	11 min			
Initial Shut In	62 min			
Second Flow	88 min			
Final Shut In	120 min			
A. Hydrostatic		6080	8270	8270
B. First Flow	20	120	300	310
B1. Final Flow	70	150	320	320
C. Initial Shut In	80	7120	7330	7330
D. Initial Flow	80	240	390	400
E. Final Flow	1050	1110	1300	1290
F. Final Shut In	1000	7890	8000	7990
G. Hydrostatic		7900	8100	8100
Recorder No.	20844	022	20494	20655
Range	41369	34474	41369	41369
Depth	664.80	674.12	685.16	685.16
	Recovery	Inside	Interval	Interval

RECOVERY

	Total m	In Collars m	In Pipe m	Volume m³
	85.0	85	0	0.27
Mud	85			

REMARKS AND BLOW DESCRIPTION

Preflow: Weak blow, 2 inches deep, diminishing to surface bubbles. No gas to surface.

Second Flow: Weak blow, 2 inches deep, diminishing to surface bubbles in 7minutes. No gas to surface.

INFLATE STRADDLE

Stick Up		-9.23
Drill Pipe Tally		579.11
*Drill Collar Tally		93.72
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	664.80	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	674.12	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**684.00**	
Perforations		0.86
Upper Hanger	685.16	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Cross Over Sub		0.30
Collars		18.79
Spacing		4.56
Stub		0.42
BOTTOM INTERVAL	**711.09**	
Bottom Packer		1.86
Belly Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**715.10**	

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 3

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:00
Start Recorder	16:00
Recover Recorder	09:00
Finish Lay Down Tools	11:00
Released	
Weight Set On Packer	12000
Weight Pulled Loose	34000
Initial String Weight	21000
Unseated String Weight	25000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.72
Drill Pipe Length	579.11

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

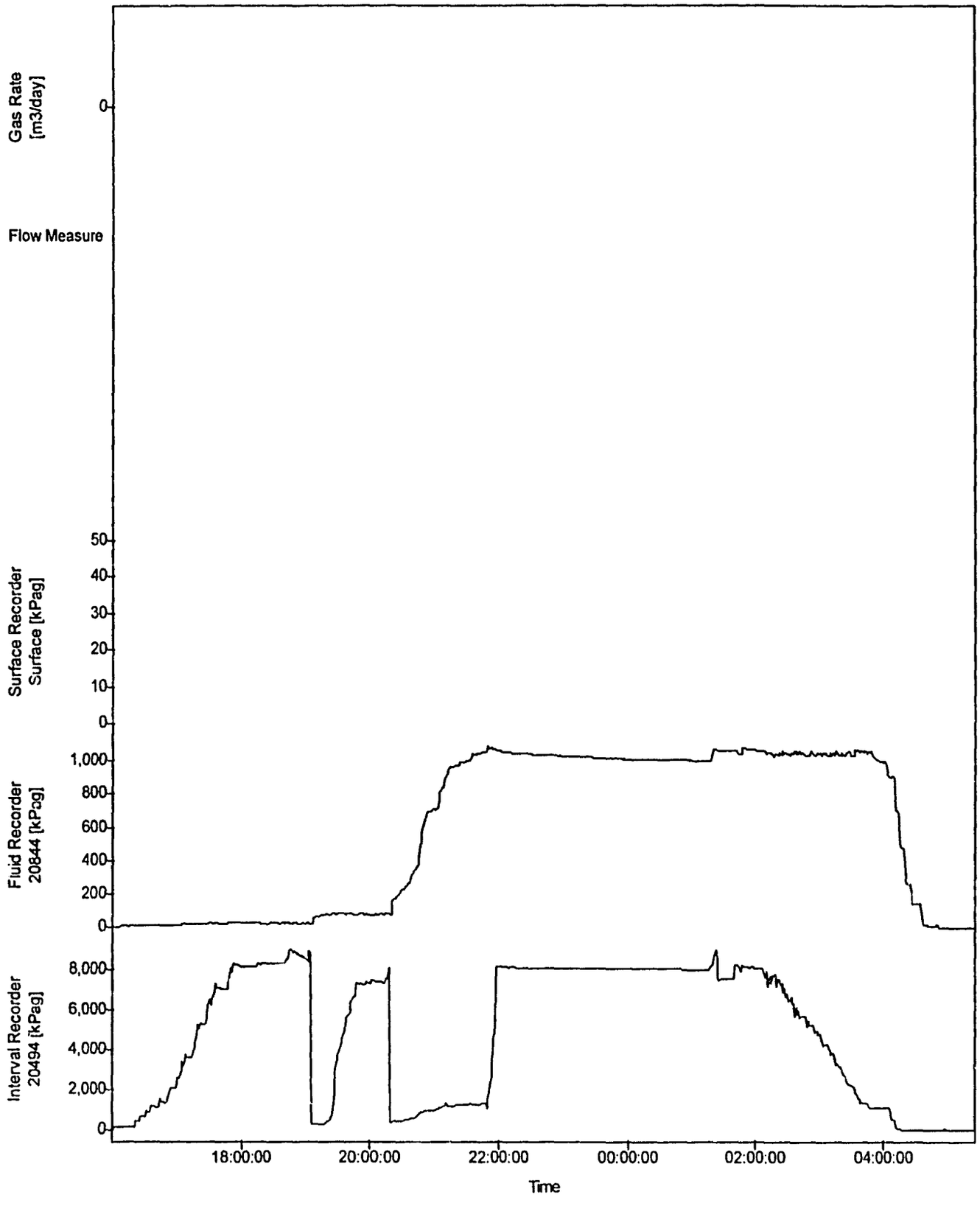
Prepared by: Jacqui Doyle

Reviewed by: David Caldwell

Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 3 Interval: 684.00 to 711.09 m

Test Date: 04/12/31



Version 0.9.8

SUBSURFACE PRESSURE MEASUREMENTS

DST Number: 2
Well: Paramount et al Mackay Lakes
Location: K-36 60-20-120-15
Date Of Test: 03/03/17 18:22:28
Test Interval: 696.00 - 711.01
Probe Serial #: 20844
Data File:
Time Interval: Fast Sample:

aramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 2

tem #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
1	03/03/18 04:34:28	0:00:16	33.00	2288.7	51 B	03/03/18 05:24:28	0:50:16	32.70	2194.7
2	03/03/18 04:35:28	0:01:16	32.99	2159.6	52	03/03/18 05:25:28	0:51:16	32.70	2195.6
3	03/03/18 04:36:28	0:02:16	32.99	2159.6	53	03/03/18 05:26:28	0:52:16	32.70	2195.9
4	03/03/18 04:37:28	0:03:16	32.99	2162.7	54	03/03/18 05:27:28	0:53:16	32.70	2209.1
5	03/03/18 04:38:28	0:04:16	32.99	2159.0	55	03/03/18 05:28:28	0:54:16	32.69	2196.4
6	03/03/18 04:39:28	0:05:16	32.99	2159.3	56	03/03/18 05:29:28	0:55:16	32.70	2198.4
7	03/03/18 04:40:28	0:06:16	32.98	2196.4	57	03/03/18 05:30:28	0:56:16	32.71	2199.8
8	03/03/18 04:41:28	0:07:16	32.98	2160.2	58	03/03/18 05:31:28	0:57:16	32.74	2201.2
9	03/03/18 04:42:28	0:08:16	32.96	2159.7	59	03/03/18 05:32:28	0:58:16	32.76	2201.4
10	03/03/18 04:43:28	0:09:16	32.95	2159.7	60 B1	03/03/18 05:33:28	0:59:16	32.75	2201.3
11	03/03/18 04:44:28	0:10:16	32.95	2159.4	61	03/03/18 05:34:28	1:00:16	32.75	2202.1
12	03/03/18 04:45:28	0:11:16	32.94	2159.5	62	03/03/18 05:35:28	1:01:16	32.78	2202.2
13	03/03/18 04:46:28	0:12:16	32.93	2159.5	63	03/03/18 05:36:28	1:02:16	32.78	2203.5
14	03/03/18 04:47:28	0:13:16	32.93	2159.9	64	03/03/18 05:37:28	1:03:16	32.78	2203.4
15	03/03/18 04:48:28	0:14:16	32.91	2174.7	65	03/03/18 05:38:28	1:04:16	32.79	2202.8
16	03/03/18 04:49:28	0:15:16	32.91	2161.4	66	03/03/18 05:39:28	1:05:16	32.78	2203.7
17	03/03/18 04:50:28	0:16:16	32.91	2159.7	67	03/03/18 05:40:28	1:06:16	32.78	2204.1
18	03/03/18 04:51:28	0:17:16	32.89	2160.1	68	03/03/18 05:41:28	1:07:16	32.79	2175.8
19	03/03/18 04:52:28	0:18:16	32.88	2160.3	69	03/03/18 05:42:28	1:08:16	32.80	2204.1
20	03/03/18 04:53:28	0:19:16	32.89	2160.4	70	03/03/18 05:43:28	1:09:16	32.79	2204.2
21	03/03/18 04:54:28	0:20:16	32.89	2163.6	71	03/03/18 05:44:28	1:10:16	32.78	2204.6
22	03/03/18 04:55:28	0:21:16	32.87	2161.8	72	03/03/18 05:45:28	1:11:16	32.80	2203.9
23	03/03/18 04:56:28	0:22:16	32.87	2163.2	73	03/03/18 05:46:28	1:12:16	32.79	2203.9
24	03/03/18 04:57:28	0:23:16	32.87	2172.9	74	03/03/18 05:47:28	1:13:16	32.78	2204.0
25	03/03/18 04:58:28	0:24:16	32.86	2165.9	75	03/03/18 05:48:28	1:14:16	32.80	2203.9
26	03/03/18 04:59:28	0:25:16	32.85	2172.5	76	03/03/18 05:49:28	1:15:16	32.77	2205.3
27	03/03/18 05:00:28	0:26:16	32.85	2166.1	77	03/03/18 05:50:28	1:16:16	32.77	2204.4
28	03/03/18 05:01:28	0:27:16	32.83	2172.8	78	03/03/18 05:51:28	1:17:16	32.78	2204.4
29	03/03/18 05:02:28	0:28:16	32.83	2162.6	79	03/03/18 05:52:28	1:18:16	32.78	2204.4
30	03/03/18 05:03:28	0:29:16	32.83	2167.6	80	03/03/18 05:53:28	1:19:16	32.77	2204.0
31	03/03/18 05:04:28	0:30:16	32.82	2172.3	81	03/03/18 05:54:28	1:20:16	32.77	2204.2
32	03/03/18 05:05:28	0:31:16	32.80	2162.9	82	03/03/18 05:55:28	1:21:16	32.78	2204.1
33	03/03/18 05:06:28	0:32:16	32.80	2158.5	83	03/03/18 05:56:28	1:22:16	32.76	2204.0
34	03/03/18 05:07:28	0:33:16	32.80	2170.2	84	03/03/18 05:57:28	1:23:16	32.75	2204.1
35	03/03/18 05:08:28	0:34:16	32.78	2183.3	85	03/03/18 05:58:28	1:24:16	32.76	2204.6
36	03/03/18 05:09:28	0:35:16	32.78	2158.7	86	03/03/18 05:59:28	1:25:16	32.75	2204.5
37	03/03/18 05:10:28	0:36:16	32.78	2187.6	87	03/03/18 06:00:28	1:26:16	32.75	2203.3
38	03/03/18 05:11:28	0:37:16	32.74	2194.0	88	03/03/18 06:01:28	1:27:16	32.75	2203.6
39	03/03/18 05:12:28	0:38:16	32.76	2181.2	89	03/03/18 06:02:28	1:28:16	32.75	2203.6
40	03/03/18 05:13:28	0:39:16	32.75	2171.8	90	03/03/18 06:03:28	1:29:16	32.75	2204.2
41	03/03/18 05:14:28	0:40:16	32.73	2184.3	91	03/03/18 06:04:28	1:30:16	32.73	2203.8
42	03/03/18 05:15:28	0:41:16	32.73	2186.4	92	03/03/18 06:05:28	1:31:16	32.74	2203.8
43	03/03/18 05:16:28	0:42:16	32.73	2183.3	93	03/03/18 06:06:28	1:32:16	32.74	2204.0
44	03/03/18 05:17:28	0:43:16	32.72	2196.8	94	03/03/18 06:07:28	1:33:16	32.76	2203.6
45	03/03/18 05:18:28	0:44:16	32.73	2182.2	95	03/03/18 06:08:28	1:34:16	32.75	2204.2
46	03/03/18 05:19:28	0:45:16	32.71	2185.5	96	03/03/18 06:09:28	1:35:16	32.73	2204.3
47	03/03/18 05:20:28	0:46:16	32.71	2184.9	97	03/03/18 06:10:28	1:36:16	32.74	2204.2
48	03/03/18 05:21:28	0:47:16	32.73	2168.3	98	03/03/18 06:11:28	1:37:16	32.73	2204.1
49	03/03/18 05:22:28	0:48:16	32.71	2192.8	99	03/03/18 06:12:28	1:38:16	32.72	2204.3
50	03/03/18 05:23:28	0:49:16	32.70	2188.3	100	03/03/18 06:13:28	1:39:16	32.71	2204.4

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 2

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
101	03/03/18 06:14:28	1:40:16	32.73	2204.3	183	03/03/18 07:36:28	3:02:16	32.80	2221.2
102	03/03/18 06:15:28	1:41:16	32.72	2204.3	184	03/03/18 07:37:28	3:03:16	32.81	2221.0
[illegible]	03/03/18 06:16:28	1:42:16	32.72	2204.5	185	03/03/18 07:38:28	3:04:16	32.81	2221.3
[illegible]	03/03/18 06:17:28	1:43:16	32.74	2203.8	186	03/03/18 07:39:28	3:05:16	32.80	2221.8
105	03/03/18 06:18:28	1:44:16	32.72	2203.9	187	03/03/18 07:40:28	3:06:16	32.80	2221.8
106	03/03/18 06:19:28	1:45:16	32.73	2204.3	188	03/03/18 07:41:28	3:07:16	32.81	2222.5
107	03/03/18 06:20:28	1:46:16	32.73	2204.6	189	03/03/18 07:42:28	3:08:16	32.81	2222.5
108	03/03/18 06:21:28	1:47:16	32.72	2204.6	190	03/03/18 07:43:28	3:09:16	32.79	2222.6
109	03/03/18 06:22:28	1:48:16	32.72	2203.6	191	03/03/18 07:44:28	3:10:16	32.80	2223.2
110	03/03/18 06:23:28	1:49:16	32.71	2203.3	192	03/03/18 07:45:28	3:11:16	32.80	2223.2
111	03/03/18 06:24:28	1:50:16	32.71	2203.3	193	03/03/18 07:46:28	3:12:16	32.79	2223.3
112	03/03/18 06:25:28	1:51:16	32.72	2204.0	194 E	03/03/18 07:47:28	3:13:16	32.80	2223.3
113	03/03/18 06:26:28	1:52:16	32.71	2204.1	195	03/03/18 07:48:28	3:14:16	32.79	2223.4
114	03/03/18 06:27:28	1:53:16	32.71	2204.1	196	03/03/18 07:49:28	3:15:16	32.79	2224.4
115	03/03/18 06:28:28	1:54:16	32.71	2203.9	197	03/03/18 07:50:28	3:16:16	32.78	2223.9
116	03/03/18 06:29:28	1:55:16	32.72	2203.3	198	03/03/18 07:51:28	3:17:16	32.77	2225.4
117	03/03/18 06:30:28	1:56:16	32.71	2203.9	199	03/03/18 07:52:28	3:18:16	32.78	2224.6
118	03/03/18 06:31:28	1:57:16	32.71	2203.8	200	03/03/18 07:53:28	3:19:16	32.77	2225.3
119	03/03/18 06:32:28	1:58:16	32.71	2203.8	201	03/03/18 07:54:28	3:20:16	32.77	2224.8
120	03/03/18 06:33:28	1:59:16	32.70	2203.8	202	03/03/18 07:55:28	3:21:16	32.77	2226.1
121 C	03/03/18 06:34:28	2:00:16	32.70	2204.1	203	03/03/18 07:56:28	3:22:16	32.75	2230.4
122	03/03/18 06:35:28	2:01:16	32.70	2203.8	204	03/03/18 07:57:28	3:23:16	32.75	2227.1
123 D	03/03/18 06:36:28	2:02:16	32.69	2204.1	205	03/03/18 07:58:28	3:24:16	32.75	2227.1
124	03/03/18 06:37:28	2:03:16	32.71	2203.2	206	03/03/18 07:59:28	3:25:16	32.75	2226.0
125	03/03/18 06:38:28	2:04:16	32.70	2203.5	207	03/03/18 08:00:28	3:26:16	32.75	2226.2
126	03/03/18 06:39:28	2:05:16	32.71	2203.6	208	03/03/18 08:01:28	3:27:16	32.74	2226.2
127	03/03/18 06:40:28	2:06:16	32.70	2203.6	209	03/03/18 08:02:28	3:28:16	32.74	2226.7
128	03/03/18 06:41:28	2:07:16	32.68	2203.3	210	03/03/18 08:03:28	3:29:16	32.74	2226.5
129	03/03/18 06:42:28	2:08:16	32.69	2203.3	211	03/03/18 08:04:28	3:30:16	32.72	2226.3
130	03/03/18 06:43:28	2:09:16	32.70	2203.8	212	03/03/18 08:05:28	3:31:16	32.72	2226.9
131	03/03/18 06:44:28	2:10:16	32.69	2204.3	213	03/03/18 08:06:28	3:32:16	32.73	2226.3
132	03/03/18 06:45:28	2:11:16	32.70	2204.3	214	03/03/18 08:07:28	3:33:16	32.73	2226.0
133	03/03/18 06:46:28	2:12:16	32.69	2204.3	215	03/03/18 08:08:28	3:34:16	32.73	2226.4
134	03/03/18 06:47:28	2:13:16	32.69	2206.3	216	03/03/18 08:09:28	3:35:16	32.72	2226.7
135	03/03/18 06:48:28	2:14:16	32.69	2207.4	217	03/03/18 08:10:28	3:36:16	32.71	2226.8
136	03/03/18 06:49:28	2:15:16	32.71	2207.0	218	03/03/18 08:11:28	3:37:16	32.73	2226.7
137	03/03/18 06:50:28	2:16:16	32.75	2208.2	219	03/03/18 08:12:28	3:38:16	32.72	2226.7
138	03/03/18 06:51:28	2:17:16	32.75	2207.9	220	03/03/18 08:13:28	3:39:16	32.72	2226.8
139	03/03/18 06:52:28	2:18:16	32.78	2208.4	221	03/03/18 08:14:28	3:40:16	32.71	2226.8
140	03/03/18 06:53:28	2:19:16	32.79	2208.5	222	03/03/18 08:15:28	3:41:16	32.73	2227.4
141	03/03/18 06:54:28	2:20:16	32.80	2208.5	223	03/03/18 08:16:28	3:42:16	32.70	2227.5
142	03/03/18 06:55:28	2:21:16	32.79	2208.5	224	03/03/18 08:17:28	3:43:16	32.70	2227.1
[illegible]	03/03/18 06:56:28	2:22:16	32.81	2208.9	225	03/03/18 08:18:28	3:44:16	32.70	2227.2
[illegible]	03/03/18 06:57:28	2:23:16	32.81	2209.3	226	03/03/18 08:19:28	3:45:16	32.70	2227.3
145	03/03/18 06:58:28	2:24:16	32.81	2209.3	227	03/03/18 08:20:28	3:46:16	32.69	2227.4
146	03/03/18 06:59:28	2:25:16	32.82	2209.4	228	03/03/18 08:21:28	3:47:16	32.69	2227.4
147	03/03/18 07:00:28	2:26:16	32.81	2210.0	229	03/03/18 08:22:28	3:48:16	32.69	2227.3
148	03/03/18 07:01:28	2:27:16	32.81	2210.6	230	03/03/18 08:23:28	3:49:16	32.70	2228.3
149	03/03/18 07:02:28	2:28:16	32.81	2210.8	231	03/03/18 08:24:28	3:50:16	32.70	2227.4
150	03/03/18 07:03:28	2:29:16	32.82	2211.0	232	03/03/18 08:25:28	3:51:16	32.69	2228.2
151	03/03/18 07:04:28	2:30:16	32.82	2211.0	233	03/03/18 08:26:28	3:52:16	32.67	2227.7
152	03/03/18 07:05:28	2:31:16	32.82	2211.0	234	03/03/18 08:27:28	3:53:16	32.68	2227.6
153	03/03/18 07:06:28	2:32:16	32.81	2211.3	235	03/03/18 08:28:28	3:54:16	32.66	2227.7
154	03/03/18 07:07:28	2:33:16	32.83	2211.7	236	03/03/18 08:29:28	3:55:16	32.68	2227.6
155	03/03/18 07:08:28	2:34:16	32.83	2211.7	237	03/03/18 08:30:28	3:56:16	32.67	2227.8
156	03/03/18 07:09:28	2:35:16	32.83	2212.3	238	03/03/18 08:31:28	3:57:16	32.67	2227.8
157	03/03/18 07:10:28	2:36:16	32.83	2213.0	239	03/03/18 08:32:28	3:58:16	32.68	2227.8
158	03/03/18 07:11:28	2:37:16	32.83	2213.0	240	03/03/18 08:33:28	3:59:16	32.68	2227.8
159	03/03/18 07:12:28	2:38:16	32.84	2213.3	241	03/03/18 08:34:28	4:00:16	32.67	2227.8
160	03/03/18 07:13:28	2:39:16	32.83	2213.8	242	03/03/18 08:35:28	4:01:16	32.67	2228.8
161	03/03/18 07:14:28	2:40:16	32.84	2213.9	243	03/03/18 08:36:28	4:02:16	32.67	2228.8
162	03/03/18 07:15:28	2:41:16	32.83	2214.8	244	03/03/18 08:37:28	4:03:16	32.67	2227.4
163	03/03/18 07:16:28	2:42:16	32.83	2214.5	245	03/03/18 08:38:28	4:04:16	32.67	2228.1
164	03/03/18 07:17:28	2:43:16	32.83	2215.4	246	03/03/18 08:39:28	4:05:16	32.65	2228.1
165	03/03/18 07:18:28	2:44:16	32.82	2215.6	247	03/03/18 08:40:28	4:06:16	32.64	2227.9
166	03/03/18 07:19:28	2:45:16	32.82	2215.6	248	03/03/18 08:41:28	4:07:16	32.63	2227.5
167	03/03/18 07:20:28	2:46:16	32.84	2215.6	249	03/03/18 08:42:28	4:08:16	32.65	2227.4
168	03/03/18 07:21:28	2:47:16	32.83	2216.0	250	03/03/18 08:43:28	4:09:16	32.65	2227.4
169	03/03/18 07:22:28	2:48:16	32.83	2216.3	251	03/03/18 08:44:28	4:10:16	32.63	2227.5
170	03/03/18 07:23:28	2:49:16	32.83	2216.9	252	03/03/18 08:45:28	4:11:16	32.64	2228.3
171	03/03/18 07:24:28	2:50:16	32.83	2218.2	253	03/03/18 08:46:28	4:12:16	32.63	2228.4
172	03/03/18 07:25:28	2:51:16	32.84	2217.1	254	03/03/18 08:47:28	4:13:16	32.63	2227.6
173	03/03/18 07:26:28	2:52:16	32.84	2217.1	255	03/03/18 08:48:28	4:14:16	32.65	2227.6
174	03/03/18 07:27:28	2:53:16	32.83	2218.5	256	03/03/18 08:49:28	4:15:16	32.64	2227.6
175	03/03/18 07:28:28	2:54:16	32.83	2218.2	257	03/03/18 08:50:28	4:16:16	32.64	2227.3
176	03/03/18 07:29:28	2:55:16	32.83	2218.2	258	03/03/18 08:51:28	4:17:16	32.64	2227.4
177	03/03/18 07:30:28	2:56:16	32.82	2218.2	259	03/03/18 08:52:28	4:18:16	32.63	2228.1
178	03/03/18 07:31:28	2:57:16	32.81	2219.0	260	03/03/18 08:53:28	4:19:16	32.62	2227.4
179	03/03/18 07:32:28	2:58:16	32.83	2219.6	261	03/03/18 08:54:28	4:20:16	32.62	2226.8
180	03/03/18 07:33:28	2:59:16	32.81	2219.7	262	03/03/18 08:55:28	4:21:16	32.61	2226.8
181	03/03/18 07:34:28	3:00:16	32.82	2220.7	263	03/03/18 08:56:28	4:22:16	32.62	2226.8
182	03/03/18 07:35:28	3:01:16	32.81	2220.7	264	03/03/18 08:57:28	4:23:16	32.62	2227.1

[illegible] 03/03/18 06:14:28 to 03/03/18 08:57:28 Elapse time: 1:40:16 to 4:23:16 Northstar

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 2

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
265	03/03/18 08:58:28	4:24:16	32.63	2227.1	347	03/03/18 10:20:28	5:46:16	32.51	2225.4
266	03/03/18 08:59:28	4:25:16	32.61	2227.0	348	03/03/18 10:21:28	5:47:16	32.50	2225.3
267	03/03/18 09:00:28	4:26:16	32.61	2226.8	349	03/03/18 10:22:28	5:48:16	32.50	2225.4
268	03/03/18 09:01:28	4:27:16	32.60	2226.7	350	03/03/18 10:23:28	5:49:16	32.52	2225.4
269	03/03/18 09:02:28	4:28:16	32.61	2226.5	351	03/03/18 10:24:28	5:50:16	32.51	2225.4
270	03/03/18 09:03:28	4:29:16	32.61	2226.5	352	03/03/18 10:25:28	5:51:16	32.50	2225.4
271	03/03/18 09:04:28	4:30:16	32.62	2226.5	353	03/03/18 10:26:28	5:52:16	32.50	2225.4
272	03/03/18 09:05:28	4:31:16	32.59	2226.6	354	03/03/18 10:27:28	5:53:16	32.50	2226.0
273	03/03/18 09:06:28	4:32:16	32.60	2226.7	355 F	03/03/18 10:28:28	5:54:16	32.49	2225.5
274	03/03/18 09:07:28	4:33:16	32.61	2226.8	356	03/03/18 10:29:28	5:55:16	32.51	2225.4
275	03/03/18 09:08:28	4:34:16	32.62	2226.6	357	03/03/18 10:30:28	5:56:16	32.51	2225.8
276	03/03/18 09:09:28	4:35:16	32.62	2225.9	358	03/03/18 10:31:28	5:57:16	32.50	2225.4
277	03/03/18 09:10:28	4:36:16	32.59	2227.2	359	03/03/18 10:32:28	5:58:16	32.49	2225.8
278	03/03/18 09:11:28	4:37:16	32.59	2226.9	360	03/03/18 10:33:28	5:59:16	32.51	2225.7
279	03/03/18 09:12:28	4:38:16	32.60	2226.6	361	03/03/18 10:34:28	6:00:16	32.52	2225.9
280	03/03/18 09:13:28	4:39:16	32.61	2226.5	362	03/03/18 10:35:28	6:01:16	32.49	2225.9
281	03/03/18 09:14:28	4:40:16	32.59	2226.8	363	03/03/18 10:36:28	6:02:16	32.50	2226.0
282	03/03/18 09:15:28	4:41:16	32.59	2226.7	364	03/03/18 10:37:28	6:03:16	32.49	2202.3
283	03/03/18 09:16:28	4:42:16	32.58	2226.8	365	03/03/18 10:38:28	6:04:16	32.49	2228.0
284	03/03/18 09:17:28	4:43:16	32.59	2226.1	366	03/03/18 10:39:28	6:05:16	32.49	2228.4
285	03/03/18 09:18:28	4:44:16	32.59	2227.3	367	03/03/18 10:40:28	6:06:16	32.48	2228.4
286	03/03/18 09:19:28	4:45:16	32.58	2227.1	368	03/03/18 10:41:28	6:07:16	32.48	2228.1
287	03/03/18 09:20:28	4:46:16	32.59	2227.3	369	03/03/18 10:42:28	6:08:16	32.49	2228.0
288	03/03/18 09:21:28	4:47:16	32.59	2226.1	370	03/03/18 10:43:28	6:09:16	32.48	2225.2
289	03/03/18 09:22:28	4:48:16	32.58	2226.5	371	03/03/18 10:44:28	6:10:16	32.48	2228.7
290	03/03/18 09:23:28	4:49:16	32.58	2226.8	372	03/03/18 10:45:28	6:11:16	32.50	2220.7
291	03/03/18 09:24:28	4:50:16	32.58	2226.9	373	03/03/18 10:46:28	6:12:16	32.49	2228.3
292	03/03/18 09:25:28	4:51:16	32.58	2226.2	374	03/03/18 10:47:28	6:13:16	32.48	2228.6
293	03/03/18 09:26:28	4:52:16	32.59	2226.0	375	03/03/18 10:48:28	6:14:16	32.49	2228.7
294	03/03/18 09:27:28	4:53:16	32.58	2225.9	376	03/03/18 10:49:28	6:15:16	32.50	2229.5
295	03/03/18 09:28:28	4:54:16	32.59	2225.3	377	03/03/18 10:50:28	6:16:16	32.48	2222.4
296	03/03/18 09:29:28	4:55:16	32.57	2226.7	378	03/03/18 10:51:28	6:17:16	32.48	2141.8
297	03/03/18 09:30:28	4:56:16	32.56	2226.2	379	03/03/18 10:52:28	6:18:16	32.47	2228.8
298	03/03/18 09:31:28	4:57:16	32.56	2226.1	380	03/03/18 10:53:28	6:19:16	32.47	2228.8
299	03/03/18 09:32:28	4:58:16	32.57	2226.7	381	03/03/18 10:54:28	6:20:16	32.48	2228.7
300	03/03/18 09:33:28	4:59:16	32.56	2226.7	382	03/03/18 10:55:28	6:21:16	32.46	2228.8
301	03/03/18 09:34:28	5:00:16	32.58	2226.5	383	03/03/18 10:56:28	6:22:16	32.49	2249.8
302	03/03/18 09:35:28	5:01:16	32.56	2226.5	384	03/03/18 10:57:28	6:23:16	32.47	2229.5
303	03/03/18 09:36:28	5:02:16	32.56	2226.4	385	03/03/18 10:58:28	6:24:16	32.48	2227.9
304	03/03/18 09:37:28	5:03:16	32.56	2226.4	386	03/03/18 10:59:28	6:25:16	32.49	2250.8
305	03/03/18 09:38:28	5:04:16	32.56	2226.1	387	03/03/18 11:00:28	6:26:16	32.48	2228.4
306	03/03/18 09:39:28	5:05:16	32.55	2225.4	388	03/03/18 11:01:28	6:27:16	32.46	2221.7
307	03/03/18 09:40:28	5:06:16	32.55	2226.9	389	03/03/18 11:02:28	6:28:16	32.47	2239.7
308	03/03/18 09:41:28	5:07:16	32.55	2225.7	390	03/03/18 11:03:28	6:29:16	32.46	2228.0
309	03/03/18 09:42:28	5:08:16	32.55	2225.8	391	03/03/18 11:04:28	6:30:16	32.45	2017.8
310	03/03/18 09:43:28	5:09:16	32.55	2225.7	392	03/03/18 11:05:28	6:31:16	32.45	2228.1
311	03/03/18 09:44:28	5:10:16	32.54	2226.2	393	03/03/18 11:06:28	6:32:16	32.43	2196.8
312	03/03/18 09:45:28	5:11:16	32.56	2226.1	394	03/03/18 11:07:28	6:33:16	32.43	2226.1
313	03/03/18 09:46:28	5:12:16	32.55	2226.1	395	03/03/18 11:08:28	6:34:16	32.42	2226.9
314	03/03/18 09:47:28	5:13:16	32.54	2226.2	396	03/03/18 11:09:28	6:35:16	32.41	2260.0
315	03/03/18 09:48:28	5:14:16	32.55	2226.1	397	03/03/18 11:10:28	6:36:16	32.40	2227.7
316	03/03/18 09:49:28	5:15:16	32.54	2225.3	398	03/03/18 11:11:28	6:37:16	32.39	2227.6
317	03/03/18 09:50:28	5:16:16	32.54	2225.4	399	03/03/18 11:12:28	6:38:16	32.38	2227.3
318	03/03/18 09:51:28	5:17:16	32.54	2225.4	400	03/03/18 11:13:28	6:39:16	32.36	2227.5
319	03/03/18 09:52:28	5:18:16	32.53	2225.6	401	03/03/18 11:14:28	6:40:16	32.35	2226.8
320	03/03/18 09:53:28	5:19:16	32.52	2225.8	402	03/03/18 11:15:28	6:41:16	32.33	2226.4
321	03/03/18 09:54:28	5:20:16	32.55	2226.3	403	03/03/18 11:16:28	6:42:16	32.28	2226.9
322	03/03/18 09:55:28	5:21:16	32.54	2226.0	404	03/03/18 11:17:28	6:43:16	32.23	2226.0
323	03/03/18 09:56:28	5:22:16	32.54	2226.0	405	03/03/18 11:18:28	6:44:16	32.17	2226.1
324	03/03/18 09:57:28	5:23:16	32.53	2226.1	406	03/03/18 11:19:28	6:45:16	32.12	2167.6
325	03/03/18 09:58:28	5:24:16	32.54	2226.0	407	03/03/18 11:20:28	6:46:16	32.08	2225.8
326	03/03/18 09:59:28	5:25:16	32.52	2225.8	408	03/03/18 11:21:28	6:47:16	32.05	2227.2
327	03/03/18 10:00:28	5:26:16	32.54	2225.7	409	03/03/18 11:22:28	6:48:16	32.01	2239.5
328	03/03/18 10:01:28	5:27:16	32.52	2225.8	410	03/03/18 11:23:28	6:49:16	31.99	2223.6
329	03/03/18 10:02:28	5:28:16	32.52	2225.8	411	03/03/18 11:24:28	6:50:16	31.95	2226.1
330	03/03/18 10:03:28	5:29:16	32.52	2225.0	412	03/03/18 11:25:28	6:51:16	31.92	2167.1
331	03/03/18 10:04:28	5:30:16	32.52	2225.8	413	03/03/18 11:26:28	6:52:16	31.90	2226.4
332	03/03/18 10:05:28	5:31:16	32.53	2225.9	414	03/03/18 11:27:28	6:53:16	31.86	2155.4
333	03/03/18 10:06:28	5:32:16	32.52	2225.8	415	03/03/18 11:28:28	6:54:16	31.83	2226.9
334	03/03/18 10:07:28	5:33:16	32.52	2225.6	416	03/03/18 11:29:28	6:55:16	31.78	2226.5
335	03/03/18 10:08:28	5:34:16	32.54	2225.6	417	03/03/18 11:30:28	6:56:16	31.74	2225.6
336	03/03/18 10:09:28	5:35:16	32.52	2224.9	418	03/03/18 11:31:28	6:57:16	31.70	2169.5
337	03/03/18 10:10:28	5:36:16	32.53	2224.9	419	03/03/18 11:32:28	6:58:16	31.66	2226.3
338	03/03/18 10:11:28	5:37:16	32.53	2224.9	420	03/03/18 11:33:28	6:59:16	31.61	2208.6
339	03/03/18 10:12:28	5:38:16	32.52	2226.1	421	03/03/18 11:34:28	7:00:16	31.53	2225.1
340	03/03/18 10:13:28	5:39:16	32.51	2225.8	422	03/03/18 11:35:28	7:01:16	31.43	2251.1
341	03/03/18 10:14:28	5:40:16	32.51	2225.4	423	03/03/18 11:36:28	7:02:16	31.32	2224.8
342	03/03/18 10:15:28	5:41:16	32.51	2225.4	424	03/03/18 11:37:28	7:03:16	31.20	2228.5
343	03/03/18 10:16:28	5:42:16	32.51	2225.4	425	03/03/18 11:38:28	7:04:16	31.12	2224.5
344	03/03/18 10:17:28	5:43:16	32.51	2226.4	426	03/03/18 11:39:28	7:05:16	31.05	2218.3
345	03/03/18 10:18:28	5:44:16	32.51	2226.4	427	03/03/18 11:40:28	7:06:16	31.02	2224.9
346	03/03/18 10:19:28	5:45:16	32.51	2225.4	428	03/03/18 11:41:28	7:07:16	30.97	2225.1

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 2

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
429	03/03/18 11:42:28	7:08:16	30.85	2224.4	511	03/03/18 13:04:28	8:30:16	22.32	1333.9
430	03/03/18 11:43:28	7:09:16	30.70	2224.4	512	03/03/18 13:05:28	8:31:16	22.26	1337.3
[redacted]	03/03/18 11:44:28	7:10:16	30.59	2277.1	513	03/03/18 13:06:28	8:32:16	22.22	1177.8
[redacted]	03/03/18 11:45:28	7:11:16	30.51	2224.0	514	03/03/18 13:07:28	8:33:16	22.15	1155.8
433	03/03/18 11:46:28	7:12:16	30.41	2054.6	515	03/03/18 13:08:28	8:34:16	22.10	1153.8
434	03/03/18 11:47:28	7:13:16	30.28	2223.3	516	03/03/18 13:09:28	8:35:16	22.01	1153.7
435	03/03/18 11:48:28	7:14:16	30.13	2222.8	517	03/03/18 13:10:28	8:36:16	21.92	1154.0
436	03/03/18 11:49:28	7:15:16	30.01	2222.5	518	03/03/18 13:11:28	8:37:16	21.81	1152.9
437	03/03/18 11:50:28	7:16:16	29.91	2222.8	519	03/03/18 13:12:28	8:38:16	21.71	1153.3
438	03/03/18 11:51:28	7:17:16	29.78	2223.2	520	03/03/18 13:13:28	8:39:16	21.63	1153.6
439	03/03/18 11:52:28	7:18:16	29.68	2222.0	521	03/03/18 13:14:28	8:40:16	21.57	1154.4
440	03/03/18 11:53:28	7:19:16	29.54	2222.6	522	03/03/18 13:15:28	8:41:16	21.51	1155.3
441	03/03/18 11:54:28	7:20:16	29.37	2222.7	523	03/03/18 13:16:28	8:42:16	21.42	1166.3
442	03/03/18 11:55:28	7:21:16	29.26	2229.7	524	03/03/18 13:17:28	8:43:16	21.33	1155.3
443	03/03/18 11:56:28	7:22:16	29.21	2233.8	525	03/03/18 13:18:28	8:44:16	21.26	1156.4
444	03/03/18 11:57:28	7:23:16	29.11	2223.0	526	03/03/18 13:19:28	8:45:16	21.21	979.6
445	03/03/18 11:58:28	7:24:16	28.96	2426.4	527	03/03/18 13:20:28	8:46:16	21.16	977.4
446	03/03/18 11:59:28	7:25:16	28.75	2223.3	528	03/03/18 13:21:28	8:47:16	21.13	977.5
447	03/03/18 12:00:28	7:26:16	28.62	2281.5	529	03/03/18 13:22:28	8:48:16	21.10	968.8
448	03/03/18 12:01:28	7:27:16	28.52	2221.0	530	03/03/18 13:23:28	8:49:16	21.05	978.0
449	03/03/18 12:02:28	7:28:16	28.43	2366.2	531	03/03/18 13:24:28	8:50:16	21.00	938.3
450	03/03/18 12:03:28	7:29:16	28.34	2222.8	532	03/03/18 13:25:28	8:51:16	20.94	791.5
451	03/03/18 12:04:28	7:30:16	28.25	2183.9	533	03/03/18 13:26:28	8:52:16	20.90	786.8
452	03/03/18 12:05:28	7:31:16	28.12	2221.9	534	03/03/18 13:27:28	8:53:16	20.84	787.8
453	03/03/18 12:06:28	7:32:16	27.97	2221.8	535	03/03/18 13:28:28	8:54:16	20.79	755.6
454	03/03/18 12:07:28	7:33:16	27.87	2301.3	536	03/03/18 13:29:28	8:55:16	20.70	787.3
455	03/03/18 12:08:28	7:34:16	27.79	2231.9	537	03/03/18 13:30:28	8:56:16	20.62	744.0
456	03/03/18 12:09:28	7:35:16	27.68	2193.5	538	03/03/18 13:31:28	8:57:16	20.53	605.2
457	03/03/18 12:10:28	7:36:16	27.53	2222.7	539	03/03/18 13:32:28	8:58:16	20.46	602.6
458	03/03/18 12:11:28	7:37:16	27.35	1971.3	540	03/03/18 13:33:28	8:59:16	20.40	591.3
459	03/03/18 12:12:28	7:38:16	27.23	2220.5	541	03/03/18 13:34:28	9:00:16	20.35	606.0
460	03/03/18 12:13:28	7:39:16	27.11	2223.8	542	03/03/18 13:35:28	9:01:16	20.31	473.0
461	03/03/18 12:14:28	7:40:16	27.00	2210.3	543	03/03/18 13:36:28	9:02:16	20.28	416.5
462	03/03/18 12:15:28	7:41:16	26.89	2213.7	544	03/03/18 13:37:28	9:03:16	20.25	417.2
463	03/03/18 12:16:28	7:42:16	26.73	2207.8	545	03/03/18 13:38:28	9:04:16	20.22	416.4
464	03/03/18 12:17:28	7:43:16	26.59	2204.0	546	03/03/18 13:39:28	9:05:16	20.17	342.7
465	03/03/18 12:18:28	7:44:16	26.51	2197.7	547	03/03/18 13:40:28	9:06:16	20.14	238.7
466	03/03/18 12:19:28	7:45:16	26.44	2194.9	548	03/03/18 13:41:28	9:07:16	20.07	239.0
467	03/03/18 12:20:28	7:46:16	26.29	2191.7	549	03/03/18 13:42:28	9:08:16	20.01	234.5
468	03/03/18 12:21:28	7:47:16	26.15	2187.5	550	03/03/18 13:43:28	9:09:16	19.93	240.0
469	03/03/18 12:22:28	7:48:16	25.95	2183.1	551	03/03/18 13:44:28	9:10:16	19.87	239.0
470	03/03/18 12:23:28	7:49:16	25.76	2180.1	552	03/03/18 13:45:28	9:11:16	19.80	238.8
[redacted]	03/03/18 12:24:28	7:50:16	25.63	2177.8	553	03/03/18 13:46:28	9:12:16	19.76	238.8
[redacted]	03/03/18 12:25:28	7:51:16	25.53	2174.1	554	03/03/18 13:47:28	9:13:16	19.72	221.3
473	03/03/18 12:26:28	7:52:16	25.37	2171.9	555	03/03/18 13:48:28	9:14:16	19.64	19.5
474	03/03/18 12:27:28	7:53:16	25.20	2169.1	556	03/03/18 13:49:28	9:15:16	19.55	19.8
475	03/03/18 12:28:28	7:54:16	25.12	2166.0	557	03/03/18 13:50:28	9:16:16	19.43	20.8
476	03/03/18 12:29:28	7:55:16	24.97	2164.6	558	03/03/18 13:51:28	9:17:16	19.32	20.6
477	03/03/18 12:30:28	7:56:16	24.78	2162.4	559	03/03/18 13:52:28	9:18:16	19.25	20.4
478	03/03/18 12:31:28	7:57:16	24.62	2159.6	560	03/03/18 13:53:28	9:19:16	19.21	20.6
479	03/03/18 12:32:28	7:58:16	24.51	2158.8					
480	03/03/18 12:33:28	7:59:16	24.39	2158.0					
481	03/03/18 12:34:28	8:00:16	24.30	2155.9					
482	03/03/18 12:35:28	8:01:16	24.19	2155.3					
483	03/03/18 12:36:28	8:02:16	24.04	2151.4					
484	03/03/18 12:37:28	8:03:16	23.95	2150.2					
485	03/03/18 12:38:28	8:04:16	23.86	2149.1					
486	03/03/18 12:39:28	8:05:16	23.81	2147.9					
487	03/03/18 12:40:28	8:06:16	23.75	2146.3					
488	03/03/18 12:41:28	8:07:16	23.64	2144.8					
489	03/03/18 12:42:28	8:08:16	23.57	2144.6					
490	03/03/18 12:43:28	8:09:16	23.43	2143.8					
491	03/03/18 12:44:28	8:10:16	23.31	2142.0					
492	03/03/18 12:45:28	8:11:16	23.24	2141.6					
493	03/03/18 12:46:28	8:12:16	23.18	2122.9					
494	03/03/18 12:47:28	8:13:16	23.12	2122.6					
495	03/03/18 12:48:28	8:14:16	23.04	2237.4					
496	03/03/18 12:49:28	8:15:16	23.00	2145.3					
497	03/03/18 12:50:28	8:16:16	22.96	2113.1					
498	03/03/18 12:51:28	8:17:16	22.93	2095.7					
499	03/03/18 12:52:28	8:18:16	22.89	1931.1					
500	03/03/18 12:53:28	8:19:16	22.85	1936.5					
501	03/03/18 12:54:28	8:20:16	22.79	1923.2					
502	03/03/18 12:55:28	8:21:16	22.73	1749.0					
503	03/03/18 12:56:28	8:22:16	22.66	1766.9					
504	03/03/18 12:57:28	8:23:16	22.59	1545.9					
505	03/03/18 12:58:28	8:24:16	22.56	1540.4					
506	03/03/18 12:59:28	8:25:16	22.51	1537.8					
507	03/03/18 13:00:28	8:26:16	22.48	1531.8					
508	03/03/18 13:01:28	8:27:16	22.45	1532.6					
509	03/03/18 13:02:28	8:28:16	22.42	1525.9					
510	03/03/18 13:03:28	8:29:16	22.36	1362.3					

INFLATE - TALLY SHEET

Northstar Drillstem Testers Inc.
ISO 9001-Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2
www.northstardst.com

1-800-567-8420 (24 HRS)
T 403.265.8387 (24 HRS)
F 403.265.6776

Company: Paramount Resources LTD

Well Name: Paramount ET AL Mackay Lakes

Well Number: K36 60-20-125-15

DST NO. Two Interval 696 - 711

Customer Representative:

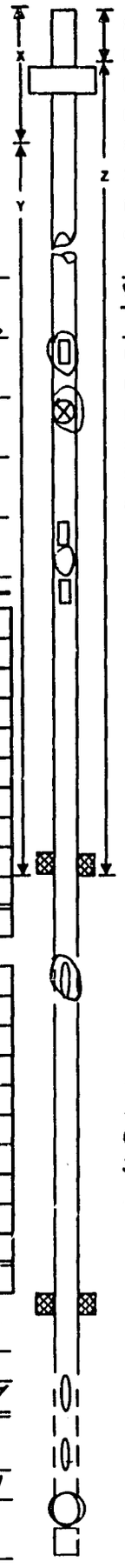
Tester: E. Flood / T. Blondin

1	1850	11	1886	21	1900	31	1879	41			
2	1929	12	1904	22	1902	32		42			
3	1886	13	1881	23	1862	33	SV. 46	43			
4	1903	14	1885	24	1926	34		44			
5	1858	15	1895	25	1900	35		45			
6	1896	16	1894	26	1925	36		46			
7	1926	17	1903	27	1922	37		47			
8	1901	18	1924	28	1892	38		48			
9	1896	19	1872	29	1869	39		49			
10	1906	20	1902	30	1921	40		50			
A	18939	B	18946	C	19014	D	1925	E			

51		61		71		81		91			
52		62		72		82		92			
53		63		73		83		93			
54		64		74		84		94			
55		65		75		85		95			
56		66		76		86		96			
57		67		77		87		97			
58		68		78		88		98			
59		69		79		89		99			
60		70		80		90		100			
F		G		H		I		J			

Drill Pipe		Drill Collars		Pipe Out	
A	18939	1	1888		
B	18946	2	1823		
C	19014	3	15.47		
D	19.25	4	1896		
E		5	1869		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	588.24	DC	93.23		

D.P 588.24
D.C 93.23
X = Total Pipe 681.47
Y = Tool Above Interval 20.40
X + Y 701.87
Z = Top of Interval 696
Stick Up = X + Y - Z -5.87



Stick Up	[-5.87]		
KB			
Drill Pipe Tally	588.24		
Drill Collar Tally	93.23		
Stabbing Valve			
XO Sub	.3		
Reversing Sub	.3		
Choke Sub			
P/O	.3		
Upper Hanger	.3	676.80	Recorder # 20844
Bomb Well	1.22		
Hydraulic Tool	1.62		
Sampler			
Sampler	1.12		
~~Bott~~ Squ	1.00	680.12	
Upper Hanger	4.36	684.76	Rt Recorder # 22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N B459
Safety Joint	.73		
Inflate Pump	99		S/N 49
Screen	1.32		
Release System	1.12		S/N 1017-10
Top Packer	1.78	696.00	**Top of Interval**
			Element # 67049
Perforations	.86		
Upper Hanger	.30	697.16	Recorder # 20494
Lower Hanger	1.56		Recorder # 20655
XO Sub			
Collar	9.45		
Spacing	1.82		
XO Sub	.30		
Packer Stub	.42	711.01	**Bottom of Interval**
Bottom Packer	1.86		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	715.02	**Bottom Tools**

Reliable Drillstem Testing

Lowest "Misruns" in the Industry!

Northstar Drillstem Testers Inc.
ISO 9001-Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2
Tel: 403.265.0987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	Paramount Resources LTD	Date	March 18
Well Name	Paramount et Al Mackay Lakes	Formation	
Well Location	K-36-60-20-123-15	Type of test	Inflate Straddle
License No.	1966	Kelly Bushing	294.73 Gr. Elevation 290.5
DST No.	~~Two~~ TWO	Interval	696-711 Total Depth 800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: No Blow to Pail on opening, No Gas to Surface.

Secondflow: No Blow to Pail on opening, No Gas To Surface,

Comments: FRESH WATER RECOVERED

PRESSURE DATA

Recorder#	20494	Depth	697.16
A. Init.Hyd.	8280	kPa	
B. First Flow	2430	kPa	
B1. Final Flow	2430	kPa	
C. Init.Shut In	7510	kPa	
D. Init.Flow	2440	kPa	
E. Final Flow	2450	kPa	
F. Final Shut In	7520	kPa	
G. Final Hyd.	8200	kPa	

FLUID RECOVERY

Oil		m °API
Water	161.0	m
Mud		m
		m
		m
		m
Total Fluid	161.	m
Samples sent to:	AGAT	
BHS#	203	
Fluid Samples	4	Gas Samples

GAS RECOVERY

Measured with Choke manifold

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time	
Arrive on Location	03/03/17	14:30	hr
Start Pick up Tools	"	17:30	hr
Start Recorder	"	17:55	hr
Recover Recorder	03/03/18	14:00	hr
Finish Lay Down Tools		14:30	hr
Released			hr

Weight Set on Packer	12,000	daN
Weight Pulled Loose	38,000	daN
Initial String Weight	21,000	daN
Unseated String Weight	22,000	daN

MUD DATA

Mud Type	~~Polymer~~ Gel/Chem	
Weight	1180	kg/m³
Viscosity	80	s/L
Mud Drop		m
Amount of Fill		m
Bottom Hole Temp.	35	°C
Preflow	10	min
Initial	60	min
Second Flow	~~60~~ 66	min
Final Shut In	~~120~~ 162	min

PIPE DATA

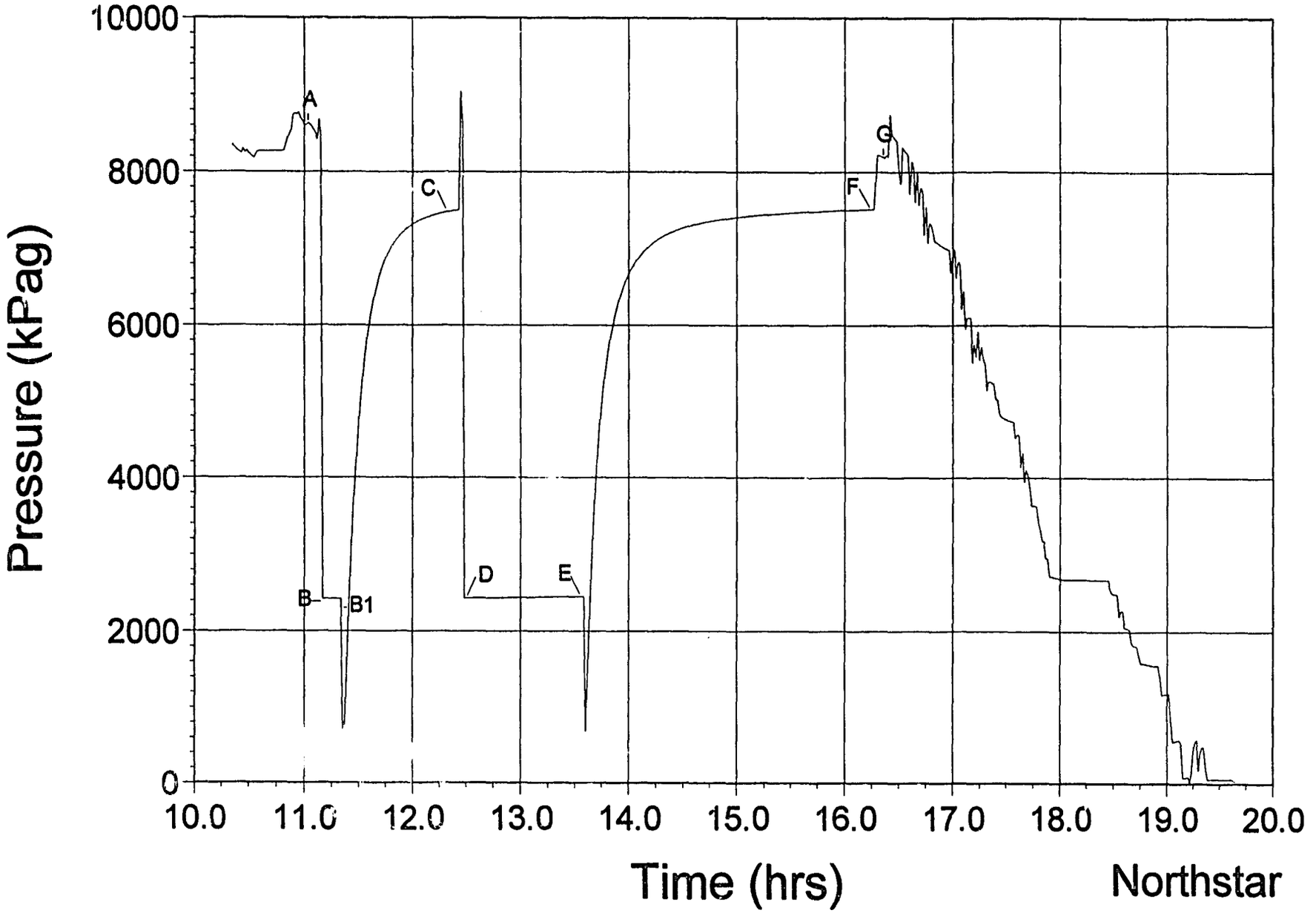
	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	143	63.5	93.23
Drill Pipe	114.3	24.7	97.2	588.28
Water Cushion		Stands		

Time begin	Time End
05:24	05:34
05:34	06:42
06:42	07:48
07:48	10:30

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

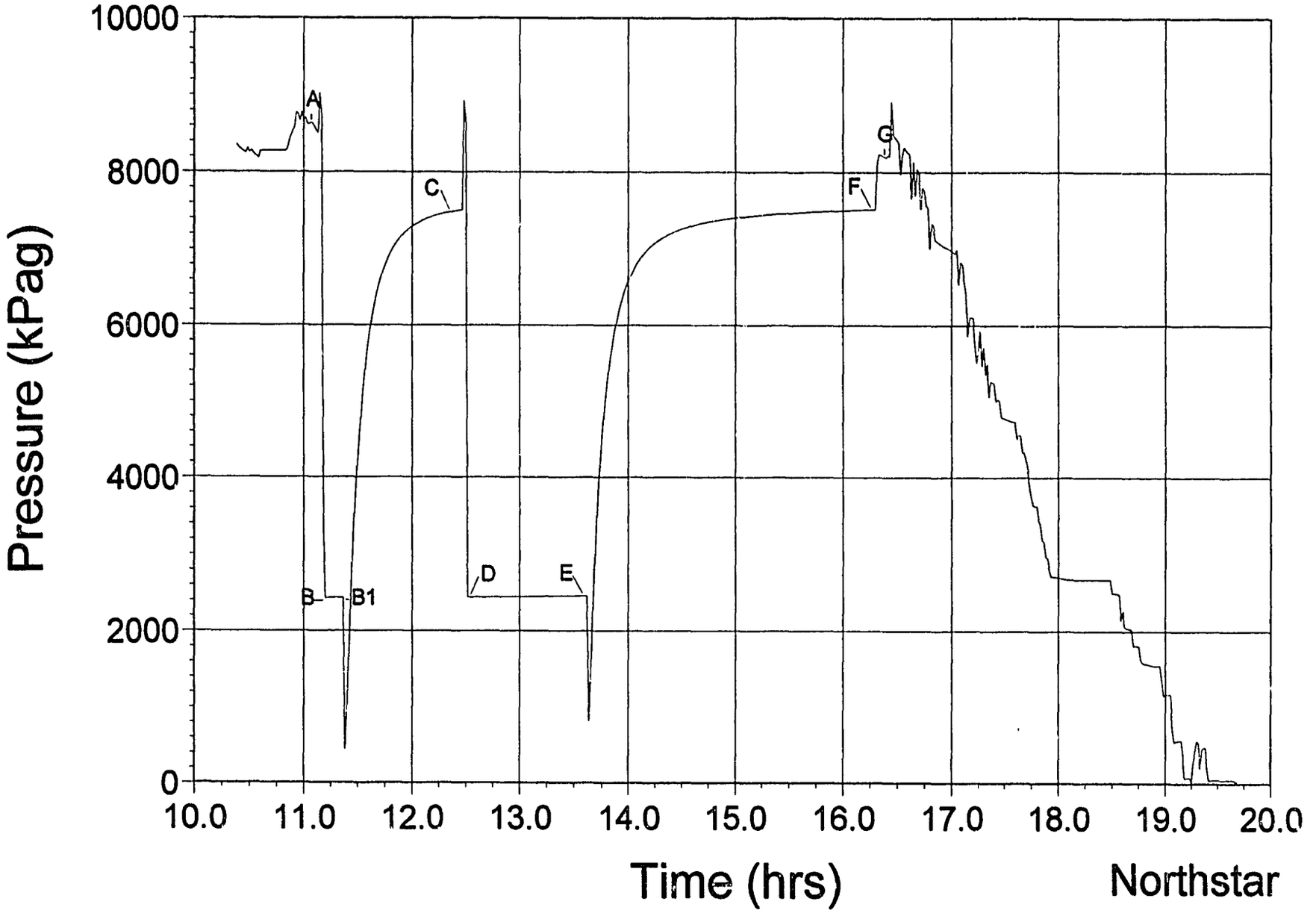
Recorder No: 20655 Depth: 697.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

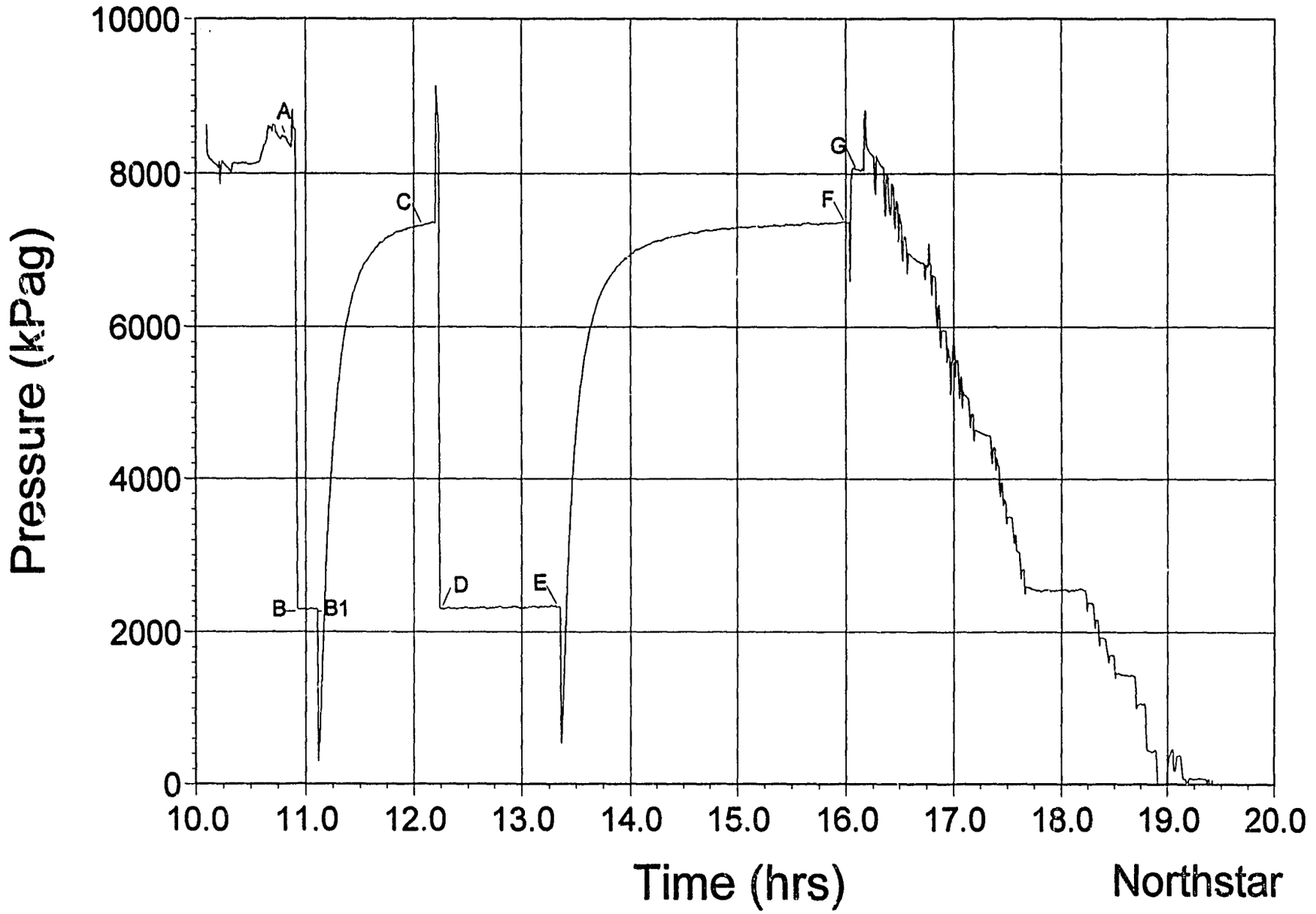
Recorder No: 20494 Depth: 697.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

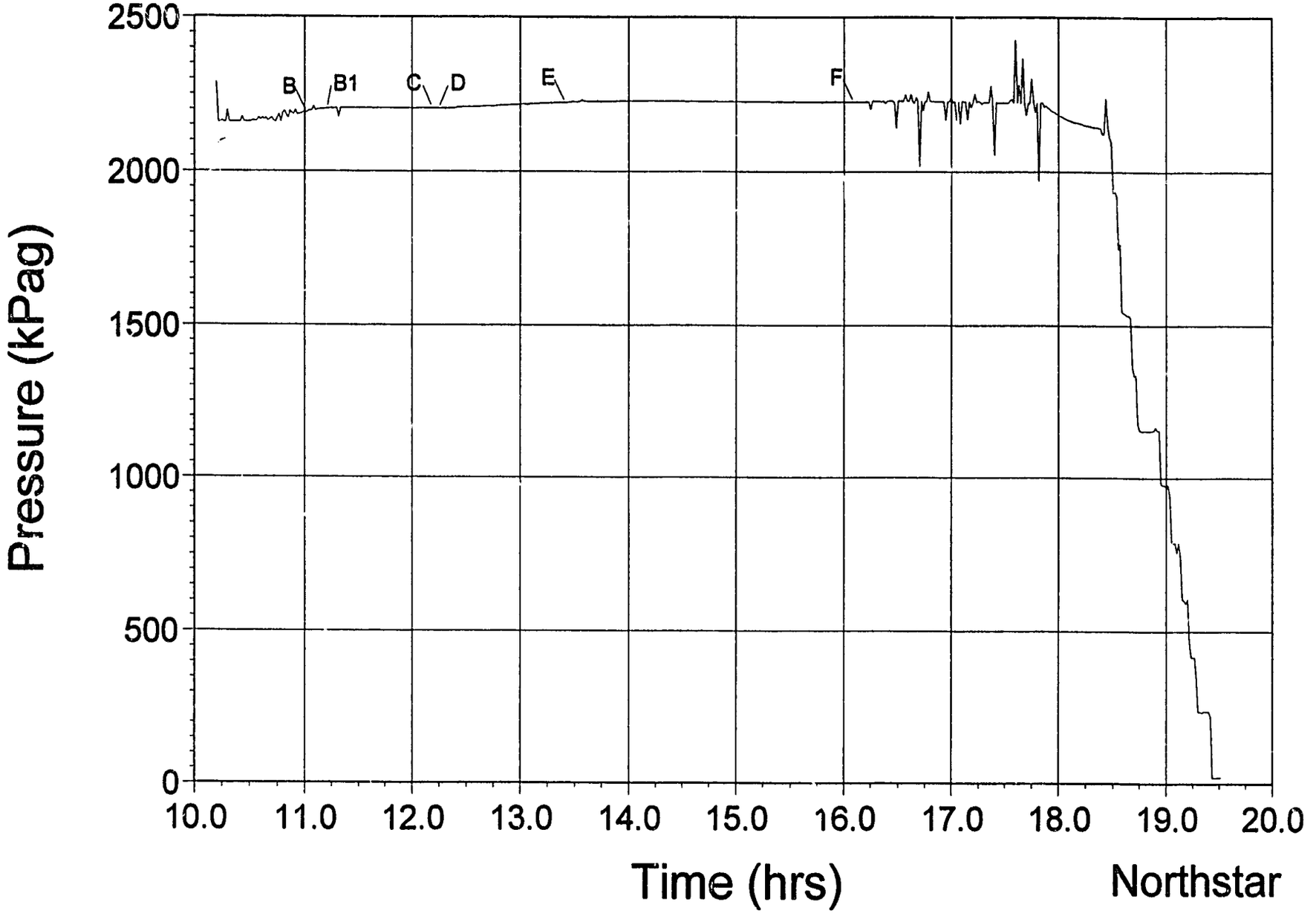
Recorder No: 022 Depth: 686.12 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

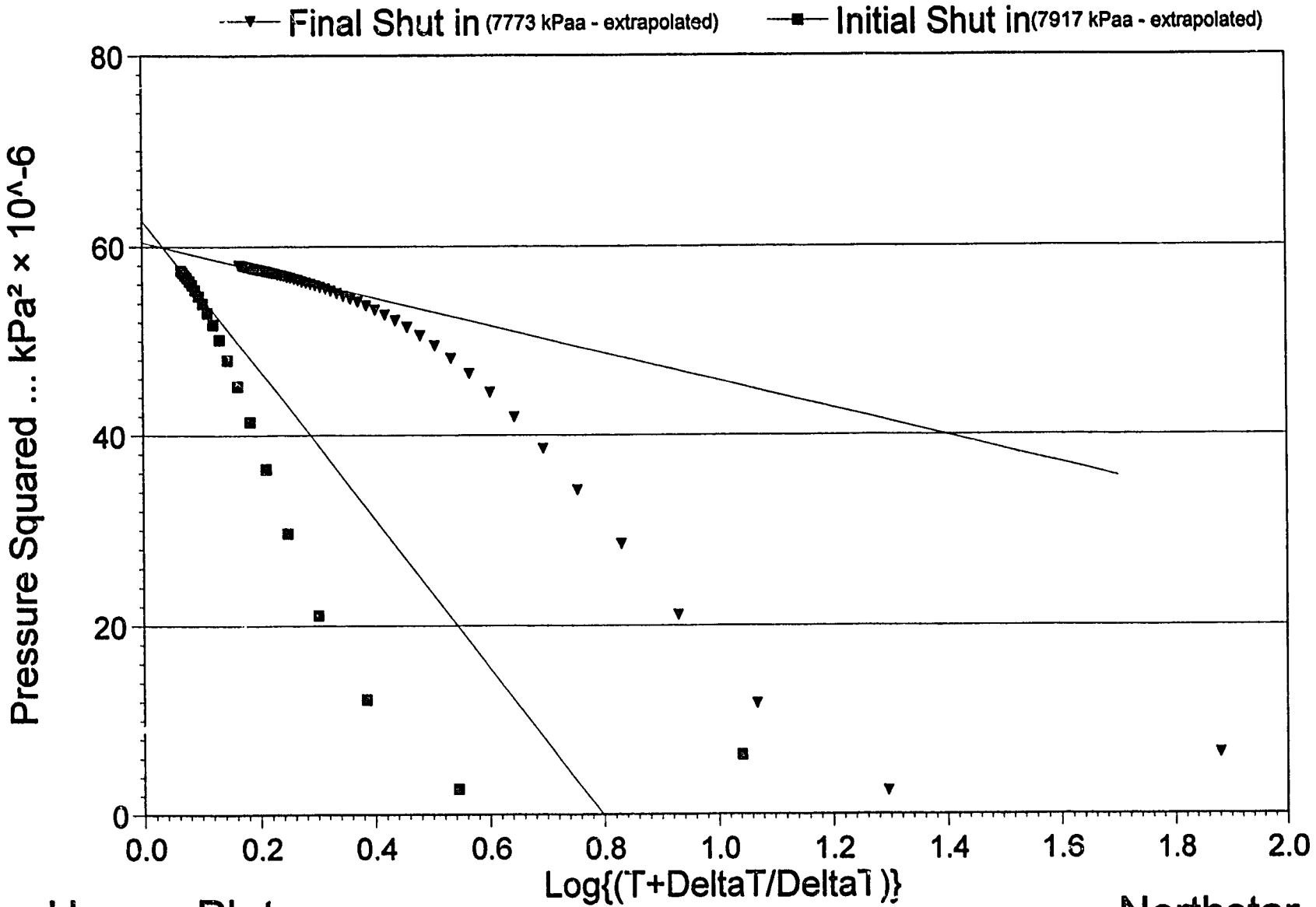
Recorder No: 20844 Depth: 676.80 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

Recorder No: 20494 Depth: 697.16 Date: 03/03/18



Horner Plot

Northstar

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 2**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* = \mathbf{1.9\ \%}$
$P_1 = \mathbf{7917}$ (kPaa)
$P_2 = \mathbf{7773}$ (kPaa)

× This DST **does not meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* = \mathbf{2.0\ \%}$
$P_{FSI} = \mathbf{7616}$ (kPaa)

√ This DST **does meet** this requirement.

4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

This test does not meet all the initial pressure requirements but still may be acceptable by the AEUB. They will flag it for possible follow-up.

The PAS file for this well has been submitted as an Initial Pressure Survey.

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 2

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:30
Start Recorder	17:55
Recover Recorder	14:00
Finish Lay Down Tools	14:30
Released	
Weight Set On Packer	12000
Weight Pulled Loose	38000
Initial String Weight	21000
Unseated String Weight	22000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.23
Drill Pipe Length	588.24

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

Prepared by: Jacqui Dayda

Reviewed by: David Caldwell

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Paramount et al Mackay Lakes K-36 60-20-120-15

DST 2 Interval: 696.0 to 711.0

DATE	03/03/18		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA

(all measurements in SI units - pressure kPag, depth m)

Preflow	10	min
Initial Shut In	66	min
Second Flow	66	min
Final Shut In	162	min

A. Hydrostatic		8490	8640	8630
B. First Flow	2190	2300	2430	2420
B1. Final Flow	2200	2300	2430	2340
C. Initial Shut In	2200	7330	7490	7480
D. Initial Flow	2200	2310	2440	2430
E. Final Flow	2220	2340	2450	2450
F. Final Shut In	2230	7370	7520	7520
G. Hydrostatic		8060	8200	8200
Recorder No.	20844	022	20494	20655
Range	41369	34474	41369	41369
Depth	676.80	686.12	697.16	697.16
	Recovery	Inside	Interval	Interval

RECOVERY

	Total m	In Collars m	In Pipe m	Volume m³
	161.0	93	68	0.80
Muddy Water	161			

REMARKS AND BLOW DESCRIPTION

Preflow: No blow to pail on opening.
No gas to surface.

Second Flow: No blow to pail on opening.
No gas to surface.

Comments: Recoveries for DST #1 & #2.
Fresh water recovered.

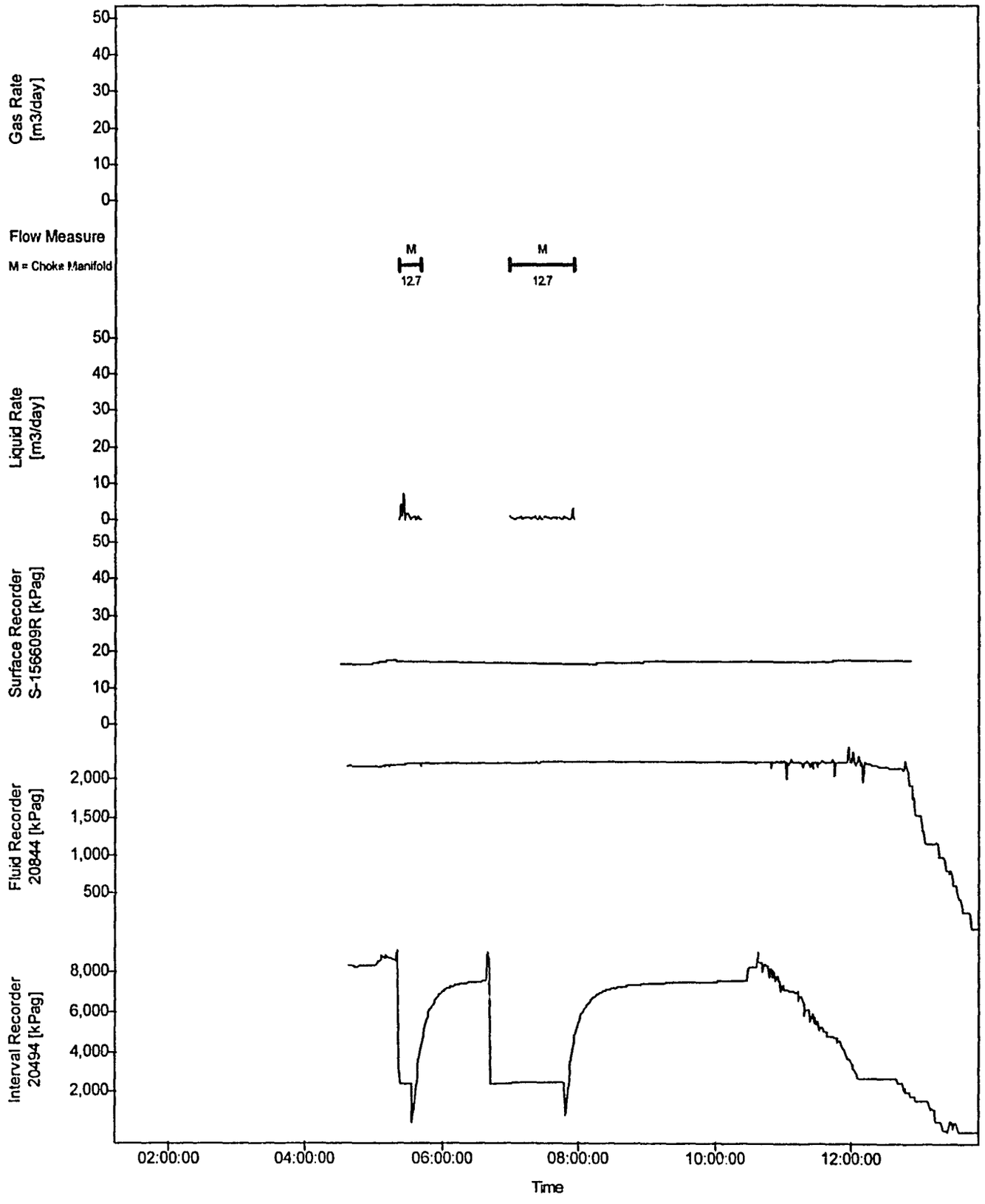
INFLATE STRADDLE RESET

Stick Up		-5.87
Drill Pipe Tally		588.24
*Drill Collar Tally		93.23
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	676.80	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	686.12	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**696.00**	
Perforations		0.86
Upper Hanger	697.16	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Collars		9.45
Spacing		1.82
Cross Over Sub		0.30
Stub		0.42
BOTTOM INTERVAL	**711.01**	
Bottom Packer		1.86
Belly Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**715.02**	

Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 2 Interval: 696.00 to 711.01 m

Test Date: 2003/03/18



Version 0.9.8

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 1

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
429	03/03/18 01:52:01	7:08:47	33.42	2123.9
430 E	03/03/18 01:53:01	7:09:47	33.41	2137.6
[illegible]	03/03/18 01:54:01	7:10:47	33.40	2124.8
[illegible]	03/03/18 01:55:01	7:11:47	33.40	2149.4
433	03/03/18 01:56:01	7:12:47	33.39	2149.5
434	03/03/18 01:57:01	7:13:47	33.40	2150.8
435	03/03/18 01:58:01	7:14:47	33.38	2150.7
436	03/03/18 01:59:01	7:15:47	33.38	2150.5
437	03/03/18 02:00:01	7:16:47	33.38	2151.3
438	03/03/18 02:01:01	7:17:47	33.37	2151.3
439	03/03/18 02:02:01	7:18:47	33.36	2151.3
440	03/03/18 02:03:01	7:19:47	33.35	2150.3
441	03/03/18 02:04:01	7:20:47	33.35	2150.9
442	03/03/18 02:05:01	7:21:47	33.34	2151.0
443	03/03/18 02:06:01	7:22:47	33.34	2150.9
444	03/03/18 02:07:01	7:23:47	33.34	2151.8
445	03/03/18 02:08:01	7:24:47	33.33	2151.7
446	03/03/18 02:09:01	7:25:47	33.31	2151.8
447	03/03/18 02:10:01	7:26:47	33.31	2152.1
448	03/03/18 02:11:01	7:27:47	33.31	2151.9
449	03/03/18 02:12:01	7:28:47	33.30	2152.0
450	03/03/18 02:13:01	7:29:47	33.30	2152.0
451	03/03/18 02:14:01	7:30:47	33.30	2152.6
452	03/03/18 02:15:01	7:31:47	33.30	2152.3
453	03/03/18 02:16:01	7:32:47	33.28	2152.2
454	03/03/18 02:17:01	7:33:47	33.29	2152.2
455	03/03/18 02:18:01	7:34:47	33.28	2152.2
456	03/03/18 02:19:01	7:35:47	33.28	2151.9
457	03/03/18 02:20:01	7:36:47	33.28	2152.2
458	03/03/18 02:21:01	7:37:47	33.28	2152.3
459	03/03/18 02:22:01	7:38:47	33.27	2153.4
460	03/03/18 02:23:01	7:39:47	33.27	2153.5
461	03/03/18 02:24:01	7:40:47	33.27	2153.4
462	03/03/18 02:25:01	7:41:47	33.25	2153.4
463	03/03/18 02:26:01	7:42:47	33.26	2153.1
464	03/03/18 02:27:01	7:43:47	33.25	2153.1
465	03/03/18 02:28:01	7:44:47	33.25	2153.3
466	03/03/18 02:29:01	7:45:47	33.25	2153.3
467	03/03/18 02:30:01	7:46:47	33.25	2153.3
468	03/03/18 02:31:01	7:47:47	33.24	2153.8
469	03/03/18 02:32:01	7:48:47	33.24	2154.4
[illegible]	03/03/18 02:33:01	7:49:47	33.24	2154.4
[illegible]	03/03/18 02:34:01	7:50:47	33.23	2154.0
[illegible]	03/03/18 02:35:01	7:51:47	33.23	2154.1
473	03/03/18 02:36:01	7:52:47	33.23	2154.3
474	03/03/18 02:37:01	7:53:47	33.23	2154.3
475	03/03/18 02:38:01	7:54:47	33.22	2154.3
476	03/03/18 02:39:01	7:55:47	33.21	2154.3
477	03/03/18 02:40:01	7:56:47	33.21	2153.9
478	03/03/18 02:41:01	7:57:47	33.21	2154.6
479	03/03/18 02:42:01	7:58:47	33.21	2154.2
480	03/03/18 02:43:01	7:59:47	33.21	2154.6
481	03/03/18 02:44:01	8:00:47	33.20	2154.9
482	03/03/18 02:45:01	8:01:47	33.19	2154.7
483	03/03/18 02:46:01	8:02:47	33.19	2154.5
484	03/03/18 02:47:01	8:03:47	33.18	2154.7
485	03/03/18 02:48:01	8:04:47	33.19	2155.3
486	03/03/18 02:49:01	8:05:47	33.19	2155.3
487	03/03/18 02:50:01	8:06:47	33.19	2155.7
488	03/03/18 02:51:01	8:07:47	33.18	2155.8
489	03/03/18 02:52:01	8:08:47	33.18	2155.8
490	03/03/18 02:53:01	8:09:47	33.18	2155.9
491	03/03/18 02:54:01	8:10:47	33.18	2155.9
492	03/03/18 02:55:01	8:11:47	33.17	2155.5
493	03/03/18 02:56:01	8:12:47	33.17	2155.5
494	03/03/18 02:57:01	8:13:47	33.15	2156.0
495	03/03/18 02:58:01	8:14:47	33.17	2155.1
496	03/03/18 02:59:01	8:15:47	33.16	2156.4
497	03/03/18 03:00:01	8:16:47	33.15	2155.7
498	03/03/18 03:01:01	8:17:47	33.15	2155.7
499	03/03/18 03:02:01	8:18:47	33.16	2156.1
500	03/03/18 03:03:01	8:19:47	33.14	2155.3
501	03/03/18 03:04:01	8:20:47	33.15	2155.9
502	03/03/18 03:05:01	8:21:47	33.14	2155.9
503	03/03/18 03:06:01	8:22:47	33.13	2155.9
504	03/03/18 03:07:01	8:23:47	33.13	2155.9
505	03/03/18 03:08:01	8:24:47	33.13	2155.8
506	03/03/18 03:09:01	8:25:47	33.12	2155.8
507	03/03/18 03:10:01	8:26:47	33.13	2156.1
508	03/03/18 03:11:01	8:27:47	33.13	2156.5
509	03/03/18 03:12:01	8:28:47	33.12	2156.5
[illegible]	03/03/18 03:13:01	8:29:47	33.12	2156.5
511	03/03/18 03:14:01	8:30:47	33.12	2156.7
512	03/03/18 03:15:01	8:31:47	33.12	2157.0
513	03/03/18 03:16:01	8:32:47	33.12	2156.8
514	03/03/18 03:17:01	8:33:47	33.10	2156.9
515	03/03/18 03:18:01	8:34:47	33.11	2156.9
516	03/03/18 03:19:01	8:35:47	33.10	2156.3
517	03/03/18 03:20:01	8:36:47	33.11	2156.3
518	03/03/18 03:21:01	8:37:47	33.10	2156.5
519	03/03/18 03:22:01	8:38:47	33.10	2156.6
520	03/03/18 03:23:01	8:39:47	33.09	2157.2
521	03/03/18 03:24:01	8:40:47	33.09	2157.2
522	03/03/18 03:25:01	8:41:47	33.10	2157.2
523	03/03/18 03:26:01	8:42:47	33.10	2156.9
524	03/03/18 03:27:01	8:43:47	33.09	2156.9
525	03/03/18 03:28:01	8:44:47	33.09	2157.1
526	03/03/18 03:29:01	8:45:47	33.09	2157.1
527	03/03/18 03:30:01	8:46:47	33.08	2157.3
528	03/03/18 03:31:01	8:47:47	33.08	2157.3
529	03/03/18 03:32:01	8:48:47	33.08	2157.3
530	03/03/18 03:33:01	8:49:47	33.08	2157.3
531	03/03/18 03:34:01	8:50:47	33.07	2157.3
532	03/03/18 03:35:01	8:51:47	33.07	2157.1
533	03/03/18 03:36:01	8:52:47	33.08	2157.1
534	03/03/18 03:37:01	8:53:47	33.07	2157.2
535	03/03/18 03:38:01	8:54:47	33.07	2157.3
536	03/03/18 03:39:01	8:55:47	33.07	2157.4
537	03/03/18 03:40:01	8:56:47	33.07	2157.4
538	03/03/18 03:41:01	8:57:47	33.06	2157.5
539	03/03/18 03:42:01	8:58:47	33.07	2158.2
540	03/03/18 03:43:01	8:59:47	33.06	2157.2
541	03/03/18 03:44:01	9:00:47	33.07	2157.0
542	03/03/18 03:45:01	9:01:47	33.06	2157.0
543	03/03/18 03:46:01	9:02:47	33.06	2157.0
544	03/03/18 03:47:01	9:03:47	33.05	2158.1
545	03/03/18 03:48:01	9:04:47	33.06	2157.8
546	03/03/18 03:49:01	9:05:47	33.05	2157.6
547	03/03/18 03:50:01	9:06:47	33.05	2157.5
548	03/03/18 03:51:01	9:07:47	33.05	2157.3
549	03/03/18 03:52:01	9:08:47	33.05	2157.5
550	03/03/18 03:53:01	9:09:47	33.05	2157.1
551	03/03/18 03:54:01	9:10:47	33.04	2157.7
552	03/03/18 03:55:01	9:11:47	33.04	2158.1
553	03/03/18 03:56:01	9:12:47	33.04	2158.1
554	03/03/18 03:57:01	9:13:47	33.04	2158.0
555	03/03/18 03:58:01	9:14:47	33.03	2158.0
556	03/03/18 03:59:01	9:15:47	33.04	2157.2
557 F	03/03/18 04:00:01	9:16:47	33.03	2157.6
558	03/03/18 04:01:01	9:17:47	33.03	2158.2
559	03/03/18 04:02:01	9:18:47	33.03	2158.2
560	03/03/18 04:03:01	9:19:47	33.03	2140.7
561	03/03/18 04:04:01	9:20:47	33.03	2157.3
562	03/03/18 04:05:01	9:21:47	33.03	2158.0
563	03/03/18 04:06:01	9:22:47	33.03	2156.7
564	03/03/18 04:07:01	9:23:47	33.03	2158.3
565	03/03/18 04:08:01	9:24:47	33.02	2165.2
566	03/03/18 04:09:01	9:25:47	33.02	2160.7
567	03/03/18 04:10:01	9:26:47	33.01	2158.9
568	03/03/18 04:11:01	9:27:47	33.02	2158.8
569	03/03/18 04:12:01	9:28:47	33.01	2158.5
570	03/03/18 04:13:01	9:29:47	33.02	2158.9
571	03/03/18 04:14:01	9:30:47	33.01	2158.9
572	03/03/18 04:15:01	9:31:47	33.01	2158.8
573	03/03/18 04:16:01	9:32:47	33.02	2158.9
574	03/03/18 04:17:01	9:33:47	33.01	2158.2
575	03/03/18 04:18:01	9:34:47	33.01	2158.9
576	03/03/18 04:19:01	9:35:47	33.01	2159.0
577	03/03/18 04:20:01	9:36:47	33.01	2163.4
578	03/03/18 04:21:01	9:37:47	33.01	2161.7

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 1

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
265	03/03/17 23:08:01	4:24:47	30.62	9.2	347	03/03/18 00:30:01	5:46:47	32.84	651.9
266	03/03/17 23:09:01	4:25:47	30.66	9.3	348	03/03/18 00:31:01	5:47:47	32.86	699.4
[illegible]	03/03/17 23:10:01	4:26:47	30.72	9.3	349	03/03/18 00:32:01	5:48:47	32.89	746.6
[illegible]	03/03/17 23:11:01	4:27:47	30.77	9.1	350	03/03/18 00:33:01	5:49:47	32.91	790.8
269	03/03/17 23:12:01	4:28:47	30.83	9.0	351	03/03/18 00:34:01	5:50:47	32.93	836.7
270	03/03/17 23:13:01	4:29:47	30.89	9.4	352	03/03/18 00:35:01	5:51:47	32.95	880.6
271	03/03/17 23:14:01	4:30:47	30.93	9.9	353	03/03/18 00:36:01	5:52:47	32.97	925.9
272	03/03/17 23:15:01	4:31:47	30.97	9.5	354	03/03/18 00:37:01	5:53:47	33.00	971.3
273	03/03/17 23:16:01	4:32:47	31.00	9.4	355	03/03/18 00:38:01	5:54:47	33.02	1008.7
274 B	03/03/17 23:17:01	4:33:47	31.02	9.2	356	03/03/18 00:39:01	5:55:47	33.04	1022.7
275	03/03/17 23:18:01	4:34:47	31.03	21.6	357	03/03/18 00:40:01	5:56:47	33.05	1039.1
276	03/03/17 23:19:01	4:35:47	31.08	57.9	358	03/03/18 00:41:01	5:57:47	33.08	1052.2
277	03/03/17 23:20:01	4:36:47	31.19	89.4	359	03/03/18 00:42:01	5:58:47	33.10	1065.2
278	03/03/17 23:21:01	4:37:47	31.36	124.5	360	03/03/18 00:43:01	5:59:47	33.11	1079.8
279	03/03/17 23:22:01	4:38:47	31.54	162.0	361	03/03/18 00:44:01	6:00:47	33.13	1095.2
280	03/03/17 23:23:01	4:39:47	31.65	196.5	362	03/03/18 00:45:01	6:01:47	33.16	1109.3
281	03/03/17 23:24:01	4:40:47	31.73	228.5	363	03/03/18 00:46:01	6:02:47	33.17	1124.1
282	03/03/17 23:25:01	4:41:47	31.80	260.7	364	03/03/18 00:47:01	6:03:47	33.19	1139.6
283	03/03/17 23:26:01	4:42:47	31.90	290.5	365	03/03/18 00:48:01	6:04:47	33.21	1154.4
284	03/03/17 23:27:01	4:43:47	31.94	327.5	366	03/03/18 00:49:01	6:05:47	33.22	1172.7
285	03/03/17 23:28:01	4:44:47	32.00	363.4	367	03/03/18 00:50:01	6:06:47	33.24	1187.7
286 B1	03/03/17 23:29:01	4:45:47	32.06	371.7	368	03/03/18 00:51:01	6:07:47	33.24	1202.8
287	03/03/17 23:30:01	4:46:47	32.13	372.8	369	03/03/18 00:52:01	6:08:47	33.26	1219.9
288	03/03/17 23:31:01	4:47:47	32.20	373.1	370	03/03/18 00:53:01	6:09:47	33.27	1234.3
289	03/03/17 23:32:01	4:48:47	32.29	372.9	371	03/03/18 00:54:01	6:10:47	33.28	1248.2
290	03/03/17 23:33:01	4:49:47	32.34	373.0	372	03/03/18 00:55:01	6:11:47	33.28	1264.3
291	03/03/17 23:34:01	4:50:47	32.37	372.9	373	03/03/18 00:56:01	6:12:47	33.29	1282.3
292	03/03/17 23:35:01	4:51:47	32.39	373.0	374	03/03/18 00:57:01	6:13:47	33.30	1297.9
293	03/03/17 23:36:01	4:52:47	32.40	372.8	375	03/03/18 00:58:01	6:14:47	33.31	1313.3
294	03/03/17 23:37:01	4:53:47	32.42	372.7	376	03/03/18 00:59:01	6:15:47	33.32	1327.9
295	03/03/17 23:38:01	4:54:47	32.43	373.4	377	03/03/18 01:00:01	6:16:47	33.33	1345.8
296	03/03/17 23:39:01	4:55:47	32.45	373.4	378	03/03/18 01:01:01	6:17:47	33.33	1363.1
297	03/03/17 23:40:01	4:56:47	32.48	372.7	379	03/03/18 01:02:01	6:18:47	33.34	1378.2
298	03/03/17 23:41:01	4:57:47	32.49	372.6	380	03/03/18 01:03:01	6:19:47	33.35	1393.5
299	03/03/17 23:42:01	4:58:47	32.50	372.6	381	03/03/18 01:04:01	6:20:47	33.35	1410.9
300	03/03/17 23:43:01	4:59:47	32.54	373.2	382	03/03/18 01:05:01	6:21:47	33.37	1425.1
301	03/03/17 23:44:01	5:00:47	32.54	373.2	383	03/03/18 01:06:01	6:22:47	33.39	1438.4
302	03/03/17 23:45:01	5:01:47	32.55	371.7	384	03/03/18 01:07:01	6:23:47	33.38	1458.6
303	03/03/17 23:46:01	5:02:47	32.58	371.8	385	03/03/18 01:08:01	6:24:47	33.38	1471.9
304	03/03/17 23:47:01	5:03:47	32.59	372.9	386	03/03/18 01:09:01	6:25:47	33.39	1486.0
305	03/03/17 23:48:01	5:04:47	32.59	372.5	387	03/03/18 01:10:01	6:26:47	33.38	1501.7
306	03/03/17 23:49:01	5:05:47	32.61	372.3	388	03/03/18 01:11:01	6:27:47	33.40	1518.9
[illegible]	03/03/17 23:50:01	5:06:47	32.62	371.9	389	03/03/18 01:12:01	6:28:47	33.40	1536.2
[illegible]	03/03/17 23:51:01	5:07:47	32.62	371.5	390	03/03/18 01:13:01	6:29:47	33.39	1551.9
309	03/03/17 23:52:01	5:08:47	32.63	371.4	391	03/03/18 01:14:01	6:30:47	33.39	1566.4
310	03/03/17 23:53:01	5:09:47	32.64	371.7	392	03/03/18 01:15:01	6:31:47	33.40	1580.2
311	03/03/17 23:54:01	5:10:47	32.63	371.7	393	03/03/18 01:16:01	6:32:47	33.41	1596.0
312	03/03/17 23:55:01	5:11:47	32.64	371.1	394	03/03/18 01:17:01	6:33:47	33.43	1610.4
313	03/03/17 23:56:01	5:12:47	32.66	371.0	395	03/03/18 01:18:01	6:34:47	33.41	1624.2
314	03/03/17 23:57:01	5:13:47	32.65	371.1	396	03/03/18 01:19:01	6:35:47	33.41	1638.6
315	03/03/17 23:58:01	5:14:47	32.65	371.1	397	03/03/18 01:20:01	6:36:47	33.42	1655.4
316	03/03/17 23:59:01	5:15:47	32.67	370.9	398	03/03/18 01:21:01	6:37:47	33.42	1670.7
317	03/03/18 00:00:01	5:16:47	32.67	370.9	399	03/03/18 01:22:01	6:38:47	33.41	1686.1
318	03/03/18 00:01:01	5:17:47	32.67	371.2	400	03/03/18 01:23:01	6:39:47	33.43	1701.4
319	03/03/18 00:02:01	5:18:47	32.67	371.6	401	03/03/18 01:24:01	6:40:47	33.43	1715.3
320	03/03/18 00:03:01	5:19:47	32.69	371.0	402	03/03/18 01:25:01	6:41:47	33.43	1732.2
321	03/03/18 00:04:01	5:20:47	32.68	371.7	403	03/03/18 01:26:01	6:42:47	33.44	1745.5
322	03/03/18 00:05:01	5:21:47	32.69	371.3	404	03/03/18 01:27:01	6:43:47	33.42	1761.8
323	03/03/18 00:06:01	5:22:47	32.69	371.2	405	03/03/18 01:28:01	6:44:47	33.43	1773.9
324	03/03/18 00:07:01	5:23:47	32.68	371.3	406	03/03/18 01:29:01	6:45:47	33.43	1790.3
325	03/03/18 00:08:01	5:24:47	32.70	371.1	407	03/03/18 01:30:01	6:46:47	33.43	1804.0
326	03/03/18 00:09:01	5:25:47	32.71	371.0	408	03/03/18 01:31:01	6:47:47	33.42	1820.4
327	03/03/18 00:10:01	5:26:47	32.69	371.0	409	03/03/18 01:32:01	6:48:47	33.43	1833.7
328	03/03/18 00:11:01	5:27:47	32.71	370.9	410	03/03/18 01:33:01	6:49:47	33.43	1850.0
329	03/03/18 00:12:01	5:28:47	32.70	371.1	411	03/03/18 01:34:01	6:50:47	33.43	1862.9
330	03/03/18 00:13:01	5:29:47	32.68	371.1	412	03/03/18 01:35:01	6:51:47	33.43	1876.6
331	03/03/18 00:14:01	5:30:47	32.70	370.5	413	03/03/18 01:36:01	6:52:47	33.45	1892.6
332	03/03/18 00:15:01	5:31:47	32.70	370.9	414	03/03/18 01:37:01	6:53:47	33.42	1906.9
333	03/03/18 00:16:01	5:32:47	32.71	370.7	415	03/03/18 01:38:01	6:54:47	33.42	1922.4
334	03/03/18 00:17:01	5:33:47	32.70	370.3	416	03/03/18 01:39:01	6:55:47	33.43	1936.7
335	03/03/18 00:18:01	5:34:47	32.70	370.3	417	03/03/18 01:40:01	6:56:47	33.42	1951.6
336 C	03/03/18 00:19:01	5:35:47	32.71	369.6	418	03/03/18 01:41:01	6:57:47	33.42	1966.7
337	03/03/18 00:20:01	5:36:47	32.71	370.9	419	03/03/18 01:42:01	6:58:47	33.44	1979.9
338	03/03/18 00:21:01	5:37:47	32.71	371.0	420	03/03/18 01:43:01	6:59:47	33.44	1994.4
339 D	03/03/18 00:22:01	5:38:47	32.70	370.6	421	03/03/18 01:44:01	7:00:47	33.42	2008.7
340	03/03/18 00:23:01	5:39:47	32.71	370.0	422	03/03/18 01:45:01	7:01:47	33.43	2023.0
341	03/03/18 00:24:01	5:40:47	32.72	391.0	423	03/03/18 01:46:01	7:02:47	33.43	2036.8
342	03/03/18 00:25:01	5:41:47	32.74	433.3	424	03/03/18 01:47:01	7:03:47	33.42	2050.6
343	03/03/18 00:26:01	5:42:47	32.75	476.7	425	03/03/18 01:48:01	7:04:47	33.43	2063.2
344	03/03/18 00:27:01	5:43:47	32.75	521.6	426	03/03/18 01:49:01	7:05:47	33.41	2080.8
345	03/03/18 00:28:01	5:44:47	32.79	566.3	427	03/03/18 01:50:01	7:06:47	33.41	2096.1
346	03/03/18 00:29:01	5:45:47	32.81	607.6	428	03/03/18 01:51:01	7:07:47	33.42	2111.3

Paramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 1

Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
101	03/03/17 20:24:01	1:40:47	5.83	0.0	183	03/03/17 21:46:01	3:02:47	19.36	8.9
102	03/03/17 20:25:01	1:41:47	5.80	0.0	184	03/03/17 21:47:01	3:03:47	19.68	7.9
[redacted]	03/03/17 20:26:01	1:42:47	5.78	0.0	185	03/03/17 21:48:01	3:04:47	19.91	8.8
[redacted]	03/03/17 20:27:01	1:43:47	5.75	0.0	186	03/03/17 21:49:01	3:05:47	20.18	9.4
105	03/03/17 20:28:01	1:44:47	5.74	0.0	187	03/03/17 21:50:01	3:06:47	20.35	8.8
106	03/03/17 20:29:01	1:45:47	5.75	0.0	188	03/03/17 21:51:01	3:07:47	20.68	9.5
107	03/03/17 20:30:01	1:46:47	5.72	0.0	189	03/03/17 21:52:01	3:08:47	20.94	9.5
108	03/03/17 20:31:01	1:47:47	5.72	0.0	190	03/03/17 21:53:01	3:09:47	21.13	10.2
109	03/03/17 20:32:01	1:48:47	5.73	0.0	191	03/03/17 21:54:01	3:10:47	21.33	9.9
110	03/03/17 20:33:01	1:49:47	5.72	0.0	192	03/03/17 21:55:01	3:11:47	21.60	9.7
111	03/03/17 20:34:01	1:50:47	5.78	0.0	193	03/03/17 21:56:01	3:12:47	21.87	10.2
112	03/03/17 20:35:01	1:51:47	5.80	0.0	194	03/03/17 21:57:01	3:13:47	22.16	10.7
113	03/03/17 20:36:01	1:52:47	5.83	0.0	195	03/03/17 21:58:01	3:14:47	22.39	10.4
114	03/03/17 20:37:01	1:53:47	5.93	0.0	196	03/03/17 21:59:01	3:15:47	22.59	9.8
115	03/03/17 20:38:01	1:54:47	5.99	0.0	197	03/03/17 22:00:01	3:16:47	22.89	11.0
116	03/03/17 20:39:01	1:55:47	6.08	0.0	198	03/03/17 22:01:01	3:17:47	23.04	10.5
117	03/03/17 20:40:01	1:56:47	6.17	0.0	199	03/03/17 22:02:01	3:18:47	23.25	9.8
118	03/03/17 20:41:01	1:57:47	6.26	0.0	200	03/03/17 22:03:01	3:19:47	23.58	11.2
119	03/03/17 20:42:01	1:58:47	6.33	0.0	201	03/03/17 22:04:01	3:20:47	23.80	10.5
120	03/03/17 20:43:01	1:59:47	6.43	0.0	202	03/03/17 22:05:01	3:21:47	23.92	10.1
121	03/03/17 20:44:01	2:00:47	6.56	0.0	203	03/03/17 22:06:01	3:22:47	24.18	10.8
122	03/03/17 20:45:01	2:01:47	6.68	0.0	204	03/03/17 22:07:01	3:23:47	24.38	10.7
123	03/03/17 20:46:01	2:02:47	6.80	0.0	205	03/03/17 22:08:01	3:24:47	24.54	10.1
124	03/03/17 20:47:01	2:03:47	6.93	0.0	206	03/03/17 22:09:01	3:25:47	24.77	10.0
125	03/03/17 20:48:01	2:04:47	7.05	0.0	207	03/03/17 22:10:01	3:26:47	25.05	9.4
126	03/03/17 20:49:01	2:05:47	7.22	0.0	208	03/03/17 22:11:01	3:27:47	25.19	9.1
127	03/03/17 20:50:01	2:06:47	7.48	0.0	209	03/03/17 22:12:01	3:28:47	25.39	9.2
128	03/03/17 20:51:01	2:07:47	7.62	0.0	210	03/03/17 22:13:01	3:29:47	25.58	10.4
129	03/03/17 20:52:01	2:08:47	7.75	0.0	211	03/03/17 22:14:01	3:30:47	25.70	10.1
130	03/03/17 20:53:01	2:09:47	7.94	0.0	212	03/03/17 22:15:01	3:31:47	25.88	9.8
131	03/03/17 20:54:01	2:10:47	8.14	0.0	213	03/03/17 22:16:01	3:32:47	26.13	9.7
132	03/03/17 20:55:01	2:11:47	8.32	0.0	214	03/03/17 22:17:01	3:33:47	26.29	9.1
133	03/03/17 20:56:01	2:12:47	8.57	0.0	215	03/03/17 22:18:01	3:34:47	26.44	9.7
134	03/03/17 20:57:01	2:13:47	8.82	0.0	216	03/03/17 22:19:01	3:35:47	26.53	9.4
135	03/03/17 20:58:01	2:14:47	9.00	0.6	217	03/03/17 22:20:01	3:36:47	26.61	9.6
136	03/03/17 20:59:01	2:15:47	9.19	0.0	218	03/03/17 22:21:01	3:37:47	26.79	9.0
137	03/03/17 21:00:01	2:16:47	9.41	0.4	219	03/03/17 22:22:01	3:38:47	26.95	8.8
138	03/03/17 21:01:01	2:17:47	9.54	0.0	220	03/03/17 22:23:01	3:39:47	27.05	9.2
139	03/03/17 21:02:01	2:18:47	9.78	0.0	221	03/03/17 22:24:01	3:40:47	27.18	9.3
140	03/03/17 21:03:01	2:19:47	10.01	0.1	222	03/03/17 22:25:01	3:41:47	27.29	9.0
141	03/03/17 21:04:01	2:20:47	10.19	0.4	223	03/03/17 22:26:01	3:42:47	27.47	10.9
[redacted]	03/03/17 21:05:01	2:21:47	10.34	0.9	224	03/03/17 22:27:01	3:43:47	27.63	9.2
[redacted]	03/03/17 21:06:01	2:22:47	10.47	0.5	225	03/03/17 22:28:01	3:44:47	27.76	8.8
[redacted]	03/03/17 21:07:01	2:23:47	10.68	0.3	226	03/03/17 22:29:01	3:45:47	27.85	8.5
145	03/03/17 21:08:01	2:24:47	10.88	0.7	227	03/03/17 22:30:01	3:46:47	27.93	8.3
146	03/03/17 21:09:01	2:25:47	11.11	0.9	228	03/03/17 22:31:01	3:47:47	28.05	8.6
147	03/03/17 21:10:01	2:26:47	11.38	0.5	229	03/03/17 22:32:01	3:48:47	28.18	8.9
148	03/03/17 21:11:01	2:27:47	11.56	0.7	230	03/03/17 22:33:01	3:49:47	28.28	8.9
149	03/03/17 21:12:01	2:28:47	11.74	0.5	231	03/03/17 22:34:01	3:50:47	28.34	9.0
150	03/03/17 21:13:01	2:29:47	11.97	0.6	232	03/03/17 22:35:01	3:51:47	28.41	9.6
151	03/03/17 21:14:01	2:30:47	12.16	1.2	233	03/03/17 22:36:01	3:52:47	28.49	9.3
152	03/03/17 21:15:01	2:31:47	12.33	1.7	234	03/03/17 22:37:01	3:53:47	28.57	9.1
153	03/03/17 21:16:01	2:32:47	12.52	1.6	235	03/03/17 22:38:01	3:54:47	28.66	8.8
154	03/03/17 21:17:01	2:33:47	12.80	2.8	236	03/03/17 22:39:01	3:55:47	28.77	8.0
155	03/03/17 21:18:01	2:34:47	13.02	3.5	237	03/03/17 22:40:01	3:56:47	28.92	8.4
156	03/03/17 21:19:01	2:35:47	13.17	2.2	238	03/03/17 22:41:01	3:57:47	29.02	9.7
157	03/03/17 21:20:01	2:36:47	13.42	2.8	239	03/03/17 22:42:01	3:58:47	29.13	9.3
158	03/03/17 21:21:01	2:37:47	13.66	2.0	240	03/03/17 22:43:01	3:59:47	29.19	9.0
159	03/03/17 21:22:01	2:38:47	13.95	1.5	241	03/03/17 22:44:01	4:00:47	29.23	8.9
160	03/03/17 21:23:01	2:39:47	14.22	1.4	242	03/03/17 22:45:01	4:01:47	29.27	8.7
161	03/03/17 21:24:01	2:40:47	14.41	3.0	243	03/03/17 22:46:01	4:02:47	29.32	8.6
162	03/03/17 21:25:01	2:41:47	14.68	3.3	244	03/03/17 22:47:01	4:03:47	29.40	9.0
163	03/03/17 21:26:01	2:42:47	14.87	4.3	245	03/03/17 22:48:01	4:04:47	29.48	9.4
164	03/03/17 21:27:01	2:43:47	15.10	4.9	246	03/03/17 22:49:01	4:05:47	29.61	9.1
165	03/03/17 21:28:01	2:44:47	15.43	4.7	247	03/03/17 22:50:01	4:06:47	29.66	9.4
166	03/03/17 21:29:01	2:45:47	15.63	5.2	248	03/03/17 22:51:01	4:07:47	29.72	9.0
167	03/03/17 21:30:01	2:46:47	15.80	5.7	249	03/03/17 22:52:01	4:08:47	29.77	8.9
168	03/03/17 21:31:01	2:47:47	16.00	5.0	250	03/03/17 22:53:01	4:09:47	29.85	8.6
169	03/03/17 21:32:01	2:48:47	16.22	5.3	251	03/03/17 22:54:01	4:10:47	29.89	8.8
170	03/03/17 21:33:01	2:49:47	16.46	5.2	252	03/03/17 22:55:01	4:11:47	29.95	9.6
171	03/03/17 21:34:01	2:50:47	16.71	5.2	253	03/03/17 22:56:01	4:12:47	30.00	8.9
172	03/03/17 21:35:01	2:51:47	16.98	6.2	254	03/03/17 22:57:01	4:13:47	30.04	8.6
173	03/03/17 21:36:01	2:52:47	17.17	5.6	255	03/03/17 22:58:01	4:14:47	30.12	8.6
174	03/03/17 21:37:01	2:53:47	17.44	6.1	256	03/03/17 22:59:01	4:15:47	30.19	8.7
175	03/03/17 21:38:01	2:54:47	17.59	7.6	257	03/03/17 23:00:01	4:16:47	30.26	8.4
176	03/03/17 21:39:01	2:55:47	17.79	7.0	258	03/03/17 23:01:01	4:17:47	30.32	8.7
177	03/03/17 21:40:01	2:56:47	18.03	7.5	259	03/03/17 23:02:01	4:18:47	30.37	8.5
178	03/03/17 21:41:01	2:57:47	18.33	8.3	260	03/03/17 23:03:01	4:19:47	30.42	8.5
179	03/03/17 21:42:01	2:58:47	18.49	9.4	261	03/03/17 23:04:01	4:20:47	30.46	8.7
180	03/03/17 21:43:01	2:59:47	18.69	8.6	262	03/03/17 23:05:01	4:21:47	30.52	8.5
181	03/03/17 21:44:01	3:00:47	18.93	8.4	263	03/03/17 23:06:01	4:22:47	30.55	8.4
[redacted]	03/03/17 21:45:01	3:01:47	19.15	8.4	264	03/03/17 23:07:01	4:23:47	30.59	8.6

SUBSURFACE PRESSURE MEASUREMENTS

DST Number: 1
Well: Paramount et al Mackay Lakes
Location: K-36 60-20-120-15
Date Of Test: 03/03/17 18:17:01
Test Interval: 714.69 - 729.70
Probe Serial #: 20844
Data File:
Time Interval: Fast Sample:

aramount et al Mackay Lakes (K-36 60-20-120-15) DST NO 1

tem #	Date	Total Elapsed Time	Temperature °C	Pressure kPa	Item #	Date	Total Elapsed Time	Temperature °C	Pressure kPa
1	03/03/17 18:44:01	0:00:47	9.09	0.0	51	03/03/17 19:34:01	0:50:47	6.16	0.0
2	03/03/17 18:45:01	0:01:47	8.88	0.0	52	03/03/17 19:35:01	0:51:47	6.21	0.0
3	03/03/17 18:46:01	0:02:47	8.64	0.0	53	03/03/17 19:36:01	0:52:47	6.26	0.0
4	03/03/17 18:47:01	0:03:47	8.34	0.0	54	03/03/17 19:37:01	0:53:47	6.30	0.0
5	03/03/17 18:48:01	0:04:47	8.12	0.0	55	03/03/17 19:38:01	0:54:47	6.34	0.0
6	03/03/17 18:49:01	0:05:47	7.90	0.0	56	03/03/17 19:39:01	0:55:47	6.40	0.0
7	03/03/17 18:50:01	0:06:47	7.68	0.0	57	03/03/17 19:40:01	0:56:47	6.46	0.0
8	03/03/17 18:51:01	0:07:47	7.56	0.0	58	03/03/17 19:41:01	0:57:47	6.52	0.0
9	03/03/17 18:52:01	0:08:47	7.25	0.0	59	03/03/17 19:42:01	0:58:47	6.58	0.0
10	03/03/17 18:53:01	0:09:47	7.01	0.0	60	03/03/17 19:43:01	0:59:47	6.63	0.0
11	03/03/17 18:54:01	0:10:47	6.83	0.0	61	03/03/17 19:44:01	1:00:47	6.67	0.0
12	03/03/17 18:55:01	0:11:47	6.66	0.0	62	03/03/17 19:45:01	1:01:47	6.72	0.0
13	03/03/17 18:56:01	0:12:47	6.44	0.0	63	03/03/17 19:46:01	1:02:47	6.76	0.0
14	03/03/17 18:57:01	0:13:47	6.25	0.0	64	03/03/17 19:47:01	1:03:47	6.79	0.0
15	03/03/17 18:58:01	0:14:47	6.01	0.0	65	03/03/17 19:48:01	1:04:47	6.84	0.0
16	03/03/17 18:59:01	0:15:47	5.77	0.0	66	03/03/17 19:49:01	1:05:47	6.86	0.0
17	03/03/17 19:00:01	0:16:47	5.58	0.0	67	03/03/17 19:50:01	1:06:47	6.90	0.0
18	03/03/17 19:01:01	0:17:47	5.40	0.0	68	03/03/17 19:51:01	1:07:47	6.93	0.0
19	03/03/17 19:02:01	0:18:47	5.18	0.0	69	03/03/17 19:52:01	1:08:47	6.96	0.0
20	03/03/17 19:03:01	0:19:47	5.00	0.0	70	03/03/17 19:53:01	1:09:47	7.00	0.0
21	03/03/17 19:04:01	0:20:47	4.90	0.0	71	03/03/17 19:54:01	1:10:47	7.02	0.0
22	03/03/17 19:05:01	0:21:47	4.77	0.0	72	03/03/17 19:55:01	1:11:47	7.16	0.0
23	03/03/17 19:06:01	0:22:47	4.62	0.0	73	03/03/17 19:56:01	1:12:47	7.28	0.0
24	03/03/17 19:07:01	0:23:47	4.49	0.0	74	03/03/17 19:57:01	1:13:47	7.36	0.0
25	03/03/17 19:08:01	0:24:47	4.45	0.0	75	03/03/17 19:58:01	1:14:47	7.35	0.0
26	03/03/17 19:09:01	0:25:47	4.42	0.0	76	03/03/17 19:59:01	1:15:47	7.33	0.0
27	03/03/17 19:10:01	0:26:47	4.41	0.0	77	03/03/17 20:00:01	1:16:47	7.28	0.0
28	03/03/17 19:11:01	0:27:47	4.45	0.0	78	03/03/17 20:01:01	1:17:47	7.22	0.0
29	03/03/17 19:12:01	0:28:47	4.50	0.0	79	03/03/17 20:02:01	1:18:47	7.15	0.0
30	03/03/17 19:13:01	0:29:47	4.61	0.0	80	03/03/17 20:03:01	1:19:47	7.08	0.0
31	03/03/17 19:14:01	0:30:47	4.67	0.0	81	03/03/17 20:04:01	1:20:47	7.02	0.0
32	03/03/17 19:15:01	0:31:47	4.76	0.0	82	03/03/17 20:05:01	1:21:47	6.97	0.0
33	03/03/17 19:16:01	0:32:47	4.85	0.0	83	03/03/17 20:06:01	1:22:47	6.91	0.0
34	03/03/17 19:17:01	0:33:47	4.92	0.0	84	03/03/17 20:07:01	1:23:47	6.82	0.0
35	03/03/17 19:18:01	0:34:47	4.96	0.0	85	03/03/17 20:08:01	1:24:47	6.79	0.0
36	03/03/17 19:19:01	0:35:47	5.04	0.0	86	03/03/17 20:09:01	1:25:47	6.70	0.0
37	03/03/17 19:20:01	0:36:47	5.12	0.0	87	03/03/17 20:10:01	1:26:47	6.64	0.0
38	03/03/17 19:21:01	0:37:47	5.23	0.0	88	03/03/17 20:11:01	1:27:47	6.56	0.0
39	03/03/17 19:22:01	0:38:47	5.33	0.0	89	03/03/17 20:12:01	1:28:47	6.50	0.0
40	03/03/17 19:23:01	0:39:47	5.40	0.0	90	03/03/17 20:13:01	1:29:47	6.41	0.0
41	03/03/17 19:24:01	0:40:47	5.49	0.0	91	03/03/17 20:14:01	1:30:47	6.35	0.0
42	03/03/17 19:25:01	0:41:47	5.55	0.0	92	03/03/17 20:15:01	1:31:47	6.31	0.0
43	03/03/17 19:26:01	0:42:47	5.60	0.0	93	03/03/17 20:16:01	1:32:47	6.25	0.0
44	03/03/17 19:27:01	0:43:47	5.65	0.0	94	03/03/17 20:17:01	1:33:47	6.20	0.0
45	03/03/17 19:28:01	0:44:47	5.73	0.0	95	03/03/17 20:18:01	1:34:47	6.14	0.0
46	03/03/17 19:29:01	0:45:47	5.78	0.0	96	03/03/17 20:19:01	1:35:47	6.09	0.0
47	03/03/17 19:30:01	0:46:47	5.88	0.0	97	03/03/17 20:20:01	1:36:47	6.04	0.0
48	03/03/17 19:31:01	0:47:47	5.93	0.0	98	03/03/17 20:21:01	1:37:47	5.95	0.0
49	03/03/17 19:32:01	0:48:47	6.03	0.0	99	03/03/17 20:22:01	1:38:47	5.93	0.0
50	03/03/17 19:33:01	0:49:47	6.11	0.0	100	03/03/17 20:23:01	1:39:47	5.88	0.0

INFLATE - TALLY SHEET

Northstar *Drillstem Testers Inc.*

1210, 540 - 5 Avenue S.W
Calgary, Alberta T2P 0M2

1-800-567-8420 (24 Hrs.)
Tel: (403) 265-8987 (24 Hrs.)
Fax: (403) 265-6776

Company: Paramount Resources LTD

Well Name: Paramount ET AL Mackay Lakes

Well Number: K-36 - 60 - 20 - 123 - 15

DST NO. ONE **Interval** 714.69 - 729.70

Customer Representative:

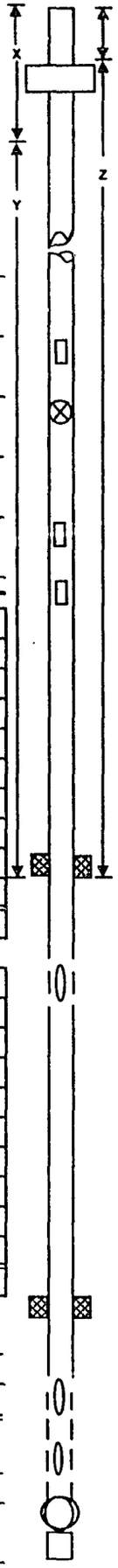
Tester: ED Flood / T Blondin

1	1850	11	1886	21	1900	31	1879	41	
2	1923	12	1904	22	1902	32	1870	42	
3	1886	13	1881	23	1862	33		43	
4	1903	14	1885	24	1926	34	SV. 46	44	
5	1858	15	1895	25	1900	35		45	
6	1896	16	1894	26	1925	36		46	
7	1926	17	1903	27	1922	37		47	
8	1901	18	1924	28	1892	38		48	
9	1896	19	1872	29	1864	39		49	
10	1900	20	1902	30	1921	40		50	
A	189.39	B	189.46	C	190.14	D	37.95	E	

51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

Drill Pipe		Drill Collars		Pipe Out	
A	189.39	1	18.88		
B	189.46	2	18.23		
C	190.14	3	18.47		
D	37.95	4	18.96		
E		5	18.69		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	606.94	DC	93.23		

D.P 606.94
D.C 93.23
X = Total Pipe 700.17
Y = Tool Above
Interval 20.40
X + Y 720.57
Z = Top of Interval 714.69
Stick Up = X + Y - Z 5.88



Stick Up	[5.88]		
KB			
Drill Pipe Tally	606.94		
Drill Collar Tally	93.23		
Stabbing Valve			
XO Sub	.3		
Reversing Sub	.3		
Choke Sub			
P/o	.3		
Upper Hanger	.3	[illegible]	Recorder # 20844
Bomb Well	1.22	695.19	
Hydraulic Tool	1.62		
Sampler	1.12		
Sampler			
~~Sub~~ Sqz	1.00	704.81	(RT)
Upper Hanger	4.36	[illegible] 700.45	Recorder # 22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N R459
Safety Joint	.73		
Inflate Pump	.99		S/N #49
Screen	1.32		
Release System	1.12		S/N 1017-10
Top Packer	1.78	714.69	**Top of Interval**
			Element # 67049
Perforations	.86		
Upper Hanger	.3	715.85	Recorder # 20994
Lower Hanger	1.56		Recorder # 20655
XO Sub	.3		
Collars	9.45		
Spacing	1.82		
XO Sub	.3		
Packer Stub	.42	729.70	**Bottom of Interval**
Bottom Packer	1.86		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	733.71	**Bottom Tools**

Reliable Drillstem Testing

Lowest "Misruns" in the Industry!

Northstar Drillstem Testers Inc.
ISO 9001-Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2
Tel: 403.265.8987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	Paramount Resources Ltd	Date	March 17/03
Well Name	Paramount et al Mackay Lakes	Formation	
Well Location	K-36-60-20-120-15	Type of test	Inflate Straddle
License No.	1966	Kelly Bushing 294.73	Gr. Elevation 2903
DST No.	ONE	Interval 714.69 – 729.70	Total Depth 800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: Very Weak to Light Blow to Pail, No Gas to Surface

Secondflow: Very Weak to Light Blow to Pail, open to (3/4) 19.05 choke
Blow very weak but Steady, Blow droped off No Blow to Pail

Comments: Had Safty Hawd Take Gas Readings, No Gas Indecated, Nothing Expected

PRESSURE DATA

Recorder#	20494 Depth 715.85		
A. Init.Hyd.	8620 kPa		
B. First Flow	290 kPa		
B1. Final Flow	560 kPa		
C. Init.Shut In	7810 kPa		
D. Init.Flow	640 kPa		
E. Final Flow	2330 kPa		
F. Final Shut In	7760 kPa		
G. Final Hyd.	9540 kPa		

FLUID RECOVERY

Oil	m	°API	
Water	161 m		
Mud	m		
	m		
	m		
Total Fluid	161 m		
Samples sent to:	AGAT		
BHS#	203		
Fluid Samples	4	Gas Samples	—

GAS RECOVERY

Measured with Choke manifold

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time
Arrive on Location	03/03/17	14:30 hr
Start Pick up Tools	"	17:30 hr
Start Recorder	"	17:55 hr
Recover Recorder		hr
Finish Lay Down Tools	March 18	04:30 hr
Released		hr

Weight Set on Packer	12,000 daN	Preflow	10 min
Weight Pulled Loose	40,000 daN	Initial	55 min
Initial String Weight	21,000 daN	Second Flow	90 min
Unseated String Weight	21,000 daN	Final Shut In	128 min

MUD DATA

Mud Type	Gel Chem		
Weight	1180 kg/m³		
Viscosity	80 s/L		
Mud Drop	m		
Amount of Fill	m		
Bottom Hole Temp.	°C		

PIPE DATA

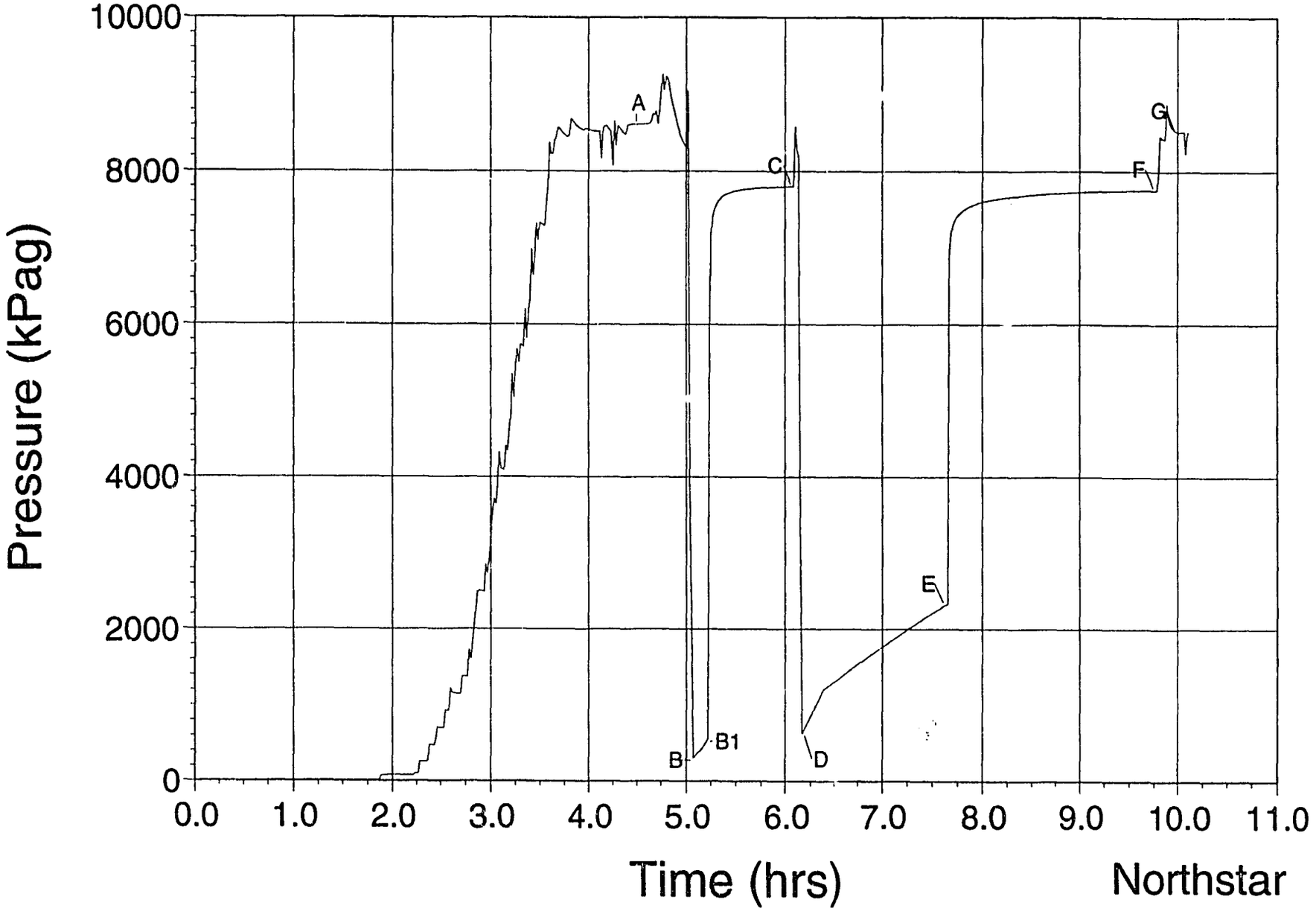
	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	143	63.5	83.23
Drill Pipe	114.3	24.7	97.2	606.84
Water Cushion		Stands		

Time begin	Time End
23:17	23:27
23:27	00:22
00:22	01:52
01:52	04:01

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

Recorder No:20655 Depth: 715.85 Date: 03/03/17

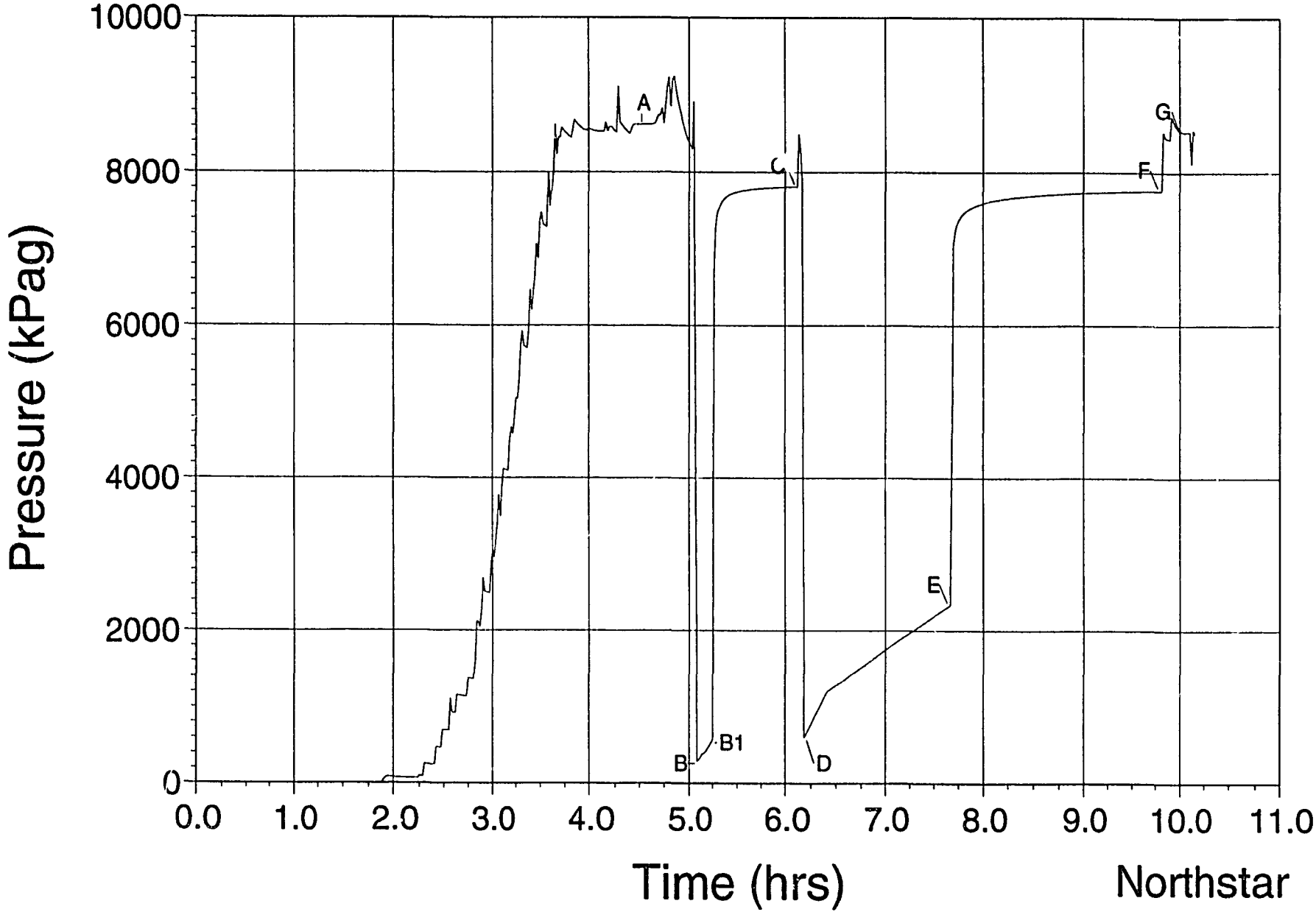


Northstar

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

Recorder No:20494 Depth: 715.85 Date: 03/03/17

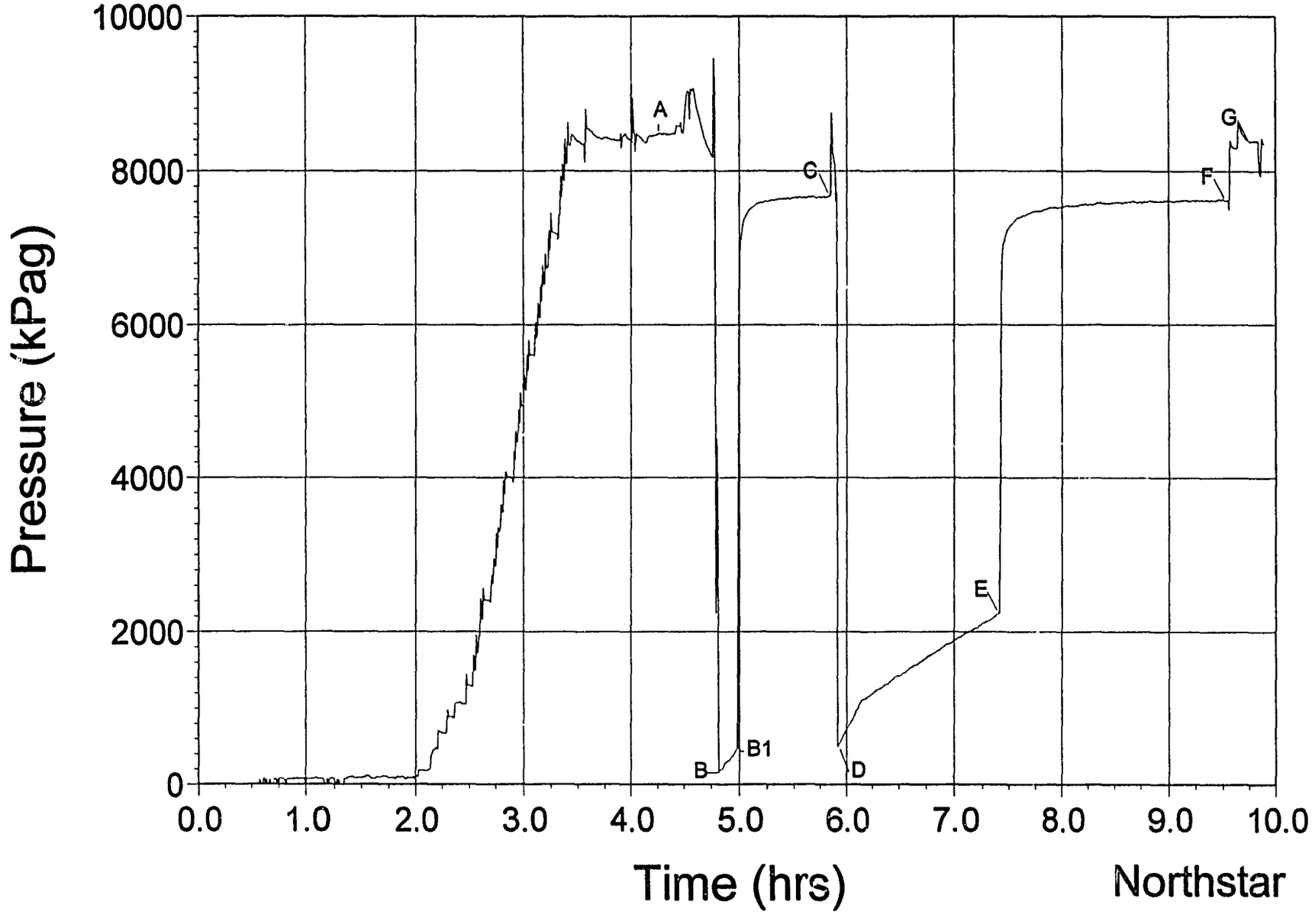


Northstar

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

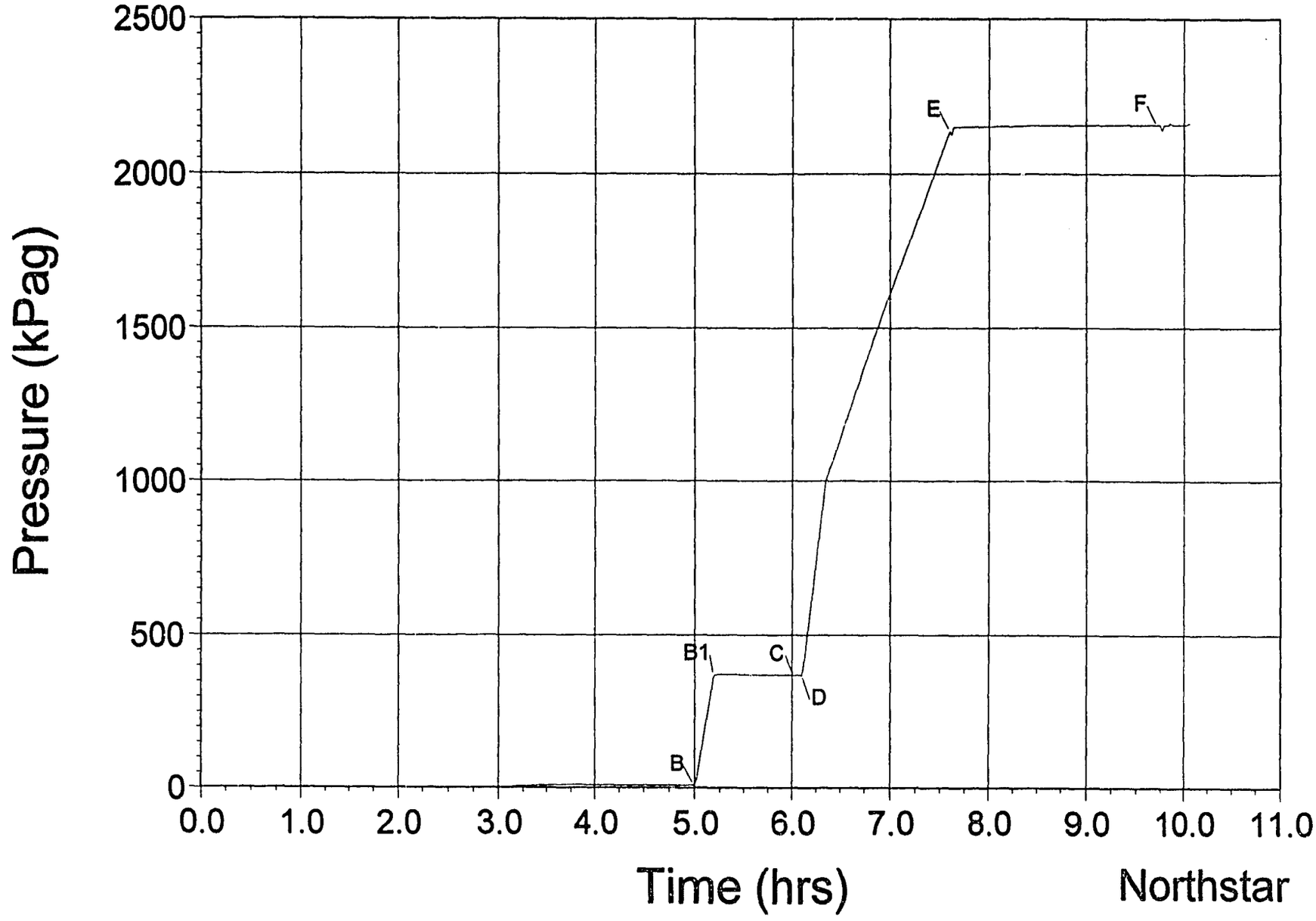
Recorder No: 022 Depth: 704.81 Date: 03/03/17



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

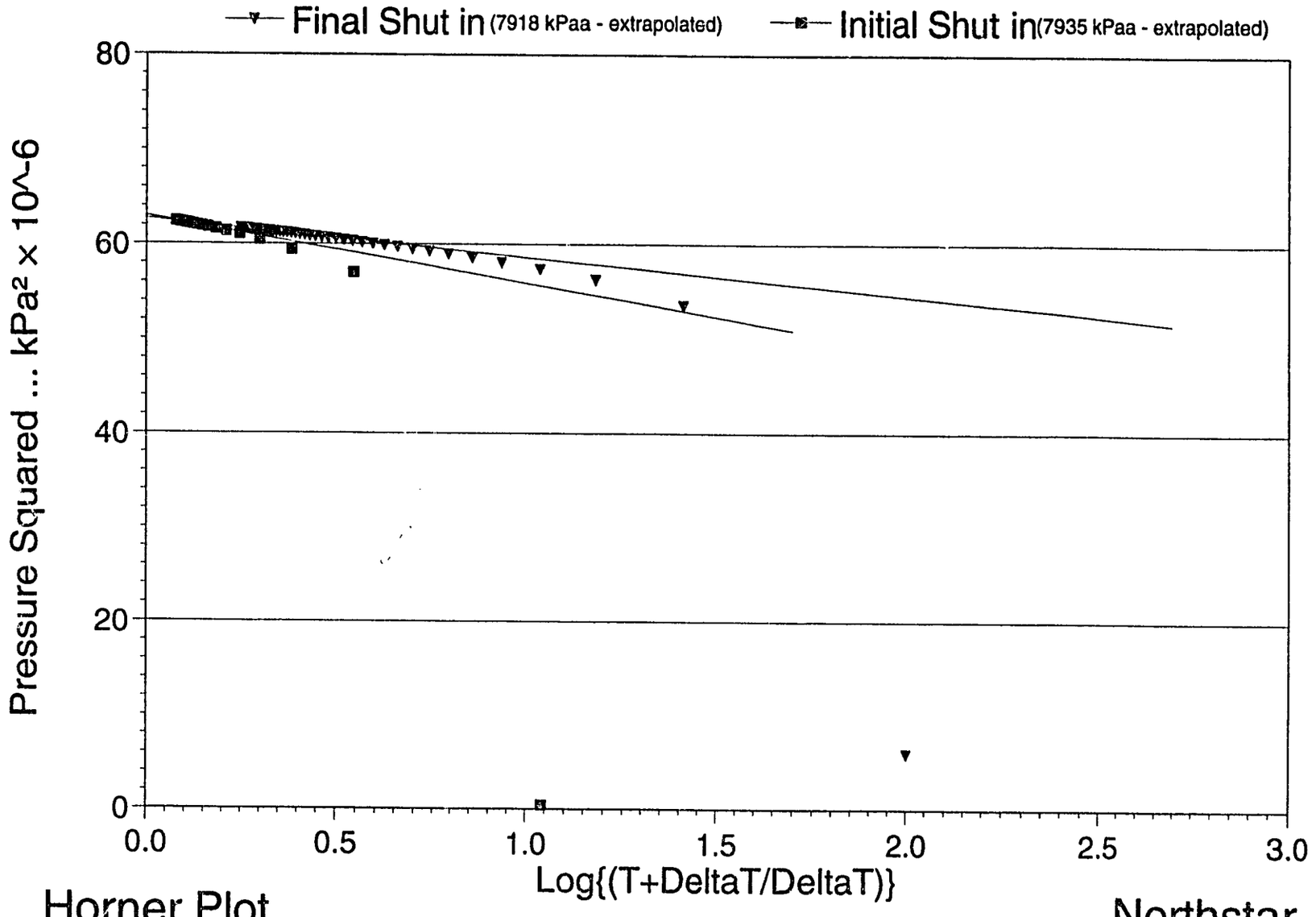
Recorder No: 20844 Depth: 695.49 Date: 03/03/17



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

Recorder No:20494 Depth: 715.85 Date: 03/03/17



Horner Plot

Northstar

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 1**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* = 0.2\ \%$
$P_1 = 7935$ (kPaa)
$P_2 = 7918$ (kPaa)

√ This DST **does meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* = 0.8\ \%$
$P_{FSI} = 7853$ (kPaa)

√ This DST **does meet** this requirement.

4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

In addition to meeting the initial pressure requirements, this DST may be an acceptable data point for your annual pressure survey of this pool.

The PAS file for this well has been submitted as an Initial Pressure Survey.

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 1

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:30
Start Recorder	17:55
Recover Recorder	
Finish Lay Down Tools	04:30
Released	
Weight Set On Packer	12000
Weight Pulled Loose	40000
Initial String Weight	21000
Unseated String Weight	22000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.23
Drill Pipe Length	606.94

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

Prepared by: Jacqui Snyder.

Reviewed by: David Caldwell

Northstar Drillstem Testers Inc.
ISO 9001-1994 Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2

T 403.265.8987
F 403.265.6776
ndst@northstardst.com
www.northstardst.com

Paramount et al Mackay Lakes K-36 60-20-120-15

DST 1 Interval: 714.7 to 729.7

DATE	03/03/17		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA (all measurements in SI units - pressure kPag, depth m)

Preflow	10	min
Initial Shut In	55	min
Second Flow	90	min
Final Shut In	128	min

A. Hydrostatic		8480	8620	8610
B. First Flow	10	180	290	310
B1. Final Flow	370	470	560	560
C. Initial Shut In	370	7690	7810	7800
D. Initial Flow	370	500	600	630
E. Final Flow	2140	2240	2330	2320
F. Final Shut In	2160	7620	7760	7760
G. Hydrostatic		8390	8540	8530
Recorder No.	20844	022	20494	20655
Range	41369	34474	41369	41369
Depth	695.49	704.81	715.85	715.85
	Recovery	Inside	Interval	Interval

RECOVERY

	Total	In Collars	In Pipe	Volume
	m	m	m	m³
	161.0	93	68	0.80
Muddy Water	161			

REMARKS AND BLOW DESCRIPTION

Preflow. Very weak to light blow to pail.
No gas to surface.

Second Flow: Very weak to light blow to pail.
Open to (3/4) 19.05 choke.
Blow very weak but steady.
Blow dropped off, no blow to pail.

Comments: Recoveries for DST #1 & #2.
Had safety hand take gas readings.
No gas indicated, nothing expected.

INFLATE STRADDLE

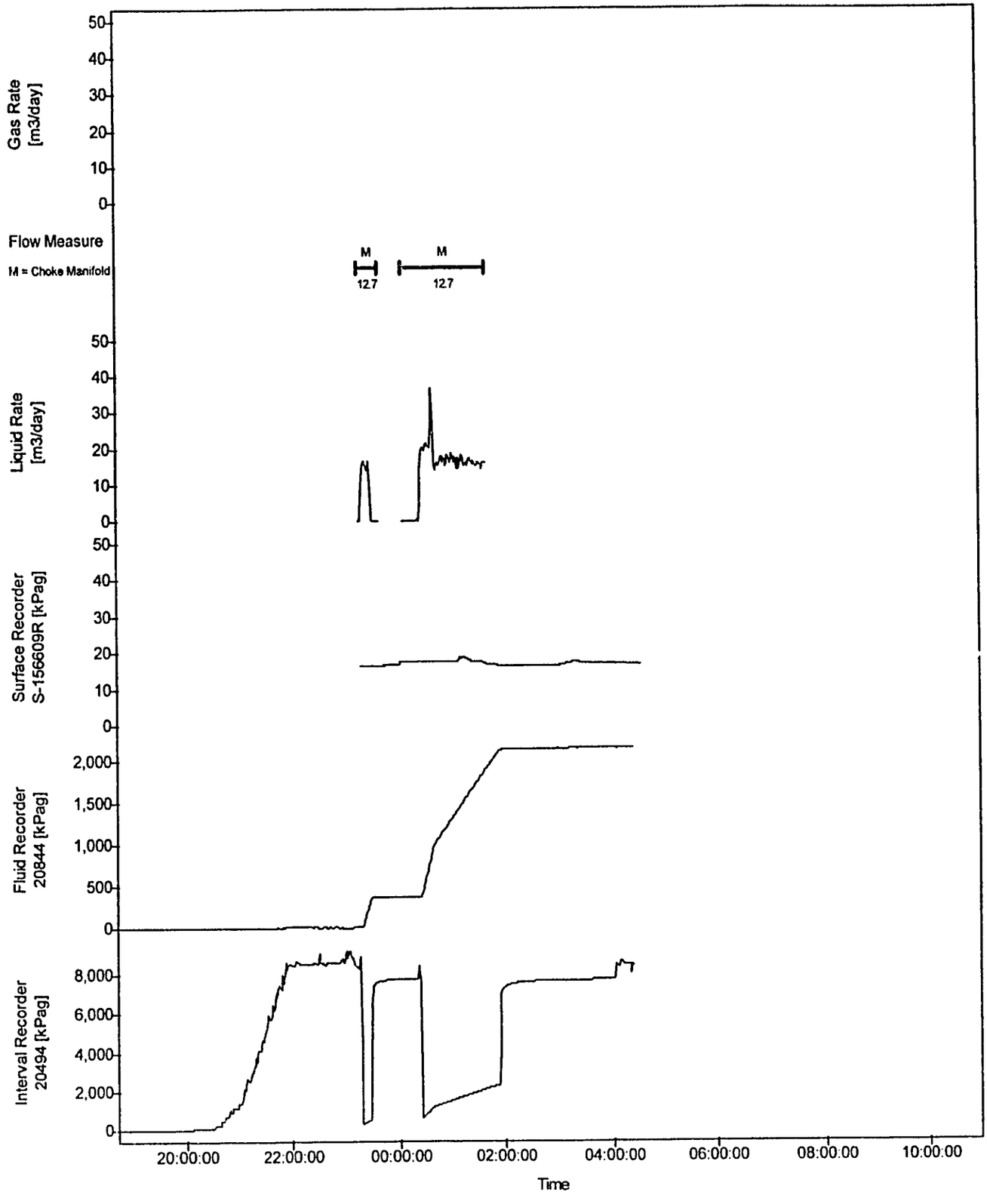
Stick Up		-5.88
Drill Pipe Tally		606.94
*Drill Collar Tally		93.23
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	695.49	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	704.81	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**714.69**	
Perforations		0.86
Upper Hanger	715.85	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Collar		9.45
Spacing		1.82
Cross Over Sub		0.30
Stub		0.42
BOTTOM INTERVAL	**729.70**	
Bottom Packer		1.86
Belly Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**733.71**	

Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 1

Interval: 714.69 to 729.70 m

Test Date: 2003/03/17



Version 0.9.8

WELL EVALUATION

The following logs were run:	Depths
STI-MEL-SPED-CNS-GR	800m – Surface Casing

Hydrocarbon well log attached:

ANALYSES:

WATER ANALYSES:

No additional fluid analyses were conducted on this well.

OVERSIZED

DOCUMENT

FILMED

ON

35mm

GEOLOGICAL REPORT

T.I.H.

N.E.B. COPY

Consulting Ltd.

1602 – 5th Street N.E.
Calgary, Alberta. T2E 7W3
Tel:(403) 233-7729
Fax:(403) 266-0258

Geological Report:

PARAMOUNT ET AL McKAY LAKES K-36
UNIQUE I.D.: 300K366020123150

Len Horback, P.Geol.
Consulting Geologist
Tel: 233-7729
24 hour Answering Service

SUMMARY OF WELL DATA

WELL NAME:	PARAMOUNT ET AL McKAY LAKES K-36
UNIQUE I.D.:	300/K-36 60-20-123-15
SURFACE CO-ORDINATES:	
DRILLING LICENCE:	1966
GROUND ELEVATION:	294.7m K.B. ELEVATION: 289.9m
DATE SPUDDED:	14:00 hours, March 8, 2003.
DRILLING COMPLETED:	02:40 hours, March 17, 2003.
RIG RELEASED:	March 19, 2003 (estimated).
SURFACE CASING:	Ran 12 joints of 219.1mm, 35.7kg/m, K-55, ST&C casing. Landed @ 200.9m K.B. Cemented with 15 tonnes of 0:1:0 class "G" + 3% $CaCl_2$. Had 2.0m^3 good cement returns.
HOLE SIZE:	200mm
TOTAL DEPTH	800m
DRILLSTEM TESTS:	Data not included in this report.
CORES:	None
CONTRACTOR:	Precision Drilling Inc. RIG NO.: 117
ENGINEER:	Brian Neigum
GEOLOGIST:	G.J. McNeill, P.Geol.
OPERATOR:	PARAMOUNT RESOURCES LTD.
WELL STATUS:	Plugged and abandoned.

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

MARKERS & FORMATION TOPS

FORMATION	PROGNOSIS		SAMPLES		LOGS	
	M.D.	SUBSEA	M.D.	SUBSEA	M.D.	SUBSEA
SCATTER	N/A	N/A	295.0	-0.3	294.7	0.0
GARBUTT	N/A	N/A	393.0	-98.3	393.0	-98.3
GARBUTT RADIOACTIVE	N/A	N/A	???	???	530.8	-236.1
CHINKEH	N/A	N/A	576.5	-281.8	572.3	-277.6
PERMIAN	505.7	-211.0	606.0	-311.3	607.2	-312.5
KINDLE	N/A	N/A	659.0	-364.3	661.5	-366.8
MATTSON	N/A	N/A	686.5	-391.8	685.5	-390.8
MATTSON 2B	530.7	-236.0	—	—	—	—
MATTSON M3	580.7	-286.0	717.5	-422.8	717.1	-422.4
MATTSON M4	N/A	N/A	776.0	-481.3	776.2	-481.5
TOTAL DEPTH	605.7	-311.0	800.0	-505.3	800.3	-505.6

GROUND ELEVATION: 289.9M
K.B. ELEVATION: 294.7M
T.D. DRILLER: 800.0M
T.D. LOGGER: 800.3M

BIT RECORD

BIT NO.	SIZE (MM)	TYPE	SERIAL NO.	IN	OUT	METRES	HRS.	AVE. R.O.P.	CONDITION
1A	311	L-117	126641	0	120	120	4.25	28.2	4-2-1
2A	311	LS115	203032	120	201	81	7.00	11.6	—
1	200	CH18XG	187387	201	652	451	58.50	7.7	8-8-0
2	200	CH47	176243	652	800	148	50.25	2.9	4-2-1

SURVEY SUMMARY

DEPTH (M)	DEGREE(S)
31	0.75
58	1.25
77	1.00
105	1.25
130	1.75
158	2.00
189	1.75
226	2.70
308	2.27
369	0.66
387	0.96
406	0.42
444	0.58
463	0.06
501	0.34
520	0.30
539	0.35
558	0.47
637	0.31
746	2.00
793	1.50

SAMPLE DESCRIPTIONS

200.0M - 205.0M: CLAYSTONE WITH MINOR AMOUNTS OF SHALE AND CALCITE CRYSTALS.
CLAYSTONE: WHITE, SOFT, AND SLIGHTLY SILTY.
SHALE: PREDOMINANTLY MEDIUM GRAY, AND PLATY TO SUB-BLOCKY.

205.0M - 210.0M: INTERBEDDED? CLAYSTONE AND SHALE, WITH MINOR AMOUNTS OF CALCITE CRYSTALS
CLAYSTONE: AS ABOVE.
SHALE: AS ABOVE.

210.0M - 230.0M: SHALE WITH MINOR AMOUNTS OF CLAYSTONE (BENTONITE?).
SHALE: AS ABOVE.
CLAYSTONE: AS ABOVE.

230.0M - 235.0M: SHALE WITH MINOR AMOUNTS OF CLAYSTONE, AND RARE CALCITE CRYSTALS.
SHALE: AS ABOVE.
CLAYSTONE: AS ABOVE.

235.0M - 240.0M: SHALE WITH MINOR AMOUNTS OF INTERBEDDED CLAYSTONE.
SHALE: MEDIUM GRAY, PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SLIGHTLY SILTY IN PART.
CLAYSTONE: AS ABOVE.

240.0M - 245.0M: SHALE WITH MINOR AMOUNTS OF INTERBEDDED CLAYSTONE.
SHALE: MEDIUM GRAY. SUB-BLOCKY TO BLOCKY. MICROMICACEOUS IN PART, SILTY IN PART, AND SLIGHTLY PYRITIC.
CLAYSTONE: AS ABOVE.

245.0M - 250.0M: SHALE WITH RARE TRACES OF SHELL FRAGMENTS.
SHALE: DARK GRAY. SUB-BLOCKY TO BLOCKY, SLIGHTLY SILTY, AND SLIGHTLY MICROMICACEOUS.

250.0M - 255.0M: SHALE: AS ABOVE.

255.0M - 260.0M: SHALE WITH FAIR AMOUNT INTERBEDDED BENTONITE? AND RARE CALCITE CRYSTALS.
SHALE: AS ABOVE.

260.0M - 265.0M: INTERBEDDED SHALE AND BENTONITE, WITH MINOR AMOUNTS OF CHERT.
SHALE: GENERALLY AS ABOVE, EXCEPT SLIGHTLY MORE SILTY.
CHERT: COARSE TO VERY COARSE GRAINED TO PEBBLE SIZE.
TRANSLUCENT PINK, GREEN, AND BROWN. GENERALLY WELL ROUNDED, AND FRACTURED IN PART

265.0M - 270.0M: SHALE WITH MINOR AMOUNTS OF BENTONITE?
SHALE: DARK GRAY. EARTHY, SUB-BLOCKY TO BLOCKY, AND SILTY.

270.0M - 275.0M: INTERBEDDED SHALE AND BENTONITE?
SHALE: GENERALLY AS ABOVE.

275.0M - 290.0M: INTERBEDDED SHALE AND BENTONITE WITH RARE QUARTZ GRAINS.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. SLIGHTLY MICRO-MICACEOUS, AND SLIGHTLY SILTY.
BENTONITE: OFF-WHITE, SOFT, AND ARGILLACEOUS TO SILTY.
QUARTZ GRAINS: MEDIUM TO COARSE GRAINED, AND CLEAR.

290.0M - 295.0M: SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

295.0M - 297.0M: BENTONITE: OFF-WHITE. SOFT TO MODERATELY HARD. SILTY AND VERY RARELY, SLIGHTLY GLAUCONITIC.

297.0M - 301.5M: SHALE: AS ABOVE.

301.5M - 305.0M: BENTONITE: OFF WHITE. SOFT TO MODERATELY HARD, AND SILTY.

305.0M - 310.0M: SAMPLE NOT CAUGHT - FLUSHING SHAKER SCREENS.

310.0M - 315.0M: INTERBEDDED SHALE, SILTSTONE, AND BENTONITE.
SHALE: AS ABOVE, WITH RARE TRACES OF GLAUCONITE.
BENTONITE: AS ABOVE.
SILTSTONE: LIGHT TAN TO LIGHT GRAY. QUARTZOSE IN PART, WITH MINOR AMOUNTS OF GLAUCONITE. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

315.0M - 318.0M: SILTSTONE: GENERALLY AS ABOVE. GRADES IN PART TO VERY FINE GRAINED SANDSTONE WITH DEPTH.

318.0M - 330.0M: SANDSTONE: SILT SIZED, TO VERY FINE GRAINED, AND LIGHT TAN TO LIGHT GRAY. QUARTZOSE, WELL MINOR AMOUNTS OF SCATTERED DARK MINERALS, AND MINOR AMOUNTS OF GLAUCONITE. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

330.0M - 333.0M: SANDSTONE: GENERALLY AS ABOVE, EXCEPT LESS GLAUCONITE THAN ABOVE. OCCASIONAL AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TAN HYDROCARBON STAIN.

333.0M - 334.0M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

334.0M - 336.0M: SANDSTONE: AS ABOVE.

336.0M - 337.0M: SHALE: AS ABOVE.

337.0M - 339.0M: SANDSTONE: AS ABOVE.

339.0M - 341.0M: SHALE: AS ABOVE.

341.0M - 343.0M: SANDSTONE: AS ABOVE.

343.0M - 344.0M: SHALE: AS ABOVE.

344.0M - 346.5M: SANDSTONE: AS ABOVE.

346.5M - 348.5M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE, AND DENSE. NO VISIBLE POROSITY.

348.5M - 350.0M: SANDSTONE: AS ABOVE.

350.0M - 351.0M: SHALE: AS ABOVE.

351.0M - 352.0M: SANDSTONE: AS ABOVE.

352.0M - 352.5M: SHALE: AS ABOVE.

352.5M - 355.0M: SANDSTONE: AS ABOVE.

355.0M - 365.0M: INTERBEDDED SILTSTONE AND SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SILTSTONE: WHITE TO LIGHT GRAY, SLIGHTLY TO MODERATELY ARGILLACEOUS, AND SLIGHTLY GLAUCONITIC. WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS IN PART, AND SILTY IN PART.

365.0M - 372.0M: INTERBEDDED SILTSTONE AND SHALE WITH MINOR AMOUNTS OF DOLOMITE.
SILTSTONE: AS ABOVE.
SHALE: AS ABOVE.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

372.0M - 373.5M: DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE TO MICRO-CRYSTALLINE, AND TIGHT.

373.5M - 374.0M: SHALE: AS ABOVE.

374.0M - 375.5M: SANDSTONE: SILT SIZED TO VERY FINE GRAINED. QUARTZOSE, AND GLAUCONITIC, WITH RARE SCATTERED DARK MINERALS. MODERATELY WELL INDURATED WITH CALCAREOUS CEMENT. NO VISIBLE POROSITY. MANY

SAMPLE DESCRIPTION, CONTINUED ...

AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN.

375.5M - 383.0M: SHALE AND MINOR AMOUNTS OF DOLOMITE.
SHALE: BLACK. SUB-BLOCKY TO BLOCKY. MICROMICACEOUS, GLAUCONITIC IN PART, AND SILTY IN PART.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, AND TIGHT.

383.0M - 388.0M: SANDSTONE: SILT SIZED TO VERY FINE GRAINED. QUARTZOSE, AND GLAUCONITIC, WITH RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW A QUESTIONABLE, EVEN, MEDIUM BROWN HYDROCARBON STAIN.

388.0M - 390.0M: SHALE, OCCURRENCES OF DOLOMITE, AND TRACES OF SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. SUB-BLOCKY TO BLOCKY. MICRO-MICACEOUS AND SILTY IN PART.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

390.0M - 393.0M: SANDSTONE: SILT SIZED TO PREDOMINANTLY VERY FINE GRAINED, ALSO FINE GRAINED IN PART. MEDIUM TO DARK BROWN. QUARTZOSE, GLAUCONITIC IN PART, AND ARGILLACEOUS IN PART, WITH RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON-CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW A QUESTIONABLE, EVEN, MEDIUM TO DARK BROWN HYDROCARBON STAIN. NO FLUORESCENCE, SOME SHOW A SLOW, PATCHY, LIGHT GREEN-YELLOW CUT FLUORESCENCE, AND A SLOW, WEAK, RIBBONY STREAMING CUT FLUORESCENCE.

393.0M - 401.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, SILTY IN PART, AND PYRITIC IN PART.

401.0M - 407.0M: SILTSTONE: LIGHT GRAY. QUARTZOSE, ARGILLACEOUS, AND GLAUCONITIC IN PART, WITH SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. APPEARS TIGHT.

407.0M - 410.0M: SHALE, ABUNDANT DOLOMITE, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

410.0M - 415.0M: SHALE: BLACK. SUB-BLOCKY TO BLOCKY. SILTY TO VERY SILTY.

415.0M - 420.0M: SHALE WITH OCCURRENCES OF DOLOMITE.
SHALE: AS ABOVE.

SAMPLE DESCRIPTION, CONTINUED ...

DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

420.0M - 435.0M: SHALE: GENERALLY AS ABOVE. GRADES TO BLACK SILTSTONE IN PART.

435.0M - 445.0M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: DARK GRAY, DARK GRAY-BROWN, AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART. GRADES TO SILTSTONE IN PART.

445.0M - 450.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: DARK GRAY, DARK GRAY-BROWN, AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART. GRADES TO SILTSTONE IN PART.
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE, AND TIGHT.

450.0M - 455.0M: INTERBEDDED SHALE AND SILTSTONE.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.

455.0M - 465.0M: INTERBEDDED SHALE AND SILTSTONE, WITH TRACE AMOUNTS OF DOLOMITE.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE, TO FINE CRYSTALLINE IN PART. APPEARS TIGHT.

465.0M - 470.0M: SHALE, ABUNDANT BENTONITE?, AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
BENTONITE: OFF WHITE, ARGILLACEOUS, AND SOFT.
DOLOMITE: AS ABOVE.

470.0M - 475.0M: INTERBEDDED SHALE AND SILTSTONE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
SILTSTONE: MEDIUM TO DARK BROWN, MEDIUM TO DARK GRAY. QUARTZOSE IN PART, AND GLAUCONITIC IN PART, WITH SCATTERED DARK MINERALS. NON CALCAREOUS, AND TIGHT.

475.0M - 480.0M: SHALE WITH MODERATELY AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SLIGHTLY GLAUCONITIC IN PART.
DOLOMITE: DARK BROWN, MICROCRYSTALLINE, AND TIGHT.

480.0M - 500.0M: SHALE, OCCURRENCES OF SILTSTONE, AND MINOR AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
SILTSTONE: DARK GRAY-BROWN. QUARTZOSE IN PART AND ARGILLACEOUS. WELL INDURATED WITH NON CALCAREOUS CEMENT, AND TIGHT.
DOLOMITE: GENERALLY AS ABOVE.

500.0M - 510.0M: SHALE WITH MINOR AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: LIGHT TO MEDIUM GRAY. PLATY, AND MICROMICACEOUS.
SILTSTONE: MEDIUM TO DARK GRAY/BROWN. QUARTZOSE IN PART, ARGILLACEOUS, AND GLAUCONITIC IN PART. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.
DOLOMITE: AS ABOVE.

510.0M - 520.0M: SHALE WITH MINOR AMOUNTS OF SILTSTONE AND DOLOMITE, AND RARE LOOSE QUARTZ GRAINS.
SHALE: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: AS ABOVE.
QUARTZ GRAINS: CLEAR, MEDIUM TO COARSE GRAINED, AND WELL ROUNDED TO SUB-ANGULAR.

520.0M - 525.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND SLIGHTLY MICROMICACEOUS.

525.0M - 535.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE AND SHELL FRAGMENTS.
SHALE: DARK GRAY. PREDOMINANTLY PLATY TO SUB-BLOCKY IN PART, AND SLIGHTLY MICROMICACEOUS.

535.0M - 540.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE, SHELL FRAGMENTS, AND WHITE CLAY MINERAL.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

540.0M - 545.0M: SHALE, MINOR AMOUNTS OF DOLOMITE AND WHITE CLAY, AND RARE SANDSTONE AGGREGATES.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.
SANDSTONE: FINE GRAINED. QUARTZOSE WITH SCATTERED BIOTITE. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

545.0M - 550.0M: SHALE WITH MINOR AMOUNTS OF DOLOMITE AND WHITE CLAY.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

550.0M - 555.0M: SHALE WITH TRACE AMOUNTS OF DOLOMITE, SHELL FRAGMENTS, AND WHITE CLAY.

SAMPLE DESCRIPTION, CONTINUED ...

SHALE: DARK GRAY. PLATY TO SUB-BLOCKY, MICROMICACEOUS, AND RARELY SLIGHTLY PYRITIC.

555.0M - 560.0M: AS ABOVE WITH SLIGHTLY GREATER AMOUNT DOLOMITE.

560.0M - 576.5M: SHALE, OCCURRENCES OF DOLOMITE AND CLAY, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
DOLOMITE: MEDIUM BROWN. CRYPTOCRYSTALLINE TO MICROCRYSTALLINE, AND TIGHT.

576.5M - 580.0M: SANDSTONE: VERY FINE TO FINE GRAINED. WHITE TO LIGHT GRAY. QUARTZOSE WITH ABUNDANT GLAUCONITE AND RARE SCATTERED DARK MINERALS. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

580.0M - 581.5M: CHERT: MEDIUM TO VERY COARSE GRAINED. VARI-COLOURED, MASSIVE, AND FRACTURED.

581.5M - 582.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO TRANSLUCENT WHITE WITH SCATTERED VARI-COLOURED CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, PATCHY TO EVEN, LIGHT GRAY/BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

582.0M - 586.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO TRANSLUCENT WHITE WITH SCATTERED VARI-COLOURED CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, PATCHY TO EVEN, LIGHT GRAY/BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

586.0M - 587.5M: SHALE: AS ABOVE.

587.5M - 590.0M: SANDSTONE: VERY FINE TO MEDIUM GRAINED. QUARTZOSE, ARGILLACEOUS, WITH RARE SCATTERED DARK CHERTS. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. AGGREGATES SHOW A QUESTIONABLE, EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, BUT NO FLUORESCENCE OR CUTS.

590.0M - 592.0M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.

592.0M - 595.0M: SANDSTONE: VERY FINE TO PREDOMINANTLY FINE GRAINED. CLEAR TO MILKY-WHITE WITH SCATTERED LIGHT BROWN CHERT. WELL INDURATED WITH SILICA CEMENT. NO VISIBLE POROSITY. NO SHOWS.

595.0M - 596.0M: SHALE: AS ABOVE.

596.0M - 601.5M: SANDSTONE: FINE TO MEDIUM GRAINED, MILKY WHITE TO LIGHT GRAY TO LIGHT TAN WITH SCATTERED DARK CHERTS AND GLAUCONITE. MODERATELY WELL TO WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT. NO VISIBLE POROSITY.

601.5M - 606.0M: SHALE: DARK GRAY, DARK BROWN-GRAY IN PART. PLATY TO SUB-BLOCKY. MICROMICACEOUS, GLAUCONITIC IN PART, SILTY IN PART, AND RARELY PYRITIC.

606.0M - 615.0M: CHERT: MEDIUM TO LARGER THAN VERY COARSE GRAINED. TRANSLUCENT WHITE, GRAY, AND BROWN. MASSIVE, AND FRACTURED.

615.0M - 616.5M: SHALE WITH TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND VERY SLIGHTLY SILTY IN RARE PART.

616.5M - 620.5M: DOLOMITE: DARK GRAY-BROWN. MICROCRYSTALLINE, ARGILLACEOUS, GLAUCONITIC IN PART, AND TIGHT.

620.5M - 621.0M: CHERT: LIGHT TO MEDIUM TRANSLUCENT BROWN. MASSIVE AND FRACTURED.

621.0M - 622.5M: SANDSTONE: VERY FINE TO FINE GRAINED. QUARTZOSE, AND ARGILLACEOUS, WITH SCATTERED DARK MINERALS AND RARE GLAUCONITE. WELL INDURATED WITH NON CALCAREOUS CEMENT. NO VISIBLE POROSITY.

622.5M - 625.5M: SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND RARELY PYRITIC.

625.5M - 626.0M: DOLOMITE: AS ABOVE.

626.0M - 634.5M: CHERT: TRANSLUCENT LIGHT TO MEDIUM BROWN AND LIGHT TO MEDIUM GRAY. MASSIVE AND FRACTURED. RARE CHIPS SHOW GOOD, PATCHY, SUCROSIC, DARK BROWN HYDROCARBON STAIN ON ONE EDGE.

634.5M - 636.0M: SHALE: LIGHT, MEDIUM, DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-MICACEOUS AND SLIGHTLY PYRITIC IN RARE PART.

636.0M - 640.5M: CHERT: TRANSLUCENT LIGHT TO MEDIUM BROWN AND LIGHT TO MEDIUM GRAY. MASSIVE AND FRACTURED.

640.5M - 641.0M: SHALE: AS ABOVE - CAVINGS?

641.0M - 646.0M: CHERT: AS ABOVE, ALSO DARK GRAY IN PART. SOME WITH PYROBITUMEN SPOTTING?

646.0M - 646.5M: SHALE: AS ABOVE - CAVINGS?

646.5M - 652.0M: CHERT: AS ABOVE, ALSO DARK GRAY IN PART. SOME WITH PYROBITUMEN SPOTTING?

652.0M - 653.5M: SHALE WITH MINOR AMOUNTS OF DOLOMITE.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS AND SILTY, GRADING IN PART TO SILTSTONE.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

653.5M - 659.0M: CHERT: AS ABOVE, ALSO OPAQUE WHITE AND EARTHY IN PART.

659.0M - 665.0M: INTERBEDDED SHALE, SILTSTONE AND DOLOMITE WITH MINOR AMOUNTS OF CHERT.
SHALE: AS ABOVE.
SILTSTONE: MEDIUM TO DARK GRAY-BROWN, DARK GRAY, BLOCKY. MICROMICACEOUS AND DOLOMITIC IN PART.
DOLOMITE: DARK BROWN. MICROCRYSTALLINE, MODERATELY TO FAIRLY ARGILLACEOUS, SLIGHTLY TO MODERATELY CALCAREOUS, AND TIGHT.
CHERT: AS ABOVE - CAVINGS?

665.0M - 670.0M: INTERBEDDED DOLOMITE AND SILTSTONE, WITH MINOR AMOUNTS OF SHALE.
SILTSTONE: AS ABOVE.
DOLOMITE: AS ABOVE.
SHALE: AS ABOVE.

670.0M - 675.0M: INTERBEDDED DOLOMITE AND SHALE, WITH MINOR AMOUNTS OF CHERT.
DOLOMITE: DARK GRAY-BROWN. CRYPTOCRYSTALLINE TO FINE CRYSTALLINE. MODERATELY TO FAIRLY ARGILLACEOUS, SLIGHTLY TO MODERATELY CALCAREOUS, AND TIGHT.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?

675.0M - 686.5M: INTERBEDDED DOLOMITE AND SHALE, WITH MINOR AMOUNTS OF LIMESTONE AND SHELL FRAGMENTS.
DOLOMITE: AS ABOVE.
SHALE: DARK GRAY-BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
LIMESTONE: LIGHT GRAY-WHITE. SOFT, CHALKY, AND SLIGHTLY ARGILLACEOUS.

686.5M - 690.0M: SANDSTONE: SILT SIZED, TO VERY FINE GRAINED, TO FINE GRAINED IN RARE PART.. QUARTZOSE, AND CLEAR TO MILKY WHITE WITH RARE SCATTERED DARK TRANSLUCENT GRAINS. AGGREGATES ARE MODERATELY TO WELL INDURATED WITH CALCAREOUS CEMENT AND HAVE TRACES OF POOR VISIBLE INTERGRANULAR POROSITY. ALL SHOW A PREDOMINANTLY PATCHY, TO EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, A PATCHY TO EVEN, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, EVEN, GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, RIBBONY, MILKY-YELLOW

SAMPLE DESCRIPTION, CONTINUED ...

STREAMING CUT FLUORESCENCE.

690.0M - 692.5M: SHALE: AS ABOVE - CAVINGS?

692.5M - 698.0M: SANDSTONE: PREDOMINANTLY VERY FINE TO FINE GRAINED, ALSO MEDIUM GRAINED IN RARE PART. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH SLIGHTLY CALCAREOUS CEMENT - LOOSE GRAINS ARE RARE. RARE AGGREGATES HAVE TRACES OF POOR VISIBLE INTERGRANULAR POROSITY. ALL SHOW A PATCHY TO EVEN, LIGHT TO MEDIUM BROWN HYDROCARBON STAIN, NO FLUORESCENCE, SOME ALSO SHOW A SLOW, PATCHY TO EVEN, LIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A PATCHY, BRIGHT GRAY-YELLOW DRY CUT FLUORESCENCE.

698.0M - 701.0M: SHALE WITH MINOR AMOUNTS OF LIMESTONE AND SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY, AND MICRO-MICACEOUS.
LIMESTONE: AS ABOVE.

701.0M - 705.0M: SANDSTONE: PREDOMINANTLY VERY FINE TO FINE GRAINED, ALSO SILT SIZED AND MEDIUM GRAINED IN RARE PART. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY WELL TO WELL INDURATED WITH CALCAREOUS CEMENT - MINOR AMOUNTS OF LOOSE GRAINS. NO VISIBLE POROSITY. ALL AGGREGATES SHOW AN EVEN, MEDIUM BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, PATCHY TO EVEN, DULL GRAY-YELLOW CUT FLUORESCENCE, AND A WEAK, IMMEDIATE, BRIGHT MILKY-YELLOW STREAMING CUT FLUORESCENCE.

705.0M - 706.0M: SHALE: DARK GRAY. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND PYRITIC AND SILTY IN RARE PART.

706.0M - 714.0M: SANDSTONE: VERY FINE TO FINE GRAINED, TO FINE TO MEDIUM GRAINED WITH DEPTH. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE MODERATELY FRIABLE TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. ALL SHOW A PATCHY, MEDIUM TO DARK BROWN HYDROCARBON STAIN, A PATCHY, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, PATCHY TO EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A SLOW, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

714.0M - 717.5M: SHALE WITH MINOR AMOUNTS OF CHERT AND SHELL FRAGMENTS.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN PART.
CHERT: AS ABOVE - CAVINGS?

717.5M - 723.0M: SANDSTONE: VERY FINE TO FINE GRAINED, TO MEDIUM GRAINED WITH DEPTH. QUARTZOSE, AND CLEAR TO MILKY WHITE. AGGREGATES ARE

SAMPLE DESCRIPTION, CONTINUED ...

MODERATELY FRIABLE TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. APPEARS TO BECOME MORE FRIABLE WITH DEPTH. ALL SHOW A PATCHY, LIGHT TO DARK BROWN HYDROCARBON STAIN, OCCASIONAL AGGREGATES SHOW AN EVEN, DULL YELLOW FLUORESCENCE, MOST SHOW AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

723.0M - 726.5M: SHALE, MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY AND BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND GLAUCONITIC IN PART.
DOLOMITE: MEDIUM TO DARK BROWN. CRYPTOCRYSTALLINE TO MICRO-CRYSTALLINE AND TIGHT.

726.5M - 729.0M: SANDSTONE: VERY FINE TO FINE GRAINED, WITH LOOSE GRAINS TO MEDIUM GRAINED. QUARTZOSE, AND CLEAR TO FROSTED. AGGREGATES ARE MODERATELY WELL TO WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. ALL SHOW A PATCHY TO EVEN, LIGHT TO DARK BROWN HYDROCARBON STAIN, AN EVEN, DULL YELLOW FLUORESCENCE, AN IMMEDIATE, EVEN, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, WEAK, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

729.0M - 733.5M: SHALE WITH MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACES OF CHERT.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?

773.5M - 737.0M: SANDSTONE: AS ABOVE. SHOWS AS ABOVE.

737.0M - 740.0M: SHALE WITH MINOR AMOUNTS OF SHELL FRAGMENTS, AND TRACES OF CHERT AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE - CAVINGS?
DOLOMITE: DARK BROWN. CRYPTOCRYSTALLINE AND TIGHT.

740.0M - 741.5M: SILTSTONE: MEDIUM GRAY-BROWN. QUARTZOSE IN PART. WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT. NO VISIBLE POROSITY.

741.5M - 743.0M: SHALE: DARK GRAY. PLATY, MICROMICACEOUS, SILTY IN PART, AND GLAUCONITIC IN RARE PART.

743.0M - 744.0M: SANDSTONE: VERY FINE TO FINE GRAINED. QUARTZOSE AND MILKY-WHITE. AGGREGATES WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND ARE SLIGHTLY CALCAREOUS. NO VISIBLE POROSITY.

744.0M - 745.0M: SHALE: AS ABOVE.

745.0M - 747.0M: SANDSTONE: VERY FINE TO FINE GRAINED, LIGHT GRAY AGGREGATES. QUARTZOSE, CLEAR TO FROSTED, AND ARGILLACEOUS. AGGREGATES ARE WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT.

747.0M - 748.5M: SHALE: GENERALLY AS ABOVE.

748.5M - 750.0M: SANDSTONE: FINE GRAINED, TO MEDIUM GRAINED IN PART, MILKY-WHITE AGGREGATES WITH OCCASIONAL MEDIUM - COARSE GRAINED, WELL ROUNDED, VARI-COLOURED CHERT AND CLEAR QUARTZ GRAINS. AGGREGATES ARE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH SILICA CEMENT, AND OCCASIONALLY HAVE FAIR VISIBLE INTERGRANULAR POROSITY. MOST SHOW AN EVEN, LIGHT TAN HYDROCARBON STAIN, A VERY FAINT, PATCHY GRAY FLUORESCENCE, AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND A SLOW, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

750.0M - 751.0M: SHALE: GENERALLY AS ABOVE.

751.0M - 754.0M: SANDSTONE: PREDOMINANTLY FINE TO MEDIUM GRAINED, TO COARSE GRAINED IN RARE PART. CLEAR TO FROSTED QUARTZ. PREDOMINANTLY UNCONSOLIDATED. AGGREGATES ARE FRIABLE TO MODERATELY WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT, AND APPEAR TIGHT. MANY LOOSE GRAINS AND ALL AGGREGATES SHOW A PATCHY, MEDIUM TO DARK BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, EVEN, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, FAIR, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

754.0M - 760.0M: SHALE, ABUNDANT SANDSTONE, MINOR AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SHELL FRAGMENTS.
SHALE: AS ABOVE.
SANDSTONE: AS ABOVE - CAVINGS?
CHERT: AS ABOVE - CAVINGS?

760.0M - 762.5M: AS ABOVE WITH TRACE AMOUNTS OF DOLOMITE.
DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE, AND TIGHT.

762.5M - 765.5M: SANDSTONE: PREDOMINANTLY FINE TO MEDIUM GRAINED. CLEAR TO FROSTED, AND PREDOMINANTLY UNCONSOLIDATED. AGGREGATES ARE MODERATELY WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEAR TIGHT. MOST SHOW A SPOTTY, DARK BROWN HYDROCARBON STAIN, NO FLUORESCENCE, AN IMMEDIATE, PATCHY, DULL YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, WEAK, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

765.5M - 769.0M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-

SAMPLE DESCRIPTION, CONTINUED ...

MICACEOUS, AND SILTY IN PART.
CHERT: AS ABOVE - CAVINGS?
SILTSTONE: DARK GRAY-BROWN. SUB-BLOCKY. WELL INDURATED WITH NON CALCAREOUS (SILICA?) CEMENT AND APPEARS TIGHT.

769.0M - 770.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

770.0M - 771.5M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: DARK GRAY, CRYPTOCRYSTALLINE, AND TIGHT.

771.5M - 773.5M: SANDSTONE: AS ABOVE.

773.5M - 776.0M: SHALE, MODERATELY AMOUNTS OF CHERT, AND TRACE AMOUNTS OF SILTSTONE AND DOLOMITE.
SHALE: AS ABOVE.
CHERT: AS ABOVE.
SILTSTONE: AS ABOVE.
DOLOMITE: DARK GRAY, CRYPTOCRYSTALLINE, AND TIGHT.

776.0M - 778.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

780.0M - 781.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

781.0M - 783.0M: SHALE WITH OCCURRENCES OF DOLOMITE.
SHALE: AS ABOVE.
DOLOMITE: AS ABOVE.

783.0M - 784.0M: SANDSTONE: VERY FINE TO FINE GRAINED. CLEAR TO FROSTED, AND QUARTZOSE. AGGREGATES ARE MODERATELY WELL INDURATED WITH SILICA CEMENT AND APPEAR TIGHT. NO SHOWS.

784.0M - 785.5M: SHALE, OCCURRENCES OF CLAY, AND TRACE AMOUNTS OF CHERT, DOLOMITE, AND SHELL FRAGMENTS.
SHALE: AS ABOVE.
CHERT: AS ABOVE.

SAMPLE DESCRIPTION, CONTINUED ...

DOLOMITE: DARK BROWN, CRYPTOCRYSTALLINE AND TIGHT.

785.5M - 787.5M: SANDSTONE: AS ABOVE.

787.5M - 792.5M: SHALE WITH OCCURRENCES OF SANDSTONE, CLAY, CHERT AND TRACE AMOUNTS OF DOLOMITE.
SHALE: MEDIUM TO DARK GRAY. PLATY TO SUB-BLOCKY. MICRO-MICACEOUS, AND SILTY IN RARE PART.
SANDSTONE: AS ABOVE - CAVINGS?
CHERT: AS ABOVE - CAVINGS?
DOLOMITE: MEDIUM BROWN, CRYPTOCRYSTALLINE AND TIGHT.

792.5M - 793.5M: SANDSTONE: VERY FINE GRAINED, AND LIGHT BROWN. QUARTZOSE IN PART, ARGILLACEOUS IN PART, AND RARELY GLAUCONITIC. AGGREGATES ARE WELL INDURATED WITH CALCAREOUS CEMENT AND APPEAR TIGHT. ALL SHOW A QUESTIONABLE, EVEN, LIGHT BROWN HYDROCARBON STAIN.

793.5M - 797.0M: SHALE WITH TRACES OF DOLOMITE AND CHERT.
SHALE: DARK GRAY TO BLACK. PLATY TO SUB-BLOCKY. MICROMICACEOUS, AND SILTY IN RARE PART.
CHERT: AS ABOVE - CAVINGS.

797.0M - 798.5M: SANDSTONE: VERY FINE TO FINE GRAINED AND LIGHT RED-BROWN. QUARTZOSE, PYRITIC IN RARE PART, AND WELL INDURATED WITH CALCAREOUS CEMENT. NO VISIBLE POROSITY. ALL SHOW AN EVEN, VERY LIGHT TAN-RED, AND RARELY A PATCHY DARK BROWN HYDROCARBON STAIN. SOME SHOW A PATCHY TO EVEN DULL YELLOW FLUORESCENCE; MOST AN EVEN, BRIGHT YELLOW CUT FLUORESCENCE, AND A MODERATELY FAST, STRONG, RIBBONY TO MASSIVE, MILKY-YELLOW STREAMING CUT FLUORESCENCE.

798.5M - 800.0M: SHALE: LIGHT GREEN-GRAY. SUB-BLOCKY, MICROMICACEOUS, AND SLIGHTLY CALCAREOUS.

PARAMOUNT ET AL McKAY LAKES K-36
U.W.I.: 300K366020123150

GEOLOGICAL SUMMARY

THIS WELL WAS SPUDDED ON MARCH 8, 2003 AND DRILLING WAS COMPLETED ON MARCH 17, 2003. IT WAS DRILLED TO EXPLORE THE HYDROCARBON POTENTIAL OF THE MATTSON 2B AND M3 SANDS. FIVE METRE SAMPLES WERE CAUGHT, WASHED, AND VIALED FOR THE N.E.B. FROM 20 METRES TO TOTAL DEPTH. IN ADDITION, 10 METRE SAMPLES WERE CAUGHT AND BAGGED, AND TURNED IN TO THE N.E.B. FIVE METRE SAMPLES WERE CAUGHT, WASHED, AND DESCRIBED FOR THE CLIENT, FROM 200 METRES TO TOTAL DEPTH. A PORTABLE GAS DETECTOR WAS INSTALLED AND MONITORED FROM DRILL OUT TO TOTAL DEPTH. ALL DEPTHS REFERRED TO IN THIS SUMMARY ARE LOGGED DEPTHS RELATIVE TO THE KELLY BUSHING ELEVATION.

THE MAIN ZONE OF INTEREST, THE MATTSON 2B, WAS ABSENT AT THIS LOCATION.

THE MATTSON M3 WAS INTERSECTED AT 717.1 METRES. THESE SANDS WERE GENERALLY VERY FINE TO FINE GRAINED, BUT APPEARED TO GRADE TO MEDIUM GRAINED WITH DEPTH. THEY WERE QUARTZOSE, AND CLEAR TO MILKY-WHITE IN COLOUR. THE AGGREGATES PRESENT IN THESE SAMPLES WERE MODERATELY FRIABLE TO MODERATELY WELL INDURATED WITH A SILICA CEMENT, AND HAD NO VISIBLE INTERGRANULAR POROSITY. THEY APPEARED TO BECOME MORE FRIABLE WITH DEPTH. THEY SHOWED A PATCHY, LIGHT TO DARK BROWN HYDROCARBON STAIN. OCCASIONAL AGGREGATES SHOWED AN EVEN, DULL YELLOW FLUORESCENCE, AND MOST ALSO SHOWED AN IMMEDIATE, EVEN, BRIGHT GRAY-YELLOW CUT FLUORESCENCE, AND AN IMMEDIATE, MODERATE, RIBBONY, MILKY-YELLOW STREAMING CUT FLUORESCENCE. THE GAS DETECTOR READINGS RANGED FROM 0%, AT THE TOP OF THIS INTERVAL, TO APPROXIMATELY 1.5% NEAR THE MIDDLE OF THESE SANDS.

SUBSEQUENT TO THE DRILLING AND LOGGING OPERATIONS, DRILLSTEM TESTS WERE CONDUCTED, AND THIS WELL WAS PLUGGED AND ABANDONED.

THE ABOVE IS A BRIEF GEOLOGICAL SUMMARY OUTLINING THE MAIN ZONES OF HYDROCARBON POTENTIAL AND / OR INTEREST THAT WERE ENCOUNTERED IN THIS WELL BORE.

SUBMITTED CORDIALLY,

G.J. McNEILL, P.GEOL. / L. HORBACK, P. GEOL.

PROFESSIONAL GEOLOGIST ALBERTA

LITHOLOGY STRIP LOG

WellSight Systems

Scale 1:240 (5"=100') Metric

Well Name:	PARAMOUNT ET AL McKAY LAKES K-36		
Location:	300/K366020123150		
Licence Number:	1966	**Region:**	Ft. Liard, N.W.T.
Spud Date:	14:00hrs, Mar 8/03	**Drilling Completed:**	02:40hrs, Mar 17
Surface Coordinates:	60 15' 45.560" / 123 21' 58.379"		
Bottom Hole Coordinates:			
Ground Elevation (m):	289.9m	**K.B. Elevation (m):**	294.7m
Logged Interval (m):	200m To: 800m	**Total Depth (m):**	800m
Formation:	Mattson		
Type of Drilling Fluid:	Floc water / Gel-Chem		

Printed by WellSight Log Viewer from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: PARAMOUNT RESOURCES LTD.
Address: 888 - 3rd Street S.W.
Calgary, AB. T2P 5C5

GEOLOGIST

Name: G.J. (Jeff) McNEILL
Company: T.I.H. CONSULTING LTD.
Address: 1602 - 5th Street N.E.
Calgary, AB. T2E 7W3
Phone: (403) 233-7729

Comments

Ran 17 jts, 219.1mm, 35.7Kg/m, K-55, 8rd, ST&C csg. Landed @ 200.9m K.B. Cemented w/ 15 tonnes 0:1:0 class "G" + 3% CaCl2. Had 2.0m3 returns to surface. Plug down @ 16:00 hrs, Mar 10/'03.

ROCK TYPES

Anhy, Bent, Brec, Cht, Clyst, Coal, Congl, Dol, Gyp, Igne, Lmst, Meta, Mrlst, Salt, Shale, Shcol, Shgy, Sltst, Ss, Till, Blank

ACCESSORIES

MINERAL: Anhy, Arggrn, Arg, Bent, Bit, Brecfrag, Calc, Carb, Chtdk, Chtlt, Dol, Feldspar, Ferrpel, Ferr, Glau, Gyp, Hvymin, Kaol, Marl, Minxl, Nodule, Phos, Pyr, Salt, Sandy, Silt, Sil, Sulphur, Tuff

FOSSIL: Algae, Amph, Belm, Biocist, Brach, Bryozoa, Cephal, Coral, Crin, Echin, Fish, Foram, Fossil, Gastro, Oolite, Ostra, Pelec, Pellet, Pisolite, Plant, Strom

STRINGER: Anhy, Arg, Bent, Coal, Dol, Gyp, Ls, Mrst, Sltstrg, Ssstrg

TEXTURE: Boundst, Chalky, Cryxln, Earthy, Finexln, Grainst, Lithogr, Microxln, Mudst, Packst, Wackest

OTHER SYMBOLS

POROSITY TYPE: Earthy, Fenest, Fracture, Inter, Moldic, Organic, Pinpoint, Vuggy

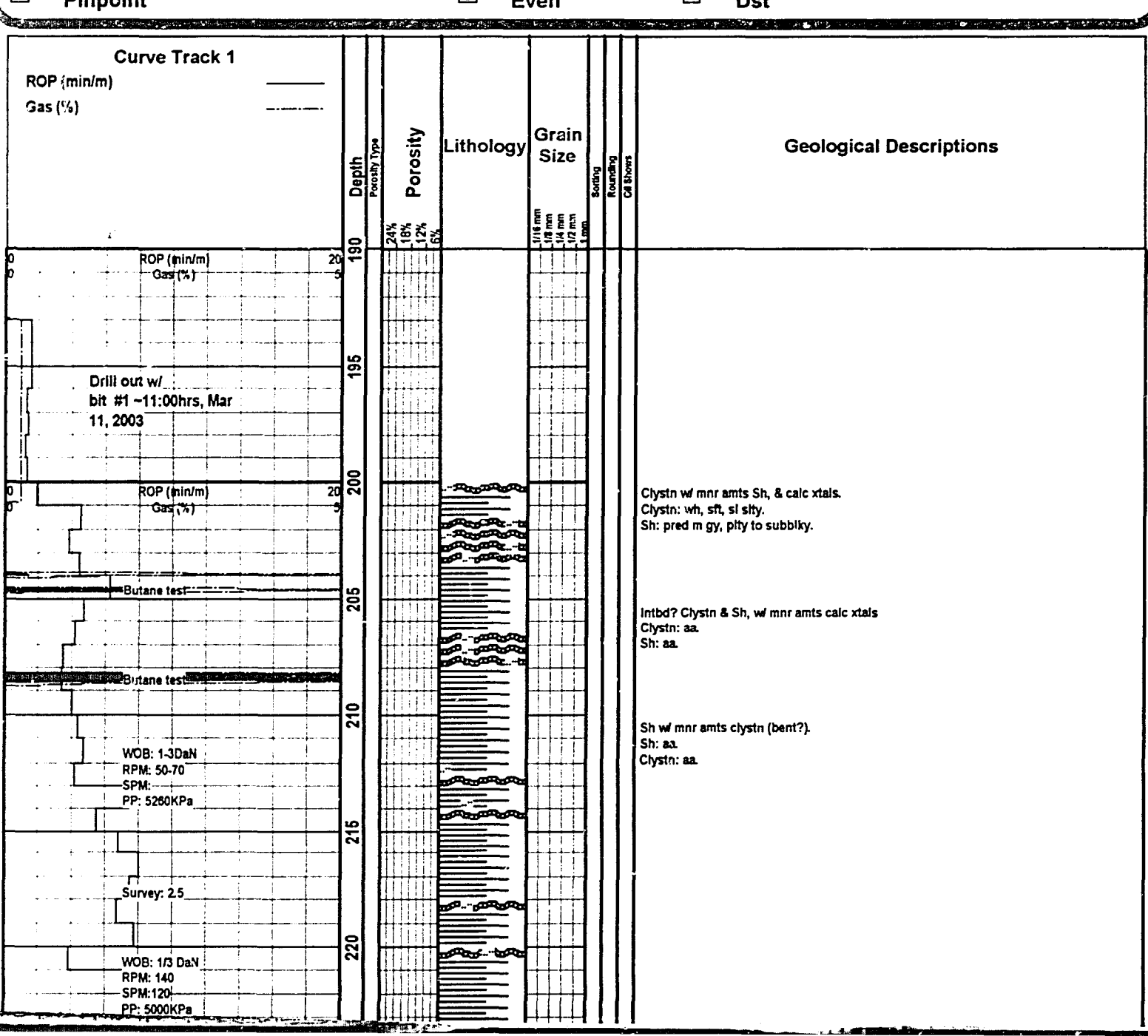
SORTING: Well, Moderate, Poor

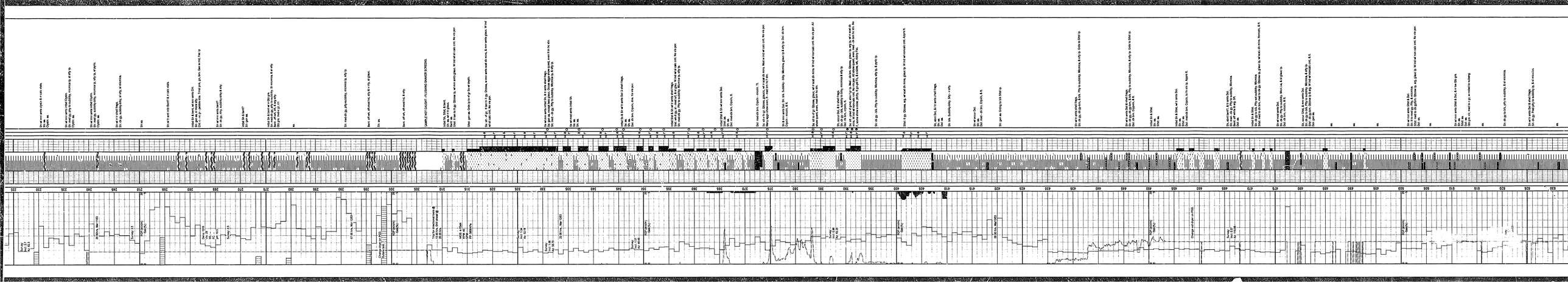
ROUNDING: Rounded, Subrnd, Subang, Angular

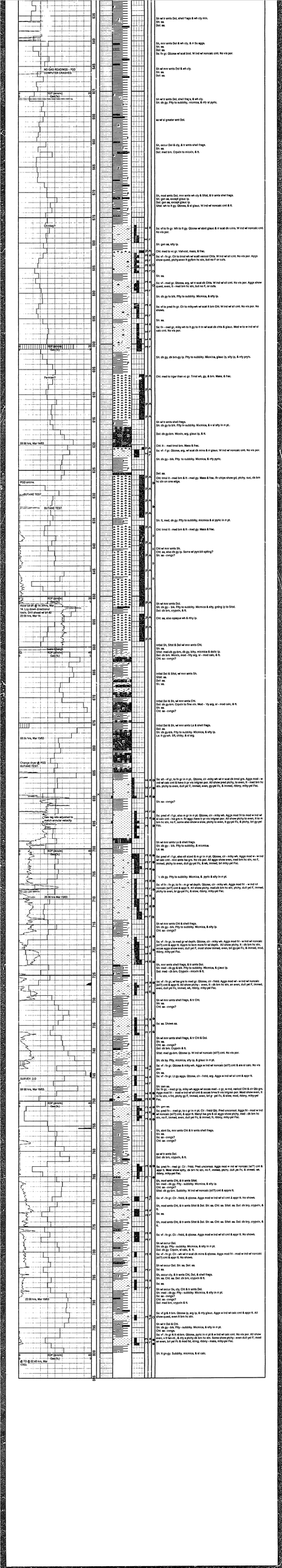
OIL SHOWS: Even, Spotted, Ques, Dead

INTERVALS: None, Core, Dst

EVENTS: Rft, Sidewall







Sh wf tr anhs Dol, shell frags & wh cly min.
Sh: aa.
Dol: aa.

Sh, mor anhs Dol & wh cly, & rr Ss eggs.
Sh: aa.
Dol: aa.
Ss: fn gr, Qtzose wf scat biot. W ind wf noncalc cmt. No vis por.

Sh wf mor anhs Dol & wh cly.
Sh: aa.
Dol: aa.

sh wf tr anhs Dol, shell frag's, & wh cly.
Sh: sft gy. Pfly to subbly, micrnica, & rrly vi pyrtc.

as wf sl greater amt Dol.

Sh, occur Dol & cly, & rr anhs shell frags.
Sh: aa.
Dol: med brn, Crpsln to microln, & ft.

Sh, mod anhs Dol, mor anhs wh cly & Shst, & tr anhs shel frags.
Sh: grn aa, except glauc lp.
Dol: grn aa, except glauc lp.
Shst: wh to lt gy, Qtzose, & sl glauc. W ind wf noncalc cmt & ft.

Ss: vf to fn gr. Wh to lt gy. Qtzose wf stnd glauc & rr scat ch ccins. W ind wf noncalc cmt. No vis por.

Sh: grn aa, sfty lp.

Chrt: med to vc gr. Vari-col, mass, & frac.
Ss: vf - fn gr. Clr to tmst wh wf scatt variicol Chrts. W ind wf sil cmt. No vis por. Appx show quest, pnctly,even ft gyfilm fm sils, but no F or cuts.

Sh: aa.

Ss: vf - med gr. Qtzose, arg, wf rr scat ch Chts. W ind wf sil cmt. No vis por. Appx show quest, even, fr - mod brn fm sh, but no F, or cuts.

Sh: sft gy to blk. Pfly to subbly. Micrnica, & sfty lp.

Ss: vf to pred fn gr. Clr to mlky wh wf scat lt brn Chl. W ind wf sil cmt. No vis por. No shows.

Sh: aa.

Ss: fn - med gr, mlky wh to lt gy to lt tn wf scat ch chts & glauc. Mod w to w ind wf sil calc cmt. No vis por.

Sh: sft gy, drk brn-gy lp. Pfly to subbly. Micrnica, glauc lp, sfty lp, & rrly pnyc.

Chrt: med to ltger than vc gr. Trnsl wh, gy, & brn. Mass, & frac.

Sh wf tr anhs shell frags.
Sh: sft gy to blk. Pfly to subbly. Micrnica, & v sl sfty in vt pt..

Dol: sft gy-brn. Microln, arg, glauc lp, & ft.

Chrt: tr - mod trnsl brn. Mass & frac.
Ss: vf - f gr. Qtzose, arg, wf scat ch chrts & rr glauc. W ind wf noncalc cmt. No vis por.

Sh: sft gy - blk. Pfly to subbly. Micrnica, & rrly pyrtc.

Dol: aa.
Chrt: trnsl tr - med brn & lt - med gy. Mass & frac. Rr chips show gd, pnchy, suc, ch brn to stn on vna edge.

Sh: ft, med, sft gy. Pfly to subbly, micrnica & sl pyrtc in vt pt.

Chrt: trnsl tr - med brn & lt - med gy. Mass & frac.

Chl wf mor amts Sh.
Dol: aa, also sft gy lp. Some wf pyrc/sh spttng?
Sh: aa - congs?

Sh wf mor amts Dol.
Sh: sft gy - blk. Pfly to subbly. Micrnica & sfty, grdng lp to Shst.
Dol: sft brn, crpsln, & ft.

Chrt: aa, also opaque wh & sfty lp.

Intbd Sh, Shst & Dol wf mor amts Chl.
Sh: aa.
Shst: med-dk gy-brn, sft gy, blky, micrnica & dolic lp.
Dol: sft brn, Microln, mod - frly ag, sl - mod calc, & ft.
Chrt: aa - congs?

Intbd Sh & Shst, wf mor amts Sh.
Sh: aa.
Dol: aa.
Ss: aa.

Intbd Dol & Sh, wf mor amts Chl.
Dol: sft gy-brn. Crpsln to fine xln. Mod - fry ag, sl - mod calc, & ft.
Sh: aa.
Chl: aa - congs?

Intbd Dol & Sh, wf mor amts Ls & shell frags.
Dol: aa.
Sh: sft gy-brn, Pfly to subbly. Micrnica, & sfty lp.
Ls: lt gy-wh, Sft, chlky, & sl arg.

Ss: wh - sl gy, to fn gr in vt pt., Qtzose, clr - milky wh wf rr scat ch Intrd grs. Appx mod - w ind wf calc cmt & here tr yr-sa intrgran por. All show pred pnchy, to even, fr - med brn fm stn, pnchy to even, dull yel F, immed, even, gryel Fc, & immed, ribbny, milky-yel Fac.

Sh: aa - congs?

Ss: pred vf - f gr, also m gr in vt pt. Qtzose, clr - milky wh. Appx mod-Tit to mod w ind wf sil calc cmt - ins grs in. Rr appr have tr yr-sa intrgran por. All show pnchy to even, fr to m brn fm stn, no F, some also show a slow, pnchy to even, fr gy-yel Fc, & pnchy, brt gy-yel Fac.

Sh wf mor amts Ls & shell frags.
Sh: sft gy - blk. Pfly to subbly, & micrnica.
Ls: aa.

Ss: pred vf - f gr, also wl sized & m gr in vt pt. Qtzose, clr - milky wh. Appx mod w - w ind wf calc cmt - mor amts fne grs. No vis por. All appx show even, med brn to stn, no F, immed, pnchy to even, dull gy-yel Fc, & wk, immed, brt milky-yel Fac.

- ½ sh, gy. Pfly to subbly. Micrnica, & pyrtc & sfty in vt pt.

Ss: vf to - fn gr, to fn - m gr wl depth. Qtzose, clr - milky wh. Appx mod Tit - w ind vf noncalc (w??) cmt & appr ft. All show pnchy, mel-stn fm stn, pnchy, dull yel F, immed, pnchy to even, brt gryel Fc, & even, ribbny, milky-yel Fac.

Sh wf mor amts Chl & shell frags.
Sh: sft gy-blk, Pfly to subbly. Micrnica, & sfty lp.
Chl: aa - congs?

Ss: vf - fn gr, to med gr wl depth. Qtzose, clr - milky wh. Appx mod Tit - w ind wf noncalc (w??) cmt & appr ft. Appx fr to occ more fri wl depth. All show pnchy, fr - stn fm stn, occas appx show even, dull yel F, most show immed, even, brt gy-yel Fc, & immed, mod, pnchy, ribby yel Fac.

Sh, mor anhs shell frags, & tr anhs Dol.
Sh: med - dk gy & blk. Pfly to subbly. Micrnica, & plnar lp.
Dol: med - dk brn, Crpsln - microln ft.

Ss: vf - fn gr, wl bs grs to med gr. Qtzose, clr - frstd. Appx mod wl - w ind wf noncalc (w??) cmt & appr ft. All show pnchy to even, fr - stn fm stn, an even, dull yel F, immed, even, dull-pnl Fc, immed, wk, ribbny, milkyyel Fac.

Sh wf mor amts shell frags, & tr Chl.
Sh: aa.
Chl: aa - congs?

Ss: aa. Shows aa.

Sh wf mor amts shell frags, & tr Chl & Dol.
Sh: aa.
Chl: aa - congs?
Dol: dk brn, Crpsln ft.
Shst: med gy-brn. Qtzose lp. W ind wf noncalc (w??) cmt. No vis por.

Sh: sft gy. Pfly, micrnica, sfty lp, & glauc ln in pt.

Ss: vf - fn gr. Qtzose & milky-wh. Appx w ind wf noncalc (w??) cmt & are wl calc. No vis por.

Sh: aa.
Ss: vf - fn gr. Lt gy appx. Qtzose, clr - frstd, arg. Appx w ind wf sil cmt & appr ft.

Sh: grn aa.
Ss: fn gr, - med gr lp, mlky wh appx wl occas med - r gr, w ind, varicol Chl & clr Qtz gls. Appx mod Tit - mod w ind wf sil cmt & occas hrwy fr vis intrgran por. Most show even, fr to stn, v sl, pnchy, gy-yel Fc, immed, even, brt gr - yel Fc, & stnd, mod, ribby, milky-yel Fac.

Sh: grn aa.
Ss: pred fn - med gr, loc v gr in vt pt. Cl - frstd. Qtz. Pred uncons. Appx fri - mod w ind wf noncalc (w??) cmt, & appr ft. Rare/ loc grs & sl appr show pnchy, mod - stn brn fm stn, no F, immed, even, dull yel Fc, & immed, fr, ribbny, milky-yel Fac.

Sh, abnt Ss, mor amts Chl & tr amts shell frags.
Sh: aa.
Ss: aa - congs?
Chl: aa - congs?

aa wf tr amts Dol.
Dol: dk brn, crpsln, & ft.

Ss: pred fn - med gr. Cl - frstd. Pred uncons. Appx mod w ind wf noncalc (w??) cmt & appr ft. Most show spty, dk brn fm stn, no F, immed, pnchy, dull yel Fc, & immed, wk, ribbny, milky-yel Fac.

Sh, mod amts Chl, & tr amts Shst.
Sh: med - dk gy. Pfly - subbly. Micrnica, & sfty lp.
Chl: aa - congs?
Shst: dk gy-brn. Subsbly. W ind wf noncalc (w??) cmt & appx ft.

Ss: vf - fn gr. Clr - frstd, & qtzose. Appx mod w ind wf sil cmt & appr ft. No shows.

Sh, mod amts Chl, & tr amts Shst & Dol. Sh: aa. Chl: aa. Shst: aa. Dol: ck brn, crpsln, & ft.

Ss: aa.

Sh, mod amts Chl, & tr amts Shst & Dol. Sh: aa. Chl: aa. Shst: aa. Dol: ck brn, crpsln, & ft.

Ss: vf - fn gr. Cl - frstd, & qtzose. Appx mod w ind wf sil cmt & appr ft. No shows.

Sh wf occur Dol.
Sh: dk gy. Pfly - subbly. Micrnica, & sfty in vt pt.
Dol: dk gy. Crpsln, wl calc, & ft.
Ss: vf - fn gr. Clr - wh wf rr scat ch mins & qtzose. Appx mod tit - mod w ind wf noncalc (w??) cmt & appr ft. No shows.

Sh wf occur Dol. Sh: aa. Dol: aa.
Ss: aa.

Sh, occur sfy, & tr amts Chl, Dol, & shell frags.
Sh: aa. Chl: aa. Dol: ck brn, crypsln & ft.
Ss: aa.

Sh wf occur Ss, sfty, Chl & tr amts Dol.
Sh: mod - dk gy. Pfly - subbly. Micrnica, & sfty in vt pt.
Ss: aa - congs?
Chl: aa - congs?
Dol: med brn, crypsln ft.

Ss: vf gr& fr brn. Qtzose lp, arg lp, & mfy glauc. Appx w ind wf calc cmt & appr ft. All show even, fr brn fm stn.

Sh wf tr Dol & Chl.
Sh: dk gy - blk. Pfly - subbly. Micrnica, & sfty in vt pt.
Chl: aa - congs.
Ss: vf - fn gr & fr sh brn. Qtzose, pyritz in vt pt & w ind wf calc cmt. No vis por. All show even, v fr brnvt , & rrly a pitchy stn brn fm stn. Some show pnchy - even dull yel F, most are even, wk yel Fc & mod Tit, ribby, milky - mas, milkyyel Fac.

Sh: fr gy-gy. Subbly, micrnica, & sl calc.

DST (1-3)

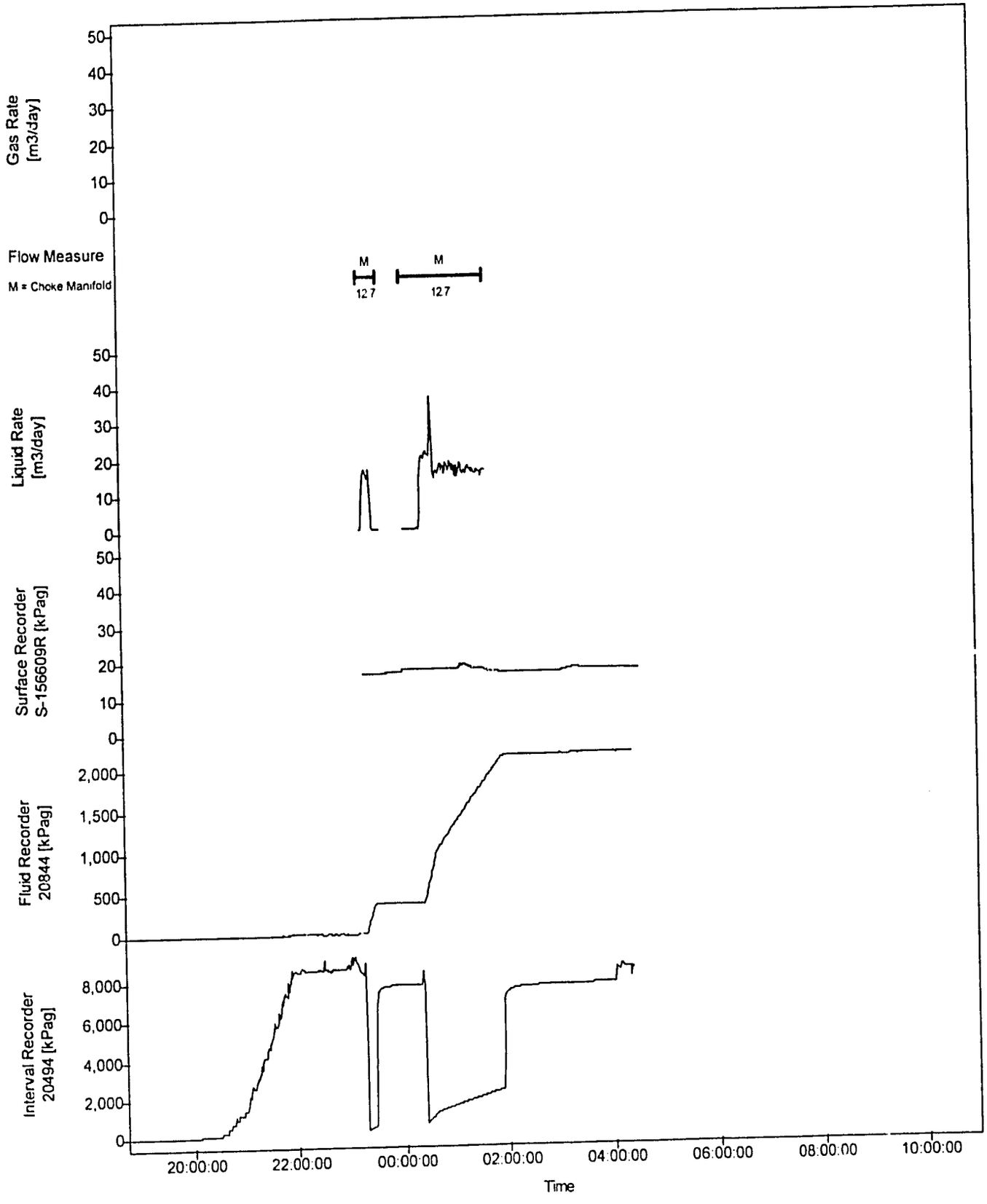
Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 1

N.E.B. COPY

Interval: 714.69 to 729.70 m

Test Date: 2003/03/17



Version 0.9.8

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ISO 9001-1994 Quality Certified Company

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Paramount et al Mackay Lakes K-36 60-20-120-15

DST 1 Interval: 714.7 to 729.7

DATE	03/03/17		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA (all measurements in SI units - pressure kPag, depth m)

Preflow	10 min				
Initial Shut In	55 min				
Second Flow	90 min				
Final Shut In	128 min				
A. Hydrostatic		8480	8620	8610	
B. First Flow	10	180	290	310	
B1. Final Flow	370	470	560	560	
C. Initial Shut In	370	7690	7810	7800	
D. Initial Flow	370	500	600	630	
E. Final Flow	2140	2240	2330	2320	
F. Final Shut In	2160	7620	7760	7760	
G. Hydrostatic		8390	8540	8530	
Recorder No.	20844	022	20494	20655	
Range	41369	34474	41369	41369	
Depth	695.49	704.81	715.85	715.85	
	Recovery	Inside	Interval	Interval	

RECOVERY

	Total m	In Collars m	In Pipe m	Volume m^3
	161.0	93	68	0.80
Muddy Water	161			

REMARKS AND BLOW DESCRIPTION

Preflow: Very weak to light blow to pail.
No gas to surface.

Second Flow: Very weak to light blow to pail.
Open to (3/4) 19.05 choke.
Blow very weak but steady.
Blow dropped off, no blow to pail.

Comments: Recoveries for DST #1 & #2.
Had safety hand take gas readings.
No gas indicated, nothing expected.

INFLATE STRADDLE

Stick Up		-5.88
Drill Pipe Tally		606.94
*Drill Collar Tally		93.23
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	695.49	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	704.81	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**714.69**	
Perforations		0.86
Upper Hanger	715.85	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Collar		9.45
Spacing		1.82
Cross Over Sub		0.30
Stub		0.42
BOTTOM INTERVAL	**729.70**	
Bott n Packer		1.86
Bell Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**733.71**	

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 1

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:30
Start Recorder	17:55
Recover Recorder	
Finish Lay Down Tools	04:30
Released	
Weight Set On Packer	12000
Weight Pulled Loose	40000
Initial String Weight	21000
Unseated String Weight	22000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.23
Drill Pipe Length	606.94

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

Prepared by: Jacqui Taylor.

Reviewed by: David Cubbedge

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 1**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* =$ **0.2 %**
$P_1 =$ **7935** (kPaa)
$P_2 =$ **7918** (kPaa)

√ This DST **does meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* =$ **0.8 %**
$P_{FSI} =$ **7853** (kPaa)

√ This DST **does meet** this requirement.

4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

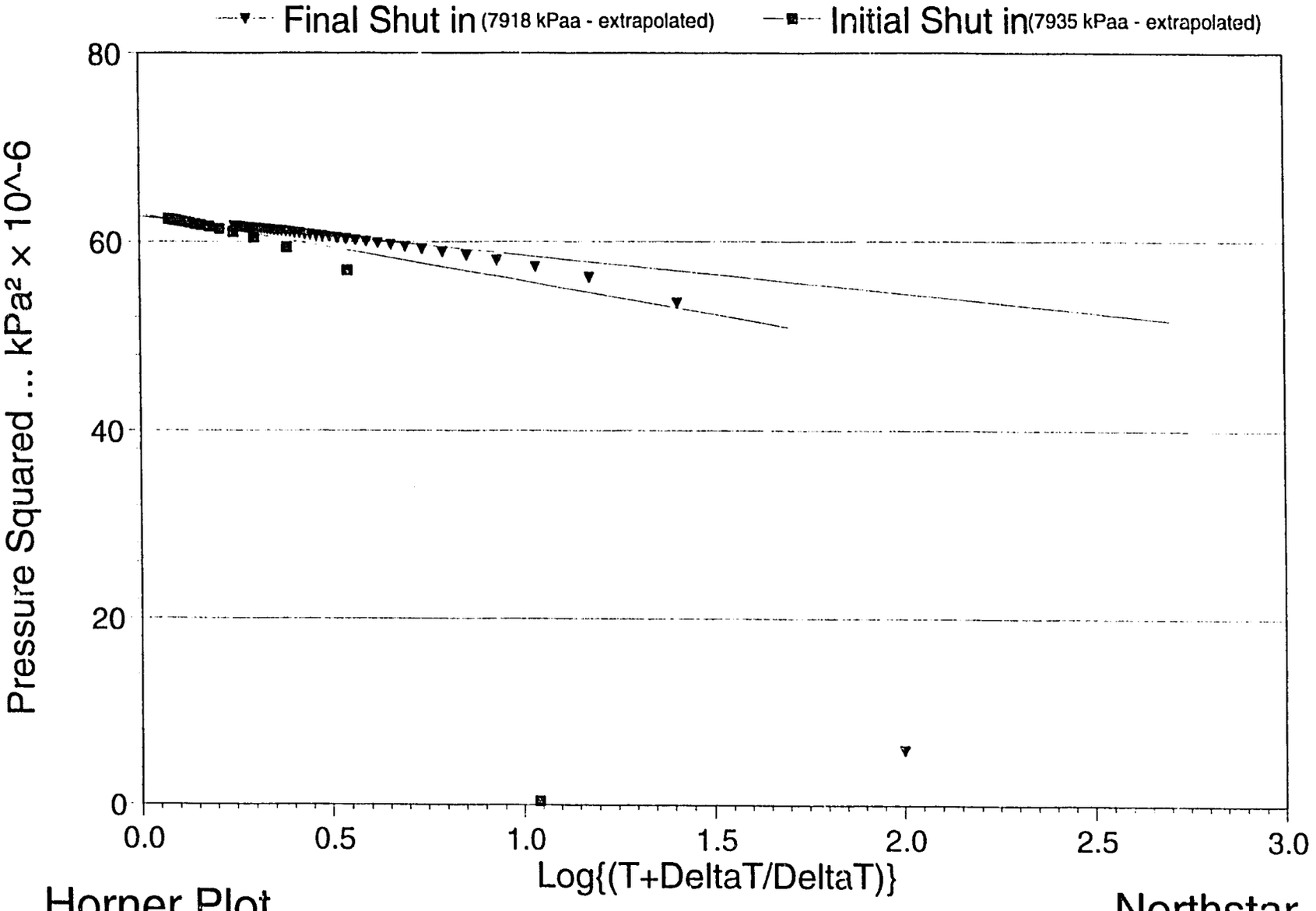
In addition to meeting the initial pressure requirements, this DST may be an acceptable data point for your annual pressure survey of this pool.

The PAS file for this well has been submitted as an Initial Pressure Survey.

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

Recorder No: 20494 Depth: 715.85 Date: 03/03/17



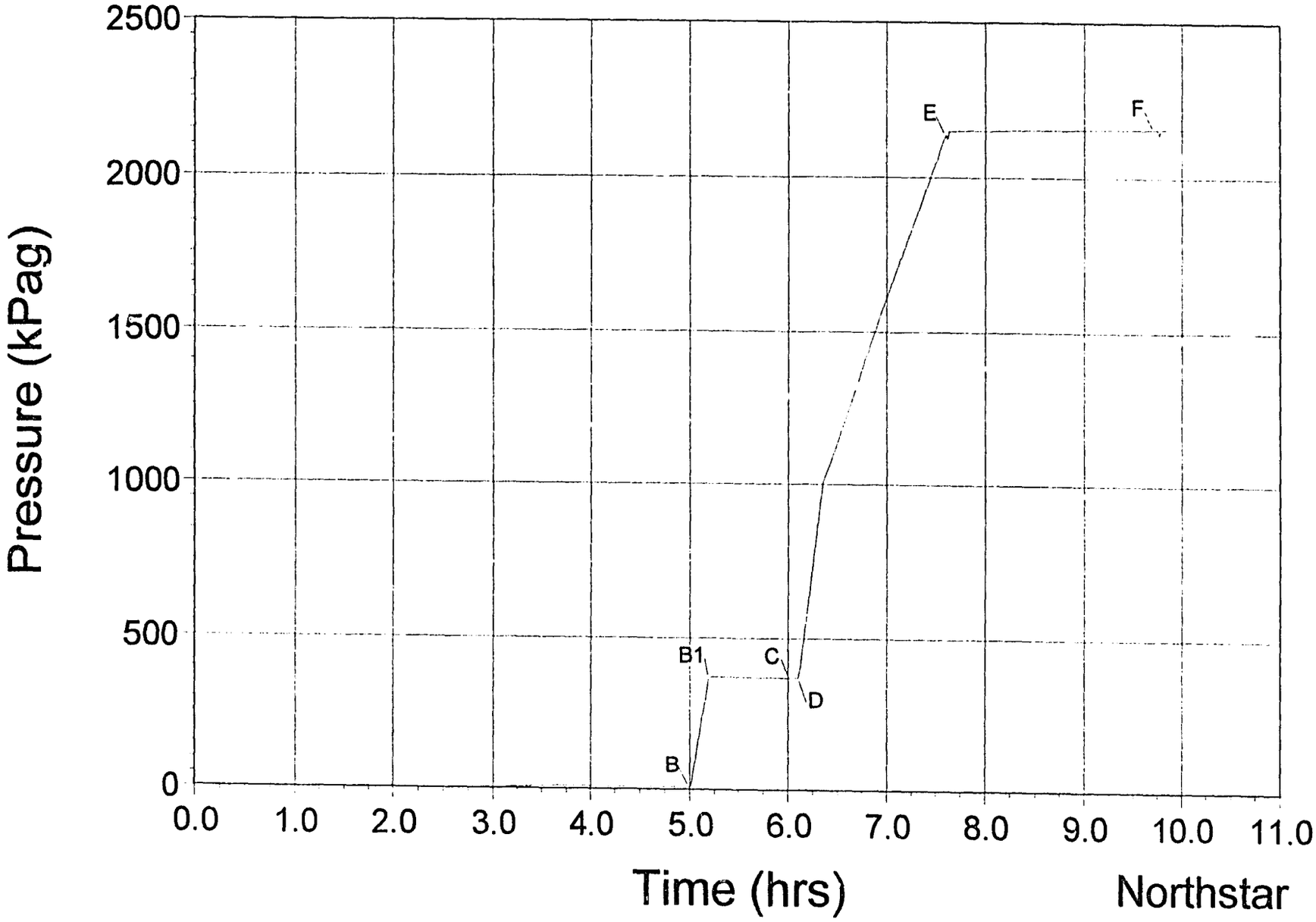
Horner Plot

Northstar

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

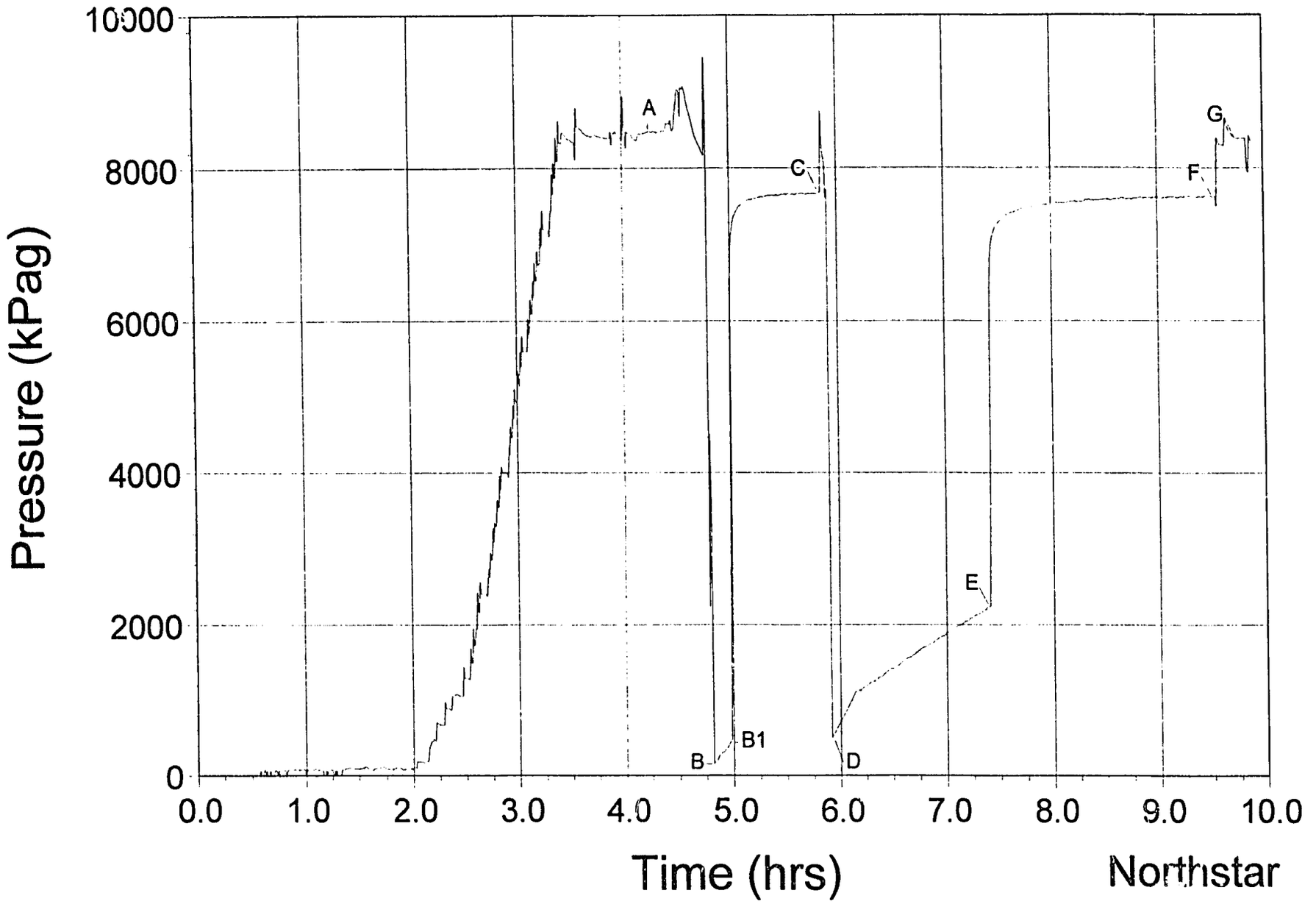
Recorder No: 20844 Depth: 695.49 Date: 03/03/17



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

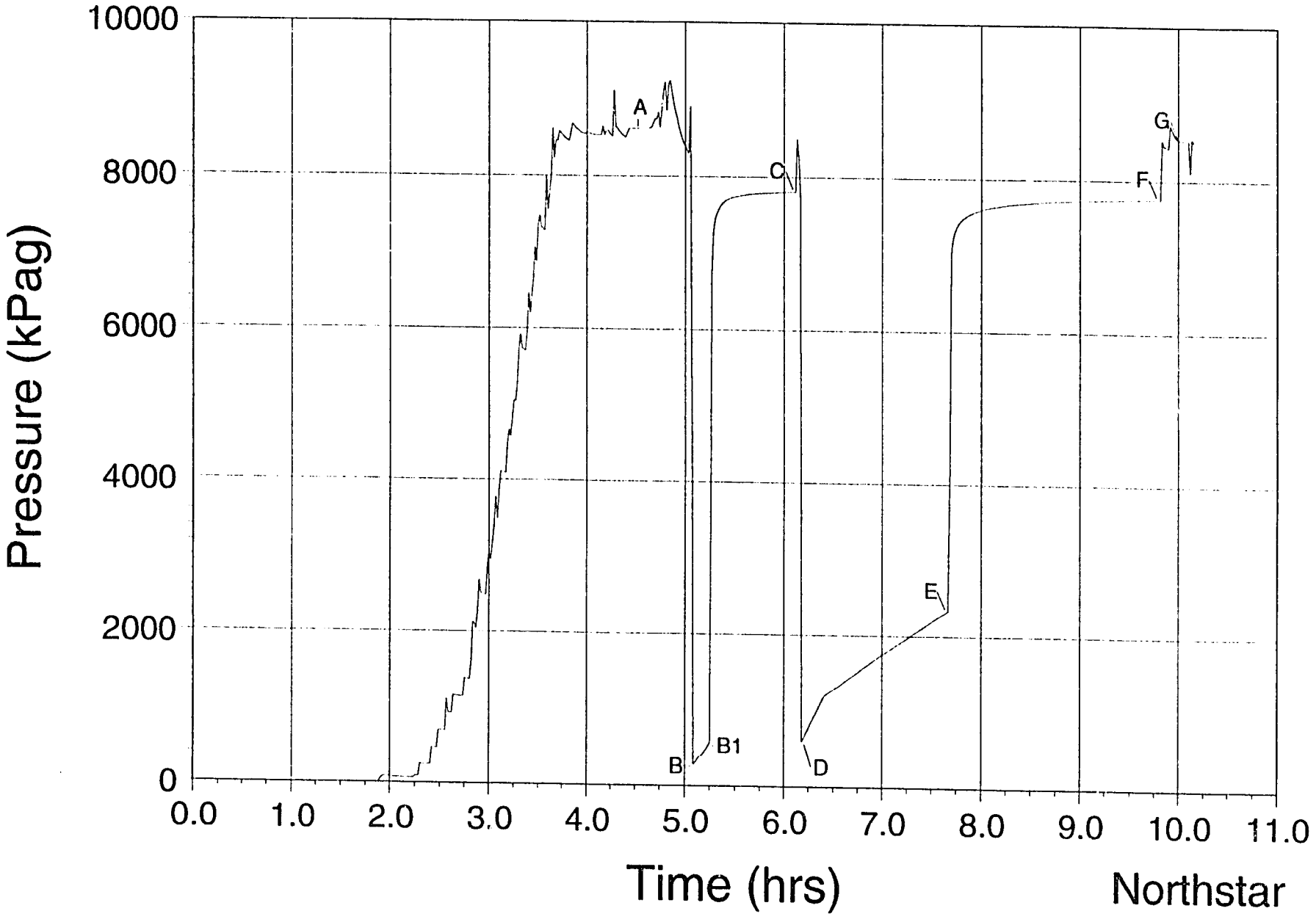
Recorder No: 022 Depth: 704.81 Date: 03/03/17



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

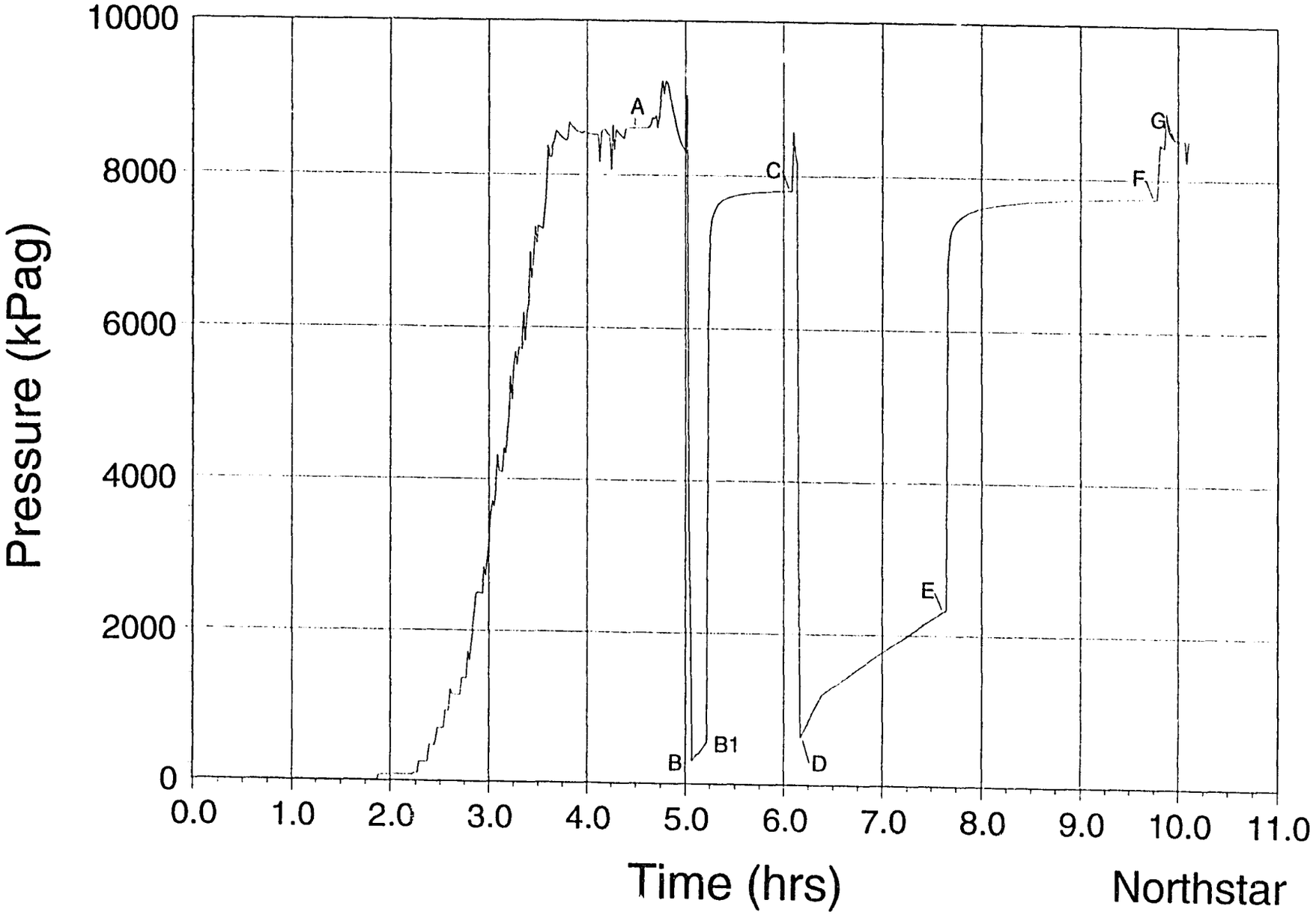
Recorder No:20494 Depth: 715.85 Date: 03/03/17



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 1 Interval: 714.7 to 729.7

Recorder No: 20655 Depth: 715.85 Date: 03/03/17



Northstar

Northstar Drillstem Testers Inc.
ISO 9001-Quality Certified Company

1422, 510 – 5 Street S.W.
Calgary, Alberta T2P 3S2
Tel: 403.265.8987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	Paramount Resources ltd	Date	March 17/03
Well Name	Paramount et al Mackay Lakes	Formation	
Well Location	K-36-60-20-12W5-15	Type of test	Inflate Straddle
License No.	1966	Kelly Bushing	294.73 Gr. Elevation 290.3
DST No.	ONE	Interval 714.69 – 729.70	Total Depth 800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: Very weak to light Blow to Pail, No Gas to Surface

Secondflow: Very weak to Light Blow to Pail, open to (3/4) 19.05 choke Blow very weak but Steady, Blow droped off no Blow to Pail

Comments: Had Safty Hand Take Gas Readings, No Gas Indecaded, Nothing Expected

PRESSURE DATA

Recorder#	20494	Depth	715.85
A. Init.Hyd.	9620	kPa	
B. First Flow	290	kPa	
B1. Final Flow	560	kPa	
C. Init.Shut In	7810	kPa	
D. Init.Flow	640	kPa	
E. Final Flow	2330	kPa	
F. Final Shut In	7760	kPa	
G. Final Hyd.	9540	kPa	

FLUID RECOVERY

Oil		m	°API
Water	161	m	
Mud		m	
		m	
		m	
Total Fluid	161	m	
Samples sent to:	AGAT		
BHS#	203		
Fluid Samples	#4	Gas Samples	—

GAS RECOVERY

Measured with Choke manifold

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time	
Arrive on Location	03/03/17	14:30	hr
Start Pick up Tools	"	17:30	hr
Start Recorder	"	17:55	hr
Recover Recorder			hr
Finish Lay Down Tools	March 18	04:30	hr
Released			hr

Weight Set on Packer	12,000	daN
Weight Pulled Loose	40,000	daN
Initial String Weight	21,000	daN
Unseated String Weight	21,000	daN

MUD DATA

Mud Type	Gel Chem	
Weight	1180	kg/m³
Viscosity	80	s/L
Mud Drop		m
Amount of Fill		m
Bottom Hole Temp.		°C
Preflow	10	min
Initial	55	min
Second Flow	90	min
Final Shut In	128	min

PIPE DATA

	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	143	63.5	83.23
Drill Pipe	114.3	24.7	97.2	606.44
Water Cushion		Stands		

Time begin	Time End
23:17	23:27
23:27	00:22
00:22	01:52
01:52	04:01

INFLATE - TALLY SHEET

Northstar *Drillstem Testers Inc.*

1270, 540 - 5 Avenue S.W.
Calgary, Alberta T2P 0M2

1-800-567-8420 (24 Hrs.)
Tel (403) 265-6967 (24 Hrs.)
Fax (403) 265-6776

Company: Paramount Resources LTD

Well Name: Paramount ET AL Mackay Lakes

Well Number: K-36 - 60 - 20 - 123 - 15

DST NO. ONE **Interval** 714.69 - 729.70

Customer Representative:

Tester: Ed Flood / T Blondin

1	1850	11	1886	21	1900	31	1879	41	
2	1923	12	1904	22	1902	32	1870	42	
3	1886	13	1881	23	1862	33		43	
4	1903	14	1885	24	1926	34	SV. 46	44	
5	1858	15	1895	25	1900	35		45	
6	1896	16	1894	26	1925	36		46	
7	1926	17	1903	27	1922	37		47	
8	1901	18	1924	28	1892	38		48	
9	1896	19	1872	29	1864	39		49	
10	1900	20	1902	30	1921	40		50	
A	18939	B	18946	C	19014	D	37.95	E	

51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

Drill Pipe		Drill Collars		Pipe Out	
A	18939	1	18.88		
B	18946	2	1823		
C	19014	3	1847		
D	37.95	4	1896		
E		5	1869		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	606.94	DC	93.23		

D.P	606.94
D.C	93.23
X = Total Pipe	700.17
Y = Tool Above Interval	20.40
X + Y	720.57
Z = Top of Interval	714.69
Stick Up = X + Y - Z	5.88

Stick Up	[5.88]		
KB			
Drill Pipe Tally	606.94		
Drill Collar Tally	93.23		
Stabbing Valve			
XO Sub	.3		
Reversing Sub	.3		
Choke Sub			
P/o	.3		
Upper Hanger	.3	[redacted]	Recorder # 20844
Bomb Well	1.22	69519	
Hydraulic Tool	1.62		
Sampler	1.12		
Sampler			
~~Sub~~ Sqz	1.00	704.97	
Upper Hanger	4.36	[redacted] 700.95	(RT) Recorder # 22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N R459
Safety Joint	.73		
Inflate Pump	.99		S/N #49
Screen	1.32		
Release System	1.12		S/N 1017-10
Top Packer	1.78	714.69	**Top of Interval**
			Element # 67049
Perforations	.86		
Upper Hanger	.3	715.85	Recorder # 20994
Lower Hanger	1.56		Recorder # 20655
XO Sub	.3		
Collars	9.95		
Spacing	1.82		
XO Sub	.3		
Packer Stub	.42	729.70	**Bottom of Interval**
Bottom Packer	1.56		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	733.71	**Bottom Tools**

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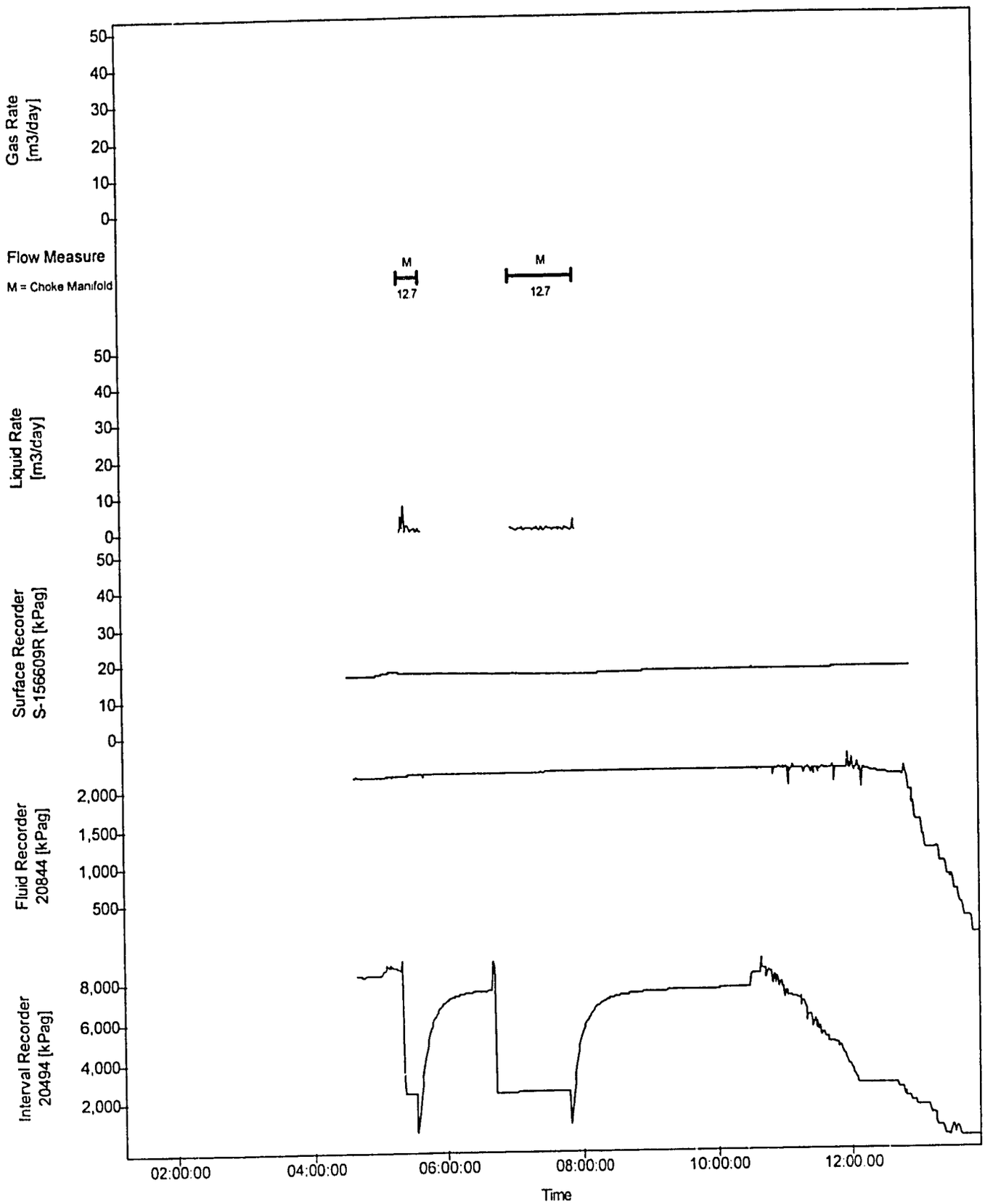
Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 2

N.E.B. COPY

Interval: 696.00 to 711.01 m

Test Date: 2003/03/18



Version 0.9.8

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ISO 9001-1994 Quality Certified Company

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Calgary, Alberta T2P 3S2

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F 403.265.6776
ndst@northstardst.com
www.northstardst.com

Paramount et al Mackay Lakes K-36 60-20-120-15

DST 2 Interval: 696.0 to 711.0

DATE	03/03/18		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA

(all measurements in SI units - pressure kPag, depth m)

Preflow	10 min
Initial Shut In	66 min
Second Flow	66 min
Final Shut In	162 min

A. Hydrostatic		8490	8640	8630
B. First Flow	2190	2300	2430	2420
B1. Final Flow	2200	2300	2430	2340
C. Initial Shut In	2200	7330	7490	7480
D. Initial Flow	2200	2310	2440	2430
E. Final Flow	2220	2340	2450	2450
F. Final Shut In	2230	7370	7520	7520
G. Hydrostatic		8060	8200	8200
Recorder No.	20844	022	20494	20655
Range	41369	34474	41369	41369
Depth	676.80	686.12	697.16	697.16
	Recovery	Inside	Interval	Interval

RECOVERY

	Total m	In Collars m	In Pipe m	Volume m³
	161.0	93	68	0.80
Muddy Water	161			

REMARKS AND BLOW DESCRIPTION

Preflow: No blow to pail on opening.
No gas to surface.

Second Flow: No blow to pail on opening.
No gas to surface.

Comments: Recoveries for DST #1 & #2.
Fresh water recovered.

INFLATE STRADDLE RESET

Stick Up		-5.87
Drill Pipe Tally		588.24
*Drill Collar Tally		93.23
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	676.80	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	686.12	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**696.00**	
Perforations		0.86
Upper Hanger	697.16	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Collars		9.45
Spacing		1.82
Cross Over Sub		0.30
Stub		0.42
BOTTOM INTERVAL	**711.01**	
Bottom Packer		1.86
Belly Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**715.02**	

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 2

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:30
Start Recorder	17:55
Recover Recorder	14:00
Finish Lay Down Tools	14:30
Released	
Weight Set On Packer	12000
Weight Pulled Loose	38000
Initial String Weight	21000
Unseated String Weight	22000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.23
Drill Pipe Length	588.24

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

Prepared by: Jacqui Dayton

Reviewed by: David Caldwell

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 2**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* = \mathbf{1.9\ \%}$
$P_1 = \mathbf{7917}$ (kPaa)
$P_2 = \mathbf{7773}$ (kPaa)

× This DST **does not meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* = \mathbf{2.0\ \%}$
$P_{FSI} = \mathbf{7616}$ (kPaa)

√ This DST **does meet** this requirement.

4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

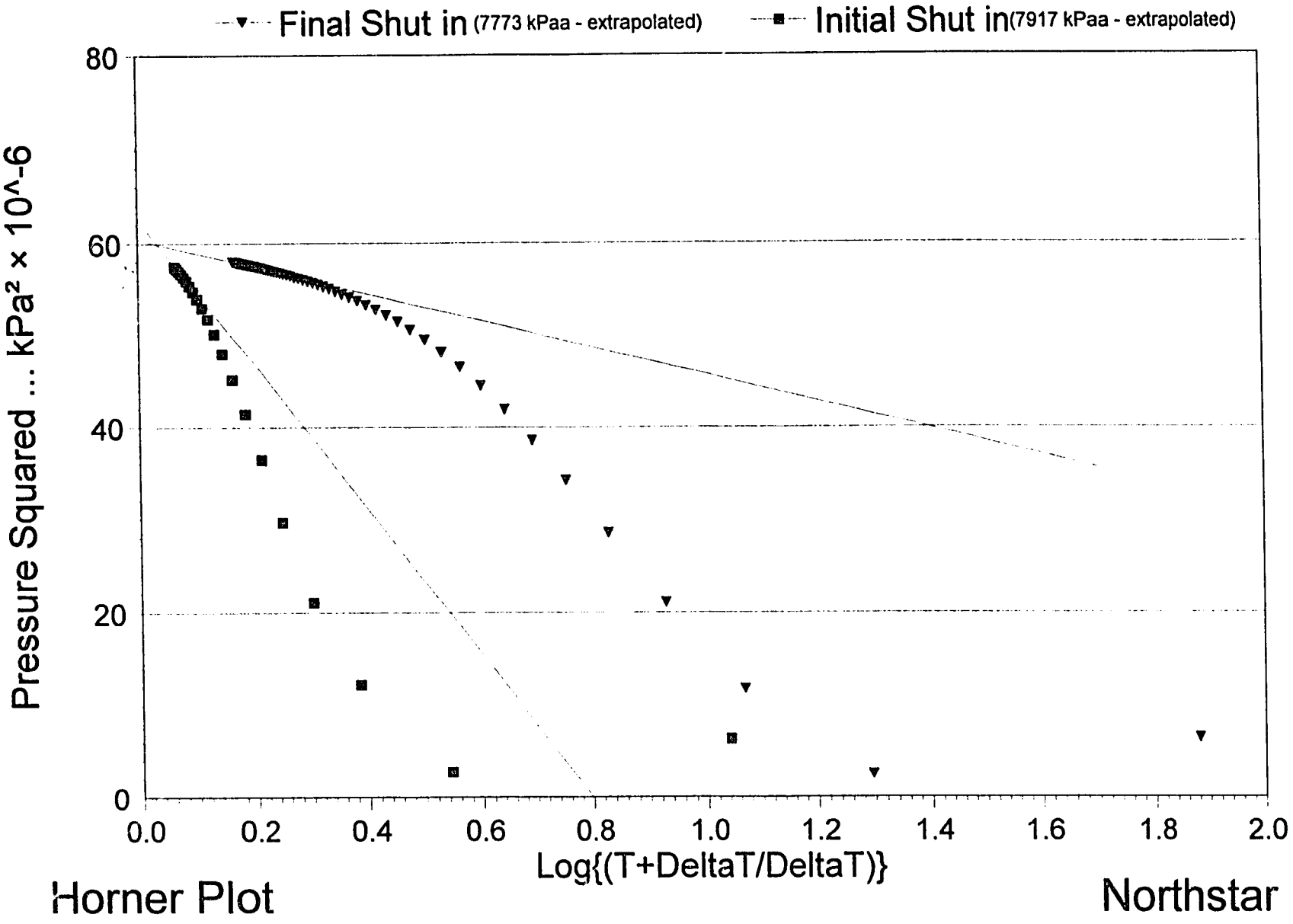
This test does not meet all the initial pressure requirements but still may be acceptable by the AEUB. They will flag it for possible follow-up.

The PAS file for this well has been submitted as an Initial Pressure Survey.

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

Recorder No: 20494 Depth: 697.16 Date: 03/03/18



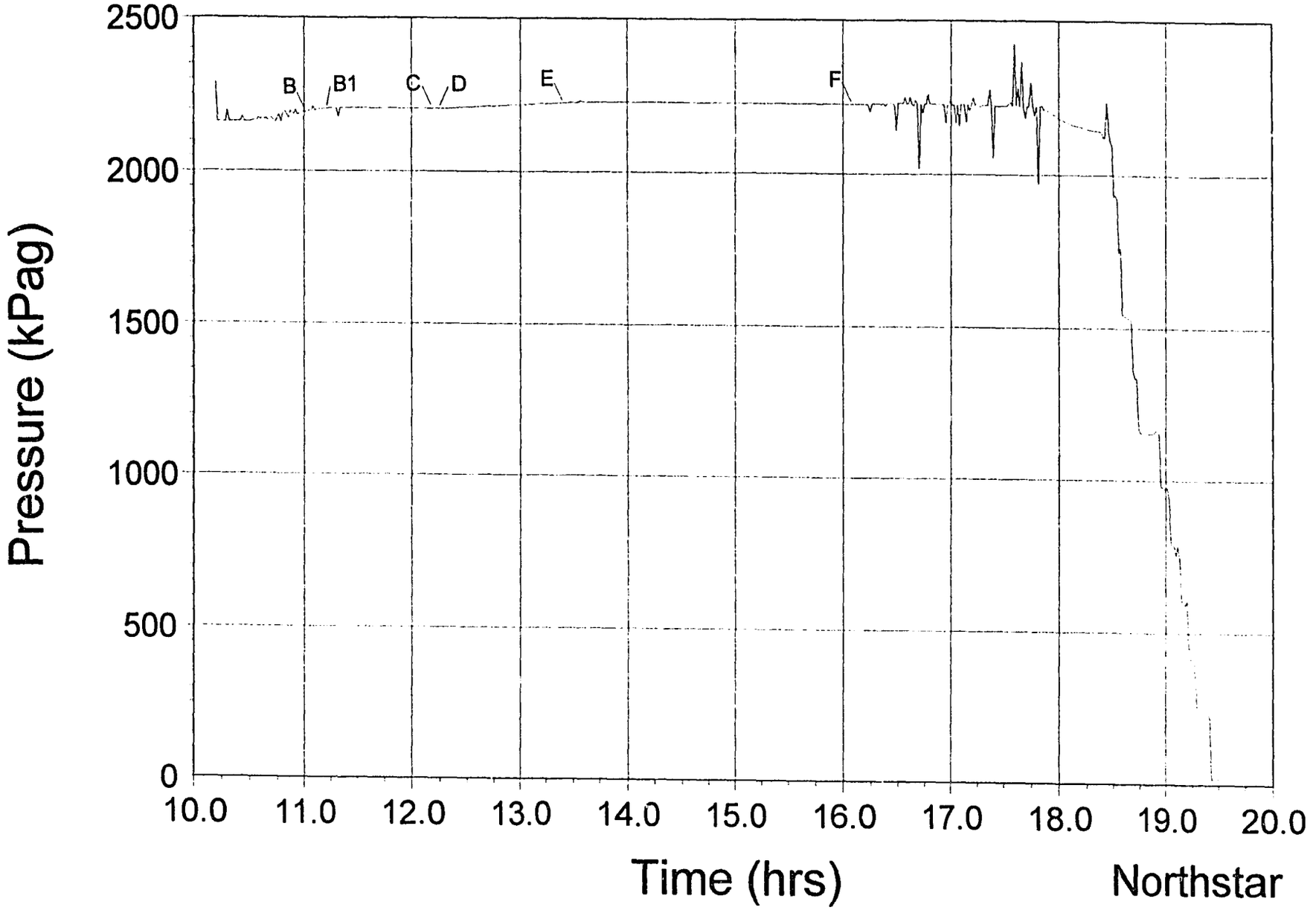
Horner Plot

Northstar

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

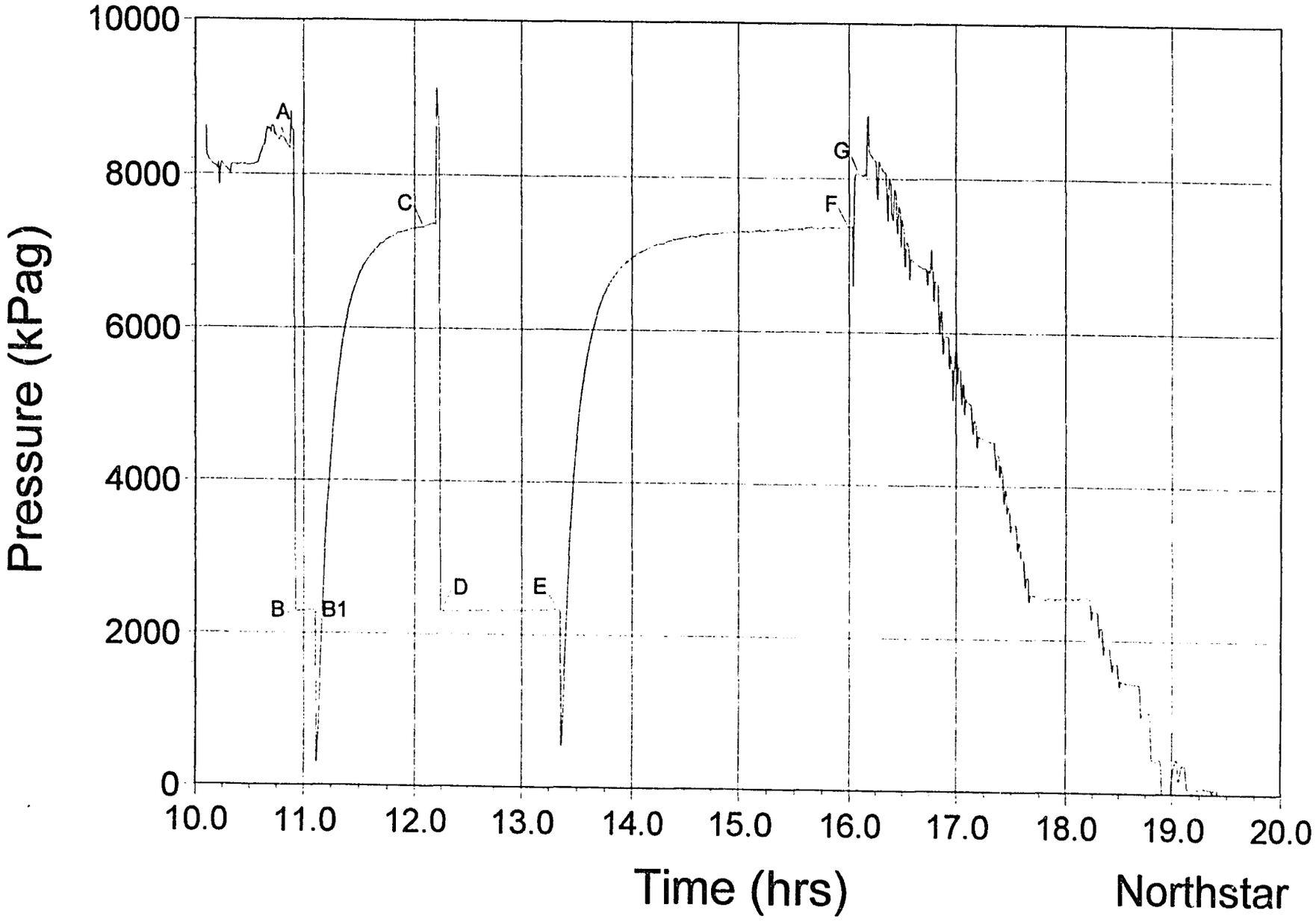
Recorder No: 20844 Depth: 676.80 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

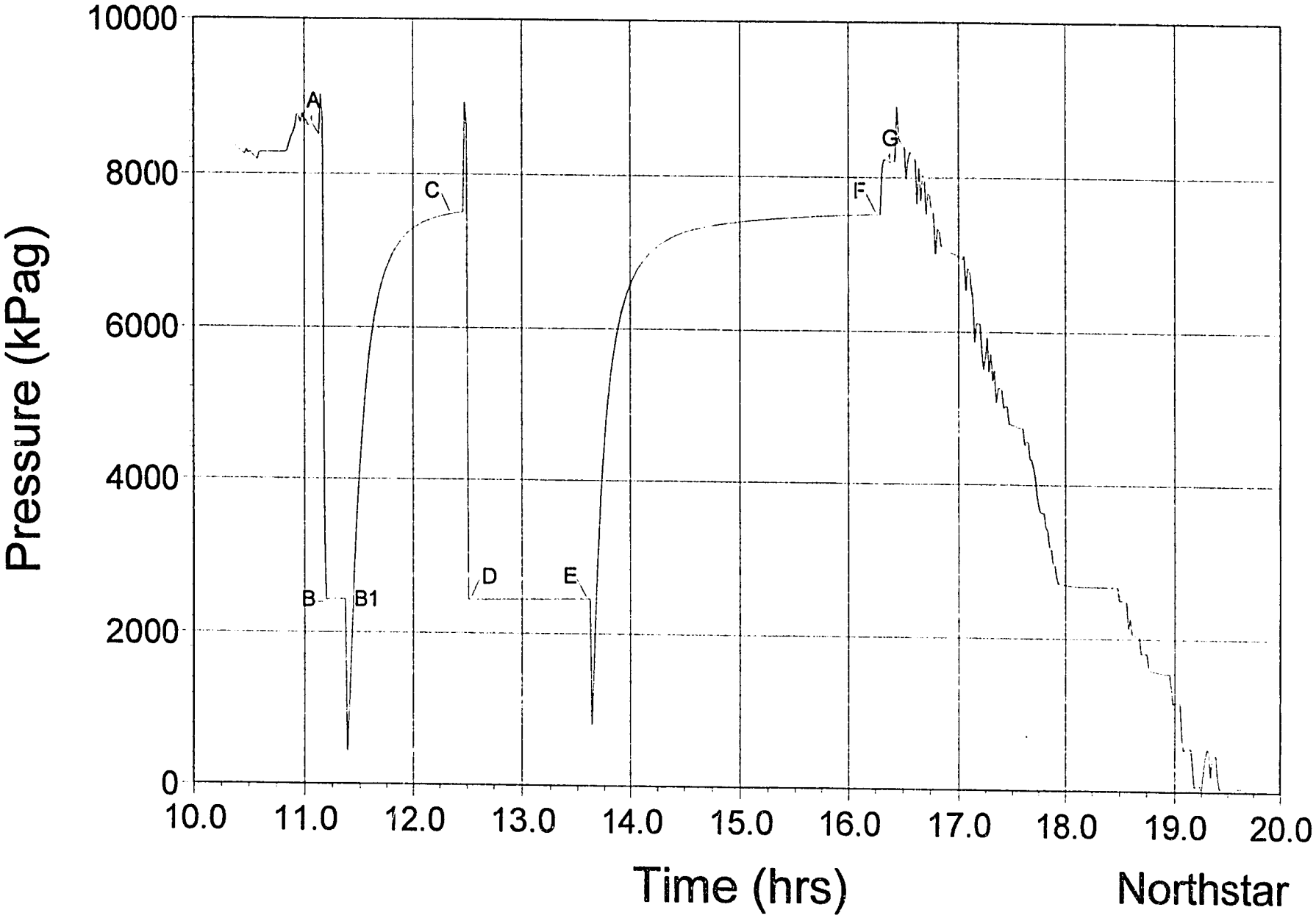
Recorder No: 022 Depth: 686.12 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

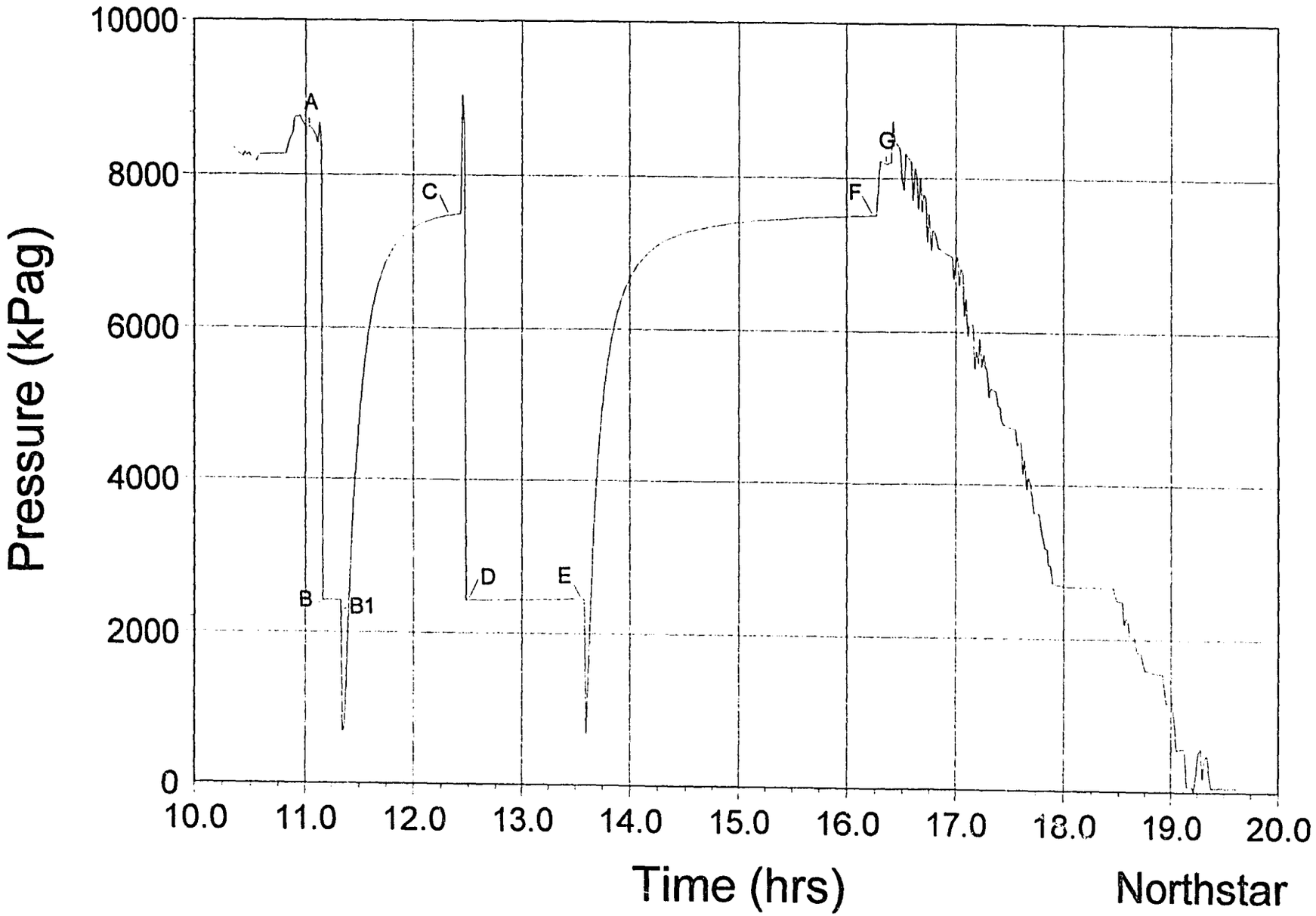
Recorder No: 20494 Depth: 697.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 2 Interval: 696.0 to 711.0

Recorder No: 20655 Depth: 697.16 Date: 03/03/18



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ISO 9001-Quality Certified Company

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Calgary, Alberta T2P 3S2
Tel: 403.265.8987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	Paramount Resources Ltd	Date	March 18
Well Name	Paramount et Al Mackay Lakes	Formation	
Well Location	K-36-60-20-123-15	Type of test	Inflate Straddle
License No.	1966	Kelly Bushing 294.73	Gr. Elevation 290.3
DST No.	~~Four~~ ~~DST~~ Two	Interval 696-711	Total Depth 800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: No Blow to Pail on opening, No Gas to Surface.

Secondflow: No Blow to Pail on opening, No Gas To Surface.

Comments: FRESH WATER RECOVERED

PRESSURE DATA

Recorder#	20494	Depth	697.16
A. Init.Hyd.	8280	kPa	
B. First Flow	2430	kPa	
B1. Final Flow	2430	kPa	
C. Init.Shut In	7510	kPa	
D. Init.Flow	2440	kPa	
E. Final Flow	2450	kPa	
F. Final Shut In	7520	kPa	
G. Final Hyd.	8200	kPa	

FLUID RECOVERY

Oil		m	°API
Water	161.0	m	
Mud		m	
		m	
		m	
Total Fluid	161.	m	
Samples sent to:	AGAT		
BHS#	203		
Fluid Samples	4	Gas Samples	—

GAS RECOVERY

Measured with Choke manifold

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time	
Arrive on Location	03/03/17	14:30	hr
Start Pick up Tools	"	17:30	hr
Start Recorder	"	17:55	hr
Recover Recorder	03/03/18	14:00	hr
Finish Lay Down Tools		14:30	hr
Released			hr
Weight Set on Packer	12,000	daN	
Weight Pulled Loose	38,000	daN	
Initial String Weight	21,000	daN	
Unseated String Weight	22,000	daN	

MUD DATA

Mud Type	~~Polymer~~ Gelchem		
Weight	1180	kg/m³	
Viscosity	80	s/L	
Mud Drop		m	
Amount of Fill		m	
Bottom Hole Temp.	35	°C	
Preflow	10	min	
Initial	60	min	
Second Flow	~~60~~ 60	min	
Final Shut In	~~120~~ 162	min	

PIPE DATA

	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	141	63.5	93.23
Drill Pipe	114.3	24.7	97.2	~~588.24~~
Water Cushion		Stands		

Time begin	Time End
05:24	05:34
05:34	06:42
06:42	07:48
07:48	10:30

INFLATE - TALLY SHEET

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www.northstardst.com

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T 403.265.8987 (24 HRS)
F 403.265.6776

Company: Paramount Resources LtD

Well Name: Paramount ETAL Mackay Lakes

Well Number: K36 60-20-125-15

DST NO. ~~Two~~ **Interval** 696 - 711

Customer Representative:

Tester: E. Flood / T. Blondin



1	1850	11	1886	21	1900	31	1879	41	
2	1923	12	1904	22	1902	32		42	
3	1886	13	1881	23	1862	33	SV. 46	43	
4	1903	14	1885	24	1926	34		44	
5	1858	15	1895	25	1900	35		45	
6	1896	16	1894	26	1928	36		46	
7	1936	17	1903	27	1922	37		47	
8	1901	18	1924	28	1892	38		48	
9	1896	19	1872	29	1869	39		49	
10	1906	20	1902	30	1921	40		50	
A	18939	B	18446	C	19014	D	19.25	E	

51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

Drill Pipe		Drill Collars		Pipe Out	
A	18939	1	1888		
B	18946	2	1823		
C	19014	3	1847		
D	19.25	4	1896		
E		5	1869		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	58824	DC	9323		

D.P	588.24
D.C	93.23
X = Total Pipe	681.47
Y = Tool Above Interval	20.40
X + Y	701.87
Z = Top of Interval	696
Stick Up = X + Y - Z	-5.87

Stick Up	[-5.87]		
KB			
Drill Pipe Tally	588.24		
Drill Collar Tally	93.23		
Stabbing Valve			
XO Sub	.3		
Reversing Sub	.3		
Choke Sub			
P/O	.3		
Upper Hanger	.3	676.80	Recorder # 20844
Bomb Well	1.22		
Hydraulic Tool	1.62		
Sampler			
Sampler	1.12		
~~Sub~~ Squ	1.00	68612	RT
Upper Hanger	4.36	~~681.76~~	Recorder # 22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N B459
Safety Joint	.73		
Inflate Pump	99		S/N 49
Screen	1.32		
Release System	1.12		S/N 1017-10
Top Packer	1.78	696.00	**Top of Interval**
			Element # 67049
Perforations	.86		
Upper Hanger	.30	697.16	Recorder # 20494
Lower Hanger	1.56		Recorder # 20655
XO Sub			
Collar Spacing	9.45		
	1.82		
XO Sub	.30		
Packer Stub	.42	711.01	**Bottom of interval**
Bottom Packer	1.86		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	715.02	**Bottom Tools**

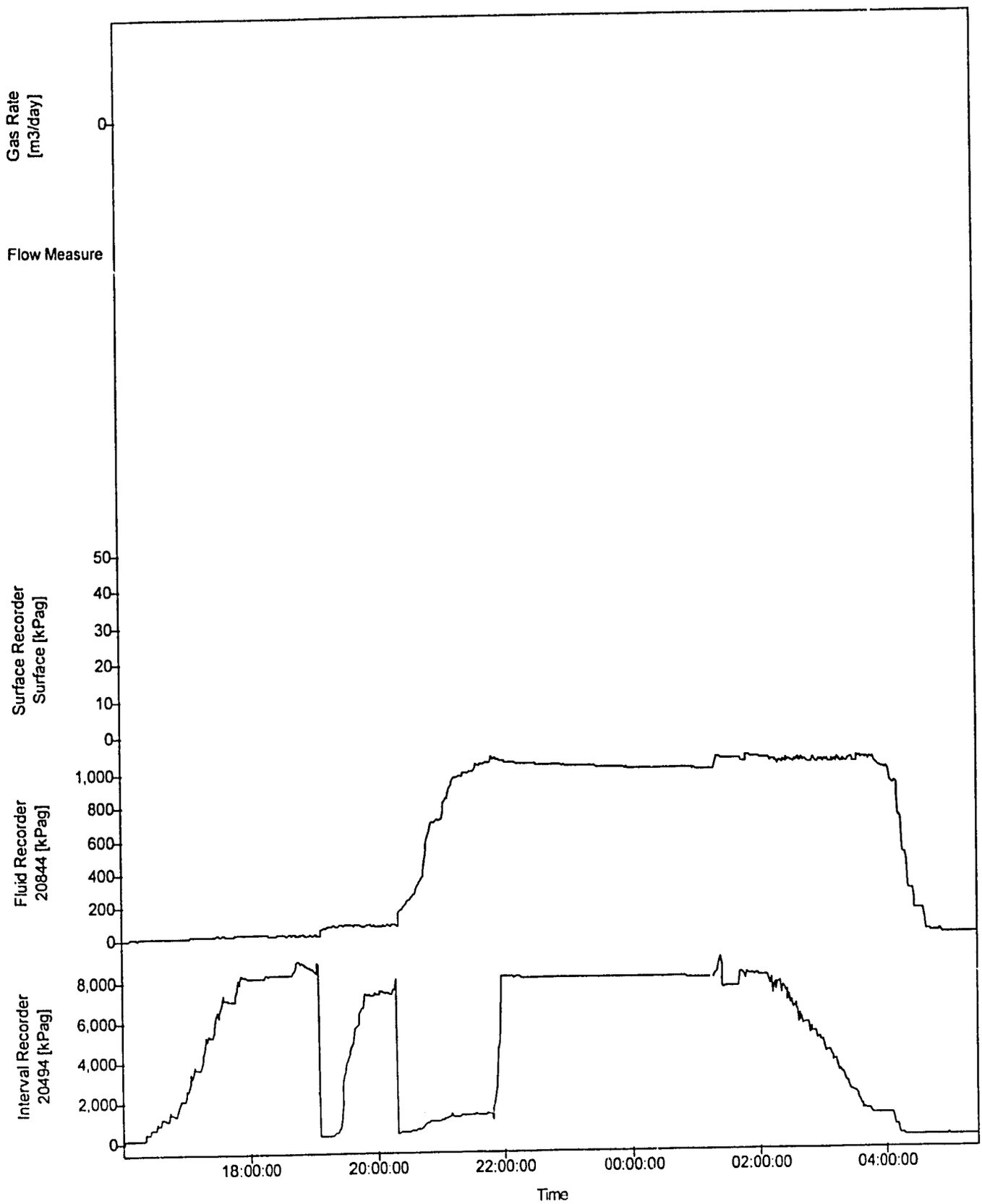
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Lowest "Misruns" in the Industry!

Paramount et al Mackay Lakes K-36 60-20-120-15 Flow Report

DST 3 N.E.B. COPY Interval: 684.00 to 711.09 m

Test Date:



Version 0.9.8

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ndst@northstardst.com
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Paramount et al Mackay Lakes K-36 60-20-120-15

DST 3 Interval: 684.0 to 711.1

DATE	03/03/18		
FORMATION		KELLY BUSHING	294.73 m
TOTAL DEPTH	800.00 m	GR. ELEVATION	290.30 m

RECORDER DATA

(all measurements in SI units - pressure kPag, depth m)

Preflow	11	min
Initial Shut In	62	min
Second Flow	88	min
Final Shut In	120	min

A. Hydrostatic		8060	8270	8270
B. First Flow	20	120	300	310
B1. Final Flow	70	150	320	320
C. Initial Shut In	80	7120	7330	7330
D. Initial Flow	80	240	390	400
E. Final Flow	1050	1110	1300	1290
F. Final Shut In	1000	7890	8000	7990
G. Hydrostatic		7900	8100	8100
Recorder No.	20844	022	20494	20655
Range	41369	34474	41369	41369
Depth	664.80	674.12	685.16	685.16
	Recovery	Inside	Interval	Interval

RECOVERY

	Total	In Collars	In Pipe	Volume
	m	m	m	m^3
	85.0	85	0	0.27
Mud	85			

REMARKS AND BLOW DESCRIPTION

Preflow: Weak blow, 2 inches deep, diminishing to surface bubbles. No gas to surface.

Second Flow: Weak blow, 2 inches deep, diminishing to surface bubbles in 7minutes. No gas to surface.

INFLATE STRADDLE

Stick Up		-9.23
Drill Pipe Tally		579.11
*Drill Collar Tally		93.72
Cross Over Sub		0.30
Reversing Sub		0.30
Pump Out Sub		0.30
Upper Hanger	664.80	0.30
Recorder # 20844		
Bomb Well		1.22
Hydraulic Valve		1.62
Sampler		1.12
Squeeze Tool		1.00
Real Time Recorder	674.12	4.36
Recorder # 022		
Extension Joint		1.84
*Jars		2.10
Safety Joint		0.73
Pump		0.99
Screen		1.32
Release		1.12
Top Packer		1.78
TOP INTERVAL	**684.00**	
Perforations		0.86
Upper Hanger	685.16	0.30
Recorder # 20494		
Recorder # 20655		
Lower Hanger		1.56
Cross Over Sub		0.30
Cross Over Sub		0.30
Collars		18.79
Spacing		4.56
Stub		0.42
BOTTOM INTERVAL	**711.09**	
Bottom Packer		1.86
Belly Spring		1.55
Bull Nose		0.60
BOTTOM TOOLS	**715.10**	

Paramount et al Mackay Lakes K-36 60-20-120-15 DST # 3

HOLE AND TEST DESCRIPTION

Arrive on Location	14:30
Start Pick up Tools	17:00
Start Recorder	16:00
Recover Recorder	09:00
Finish Lay Down Tools	11:00
Released	
Weight Set On Packer	12000
Weight Pulled Loose	34000
Initial String Weight	21000
Unseated String Weight	25000
Bottom Choke	19.05
Hole Size	200
Drill Collar I.D.	63.50
Drill Pipe I.D.	97.20
Drill Collar Length	93.72
Drill Pipe Length	579.11

MUD DATA

Mud Type	Gel Chem
Weight	1180
Viscosity	80
Mud Drop	
Amount of Fill	

Prepared by: Jacqui Joyce

Reviewed by: David Caldwell

WELL NAME: **Paramount et al Mackay Lakes**

LOCATION: **K-36 60-20-120-15** **DST #: 3**

EUB Guide 40
Pressure and Deliverability Testing Oil and Gas Wells
Minimum Requirements and Recommended Practices

5.5.1 DSTs submitted as Initial Pressures

All of the following conditions should be met if a DST pressure is used to satisfy the initial pressure requirement:

- The test must be mechanically sound.

√ This DST **was mechanically sound** and meets this requirement.

- The extrapolated pressure (P*) from any two shut-in periods should be within one percent of each other, and clearly different from the hydrostatic pressure.

$100(P_2^*-P_1^*)/P_2^* = \mathbf{2.6}$ %
$P_1 = \mathbf{7813}$ (kPaa)
$P_2 = \mathbf{8023}$ (kPaa)

× This DST **does not meet** this requirement.

- The last measured pressure and the extrapolated pressure (P*) from the final shut-in period **must** be within five percent of each other (extrapolated > measured).

$100(P_2^*-P_{FSI}^*)/P_2^* = \mathbf{-0.8}$ %
$P_{FSI} = \mathbf{8089}$ (kPaa)

× This DST **does not meet** this requirement.

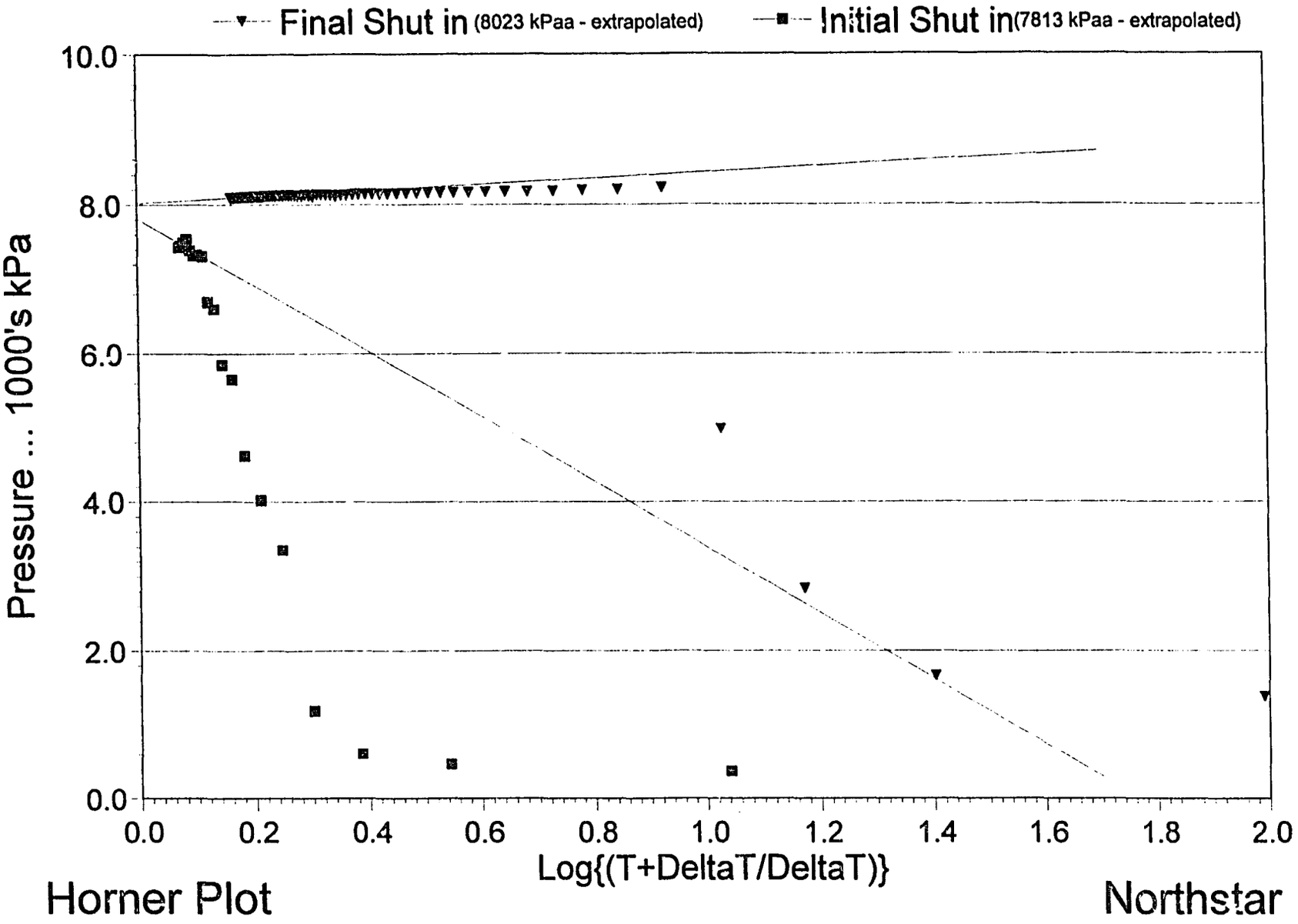
4.5 Annual Pool Pressure Surveys

Tests intended to fulfill survey requirements must meet the standards set for 'acceptable tests' as defined in section 5 above.

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

Recorder No: 20494 Depth: 685.16 Date: 03/03/18



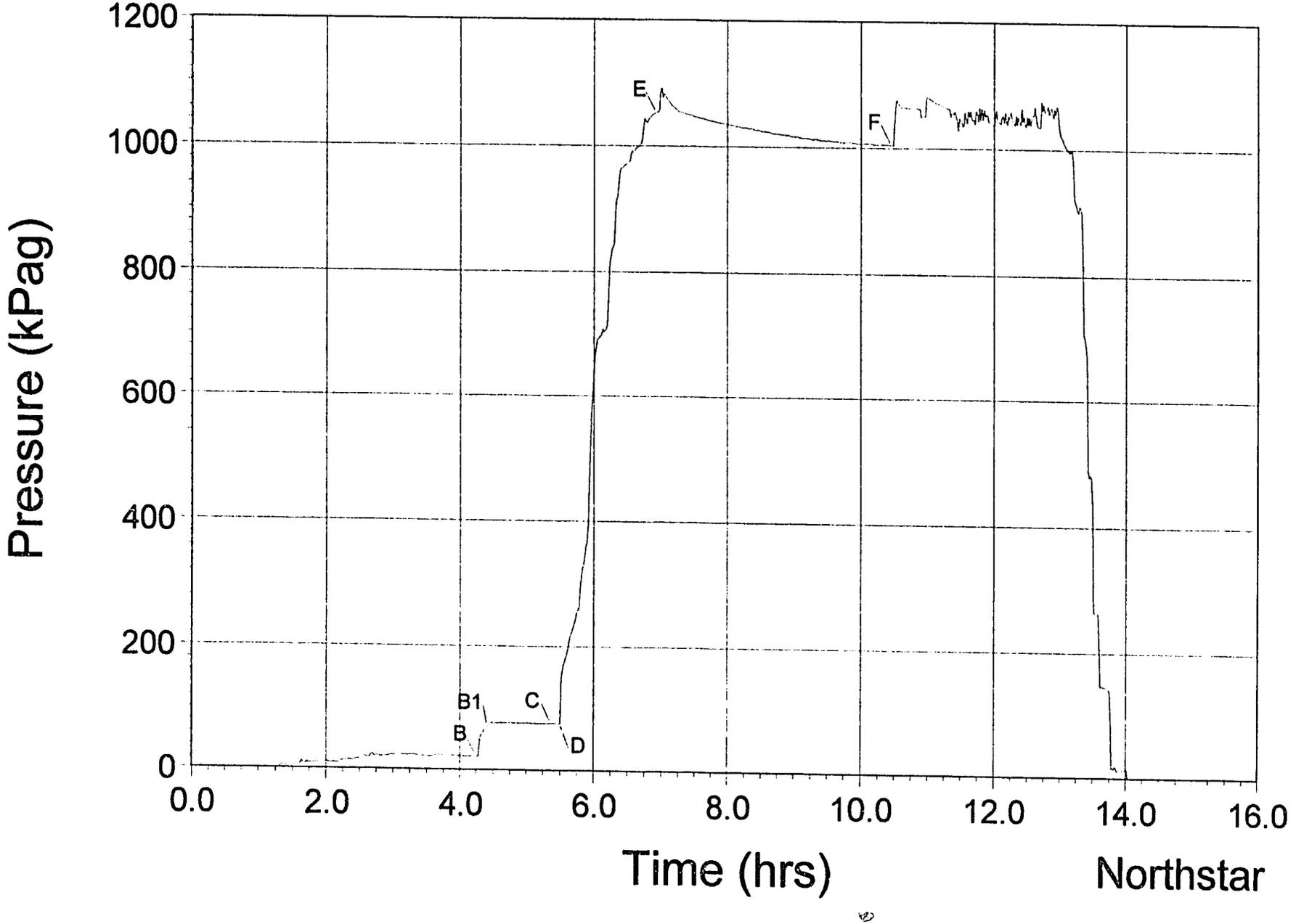
Horner Plot

Northstar

Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

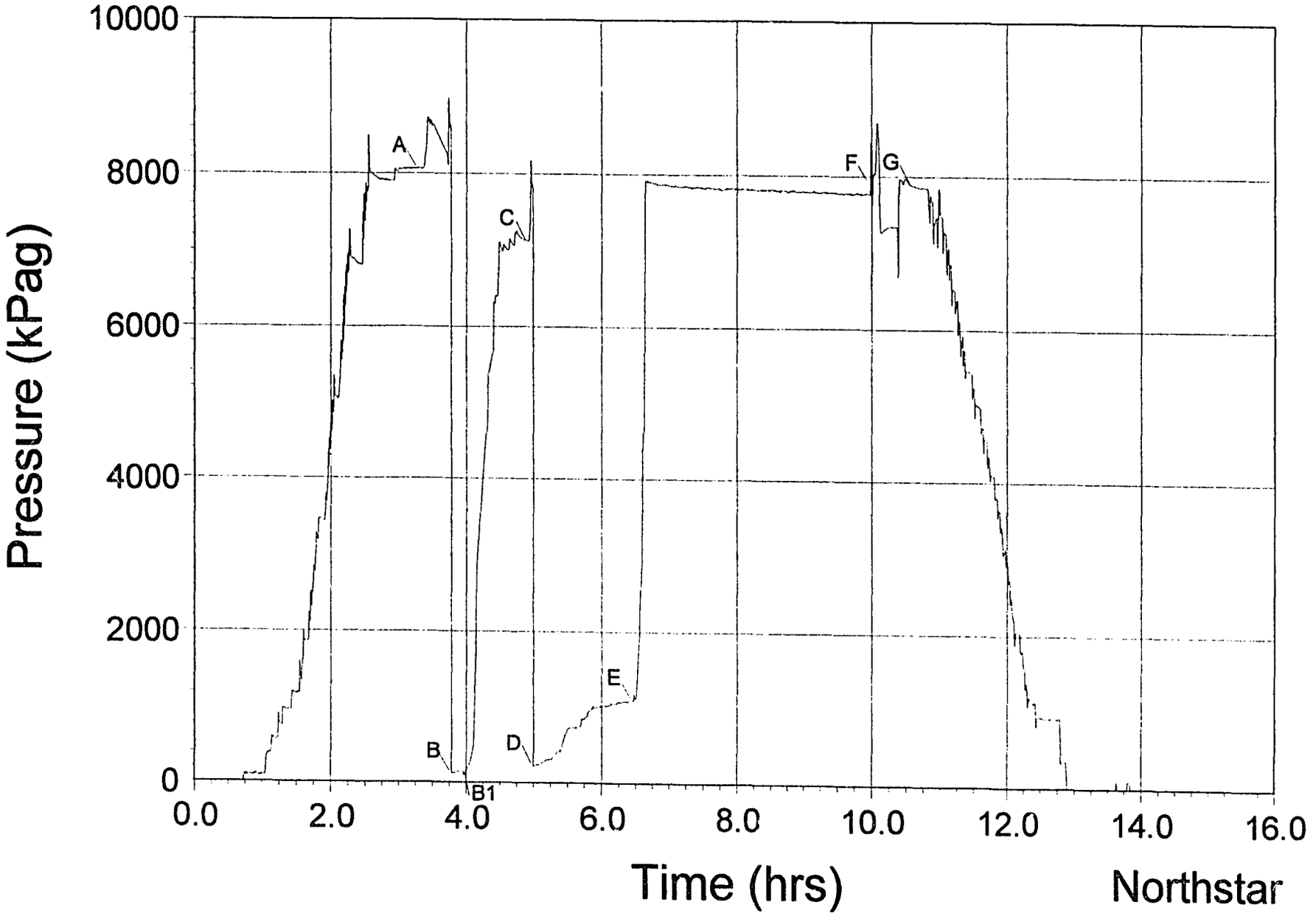
Recorder No: 20844 Depth: 664.80 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

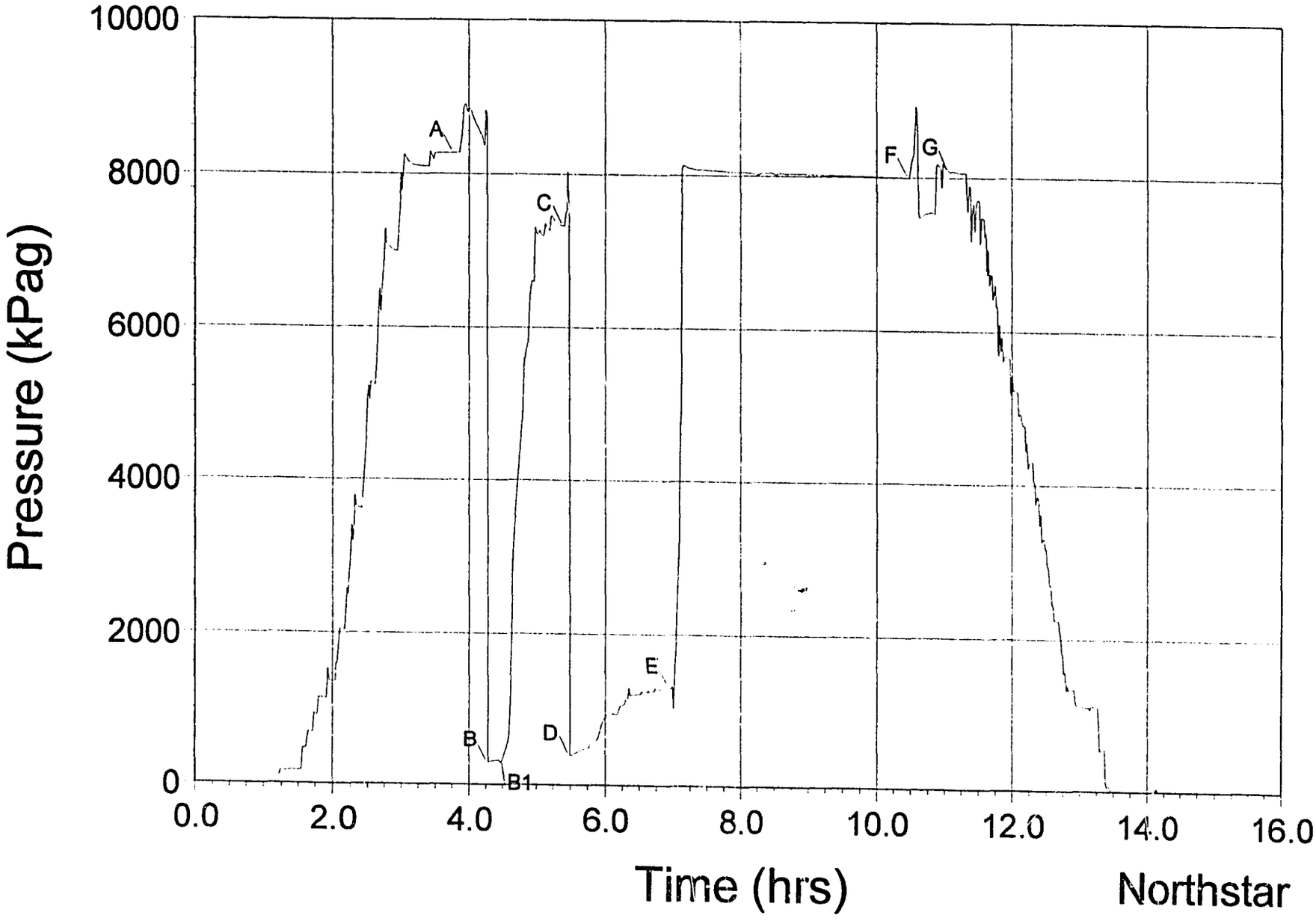
Recorder No: 022 Depth: 674.12 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

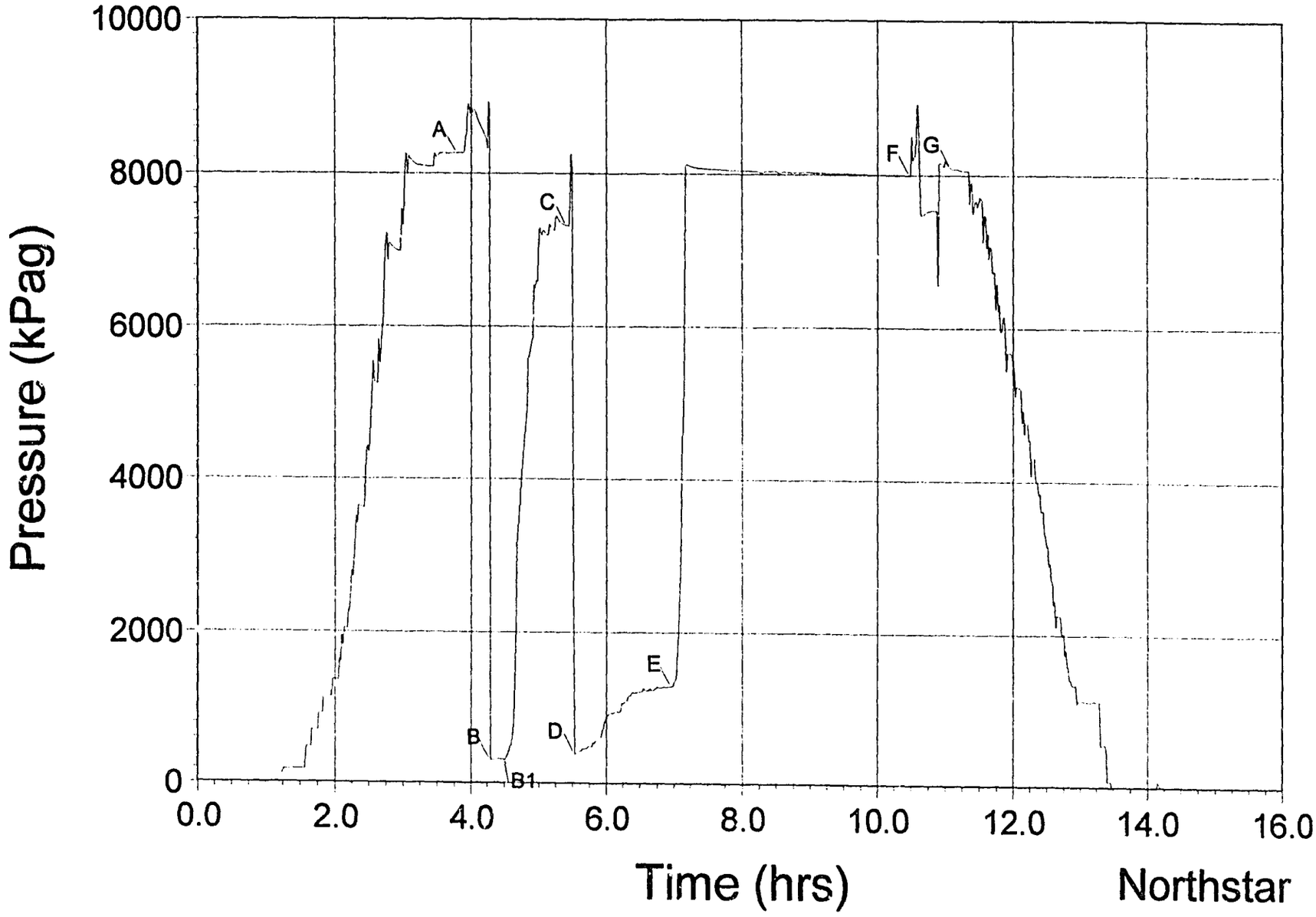
Recorder No: 20494 Depth: 685.16 Date: 03/03/18



Paramount et al Mackay Lakes K-36 60-20-120-15

DST No: 3 Interval: 684.0 to 711.1

Recorder No: 20655 Depth: 685.16 Date: 03/03/18



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Tel: 403.265.8987
Fax: 403.265.6776
24 HR 1-800-567-8420

Company	PARAMOUNT RESOURCES LTD	Date	03/03/18
Well Name	PARAMOUNT et al McKAY LAKES	Formation	
Well Location	K-36/60°20', 123°15'	Type of test	INFLATE STRADDLE
License No.	1966	Kelly Bushing	294.73 Gr. Elevation 290.3
DST No.	THREE Interval 684 - 711	Total Depth	800 Hole Size 200

REMARKS AND BLOW DESCRIPTION TEST: MISRUN ☐ SUCCESSFUL ☐

Preflow: WEAK BLOW → 2 INCHES DEEP DIMINISHING TO SURFACE BUBBLES → NO GAS TO SURFACE

Secondflow: WEAK BLOW 2 INCHES DEEP DIMINISHING TO SURFACE BUBBLES IN 7 MINUTES, NO GAS TO Surface

Comments:

PRESSURE DATA

Recorder#	20494	Depth	685.16
A. Init.Hyd.	8480	kPa	
B. First Flow	300	kPa	
B1. Final Flow	420	kPa	
C. Init.Shut In	7540	kPa	
D. Init.Flow	400	kPa	
E. Final Flow	1330	kPa	
F. Final Shut In	8000	kPa	
G. Final Hyd.	8060	kPa	

FLUID RECOVERY

Oil		m	°API
Water		m	
Mud	85	m	
		m	
		m	
Total Fluid	85	m	
Samples sent to:	AGAT		
BHS#	203		
Fluid Samples	3	Gas Samples	

GAS RECOVERY

Measured with

Time mins.	Orifice mm	Pressure kPa	Rate m³/d

TEST DESCRIPTION

	Date	Time	
Arrive on Location	03/03/17	14:30	hr
Start Pick up Tools	03/03/18	17:00	hr
Start Recorder	03/03/18	16:00	hr
Recover Recorder	03/03/19	09:00	hr
Finish Lay Down Tools	03/03/19	11:00	hr
Released			hr

Weight Set on Packer	12,000	daN
Weight Pulled Loose	34,000	daN
Initial String Weight	21,000	daN
Unseated String Weight	25,000	daN

MUD DATA

Mud Type	GEL CHEM	
Weight	1180	kg/m³
Viscosity	80	s/L
Mud Drop		m
Amount of Fill		m
Bottom Hole Temp.	31	°C
Preflow	11	min
Initial	62	min
Second Flow	88	min
Final Shut In	120	min

PIPE DATA

	O.D. mm	Mass kg/m	I.D. mm	Length m
Drill Collars	165.10	143	63.5	93.72
Drill Pipe	114.3	24.7	97.2	579.11
Water Cushion			Stands	

Time begin	Time End
22:21	22:32
22:32	23:34
23:34	01:02
01:02	03:02

INFLATE - TALLY SHEET

Northstar Drillstem Testers Inc.

1210, 540 - 5 Avenue S.W.
Calgary, Alberta T2P 0M2

1-800-567-8420 (24 Hrs.)
Tel (403) 265-8987 (24 Hrs.)
Fax (403) 265-6776

Company: PARAMOUNT RESOURCES LTD

Well Name: PARAMOUNT et al McKAY LAKES

Well Number: K-36/60° 20', 123° -15'

DST NO. THREE Interval 684 - 711

Customer Representative: BRIAN

Tester: T. BLONDIN / E. FLOOD RT

1	1849	11	1886	21	1900	31	~~1880~~	41	
2	1923	12	1905	22	1902	32	9.70	42	
3	1836	13	1880	23	1862	33	S/V 1.46	43	
4	1903	14	1885	24	1926	34		44	
5	1900	15	1894	25	1899	35		45	
6	1858	16	1894	26	~~1905~~	36		46	
7	1896	17	1903	27	1922	37		47	
8	1926	18	1923	28	1892	38		48	
9	1900	19	1872	29	1864	39		49	
10	1896	20	1902	30	1922	40		50	
A	~~190.37~~ 189.37	B	189.44	C	190.14	D	10.16	E	

51		61		71		81		91	
52		62		72		82		92	
53		63		73		83		93	
54		64		74		84		94	
55		65		75		85		95	
56		66		76		86		96	
57		67		77		87		97	
58		68		78		88		98	
59		69		79		89		99	
60		70		80		90		100	
F		G		H		I		J	

Drill Pipe		Drill Collars		Pipe Out	
A	189.37	1	194.81		
B	189.44	2	182.39		
C	190.14	3	189.63		
D	10.16	4	184.65		
E		5	186.71		
F		6			
G		7			
H		8			
I		9			
J		10			
DP	~~589.71~~ 589.11	DC	93.72		

D.P 589.11
D.C 93.72
X = Total Pipe 683.83
Y = Tool Above
Interval 20.40
X + Y 699.23
Z = Top of Interval 684.00
Stick Up = X + Y - Z 15.23

Stick Up	[-9.23]		
KB			
Drill Pipe Tally	5721.11		
Drill Collar Tally	93.72		
Stabbing Valve			
XO Sub	.30		
Reversing Sub	.30		
Choke Sub			
PIOSUB	.30		
Upper Hanger	.30	664.80	Recorder # 20844
Bomb Well	1.22		
Hydraulic Tool	1.42		
Sampler	1.12	# 203	
Samoler			
Stub SQ2	1.00		
Upper Hanger	4.36	674.12	Recorder # RT22
Bomb Well			
Upper hanger			Recorder #
Bomb Well			
Extension Joint	1.84		
Jars	2.10		S/N
Safety Joint	.73		
Inflate Pump	.99		S/N
Screen	1.32		
Release System	1.12		S/N
Top Packer	1.78	684.00	Top of Interval
			Element # 67049
Perforations	.86		
Upper Hanger	.30		Recorder # 20494
Lower Hanger	1.56		Recorder # 20655
XO Sub	.30		
COLLARS	18.79		
SPACING	4.56		
XO Sub	.30		
Packer Stub	.42	711.09	Bottom of Interval
Bottom Packer	1.86		
			Element # 67290
Upper Hanger			Recorder #
Bomb Well			
Upper Hanger			Recorder #
Belly Spring	1.55		
Bull Nose	.60	715.10	Bottom Tools

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RESISTIVITY/

CONDUCTIVITY

COMPUTALOG
Wireless Services

SIMULTANEOUS TRIPLE INDUCTION SFL LOG

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COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES

PROVINCE NORTHWEST TERRITORIES

Loc: Not Found ---- Ref: ----- Perm. Datum GROUND LEVEL Elev. 249.30 m
Log Measured from KB 4.80 m above Permanent Datum
Elev.: K.B. 254.10 m, G.L. 249.30 m
Other Services: SPHD/CNT/GGR/DAC SWD/GGR RWT/GGR
ELEV.: K.B. 254.10 m, G.L. 249.30 m, CBF -----

API No: 5004 9800 0191 1100
Licence No. 1966

Date	MARCH 17, 2003		
Run No.	ONE		
Depth Driller	800.0 m		
Depth Logger	800.3 m		
First Reading	798.2 m		
Last Reading	176.5 m		
Meters Meas.	621.7 m		
Csg. Driller	201.0 m	219.1mm @ 31.7kg/m	
Csg. Logger	176.5 m		
Bit Size	200.0 mm		
Fluid Type	GEL CHEMICAL		
Dens. & Visc.	1180	62	
pH Fluid Loss	9.0	9.0	
Source Sample	FLOWLINE		
@	3.3 @ 18 °C	@ °C	@ °C
@	3.4 @ 18 °C	@ °C	@ °C
@	3.5 @ 18 °C	@ °C	@ °C
@	3.5 @ 34 °C	@ °C	@ °C
Max Rec. Temp	34 °C		
Logging Eng.	N.A.		
Operating Time	3.5 HRS		
Unit #	364		
Location	GRANDE PRAIRIE DH		
Recorded By	K. POSTON		
Witnessed By	G. MCNEILL		

REMARKS: Tripped 800.0 m to 800.3 m
DUAL INDUCTION-SFL-SONIC-GAMMA RAY-CALIPER RUN AS COMBINATION
SONIC-GAMMA RAY-CALIPER RUN AS COMBINATION
ALL LOGS RUN WITH CALIPER ARMS IN HOLE
CASING & BIT SIZE ARE BELOW KB
CASING & BIT SIZE ARE BELOW GL
TOOLS STUCK @ 800 m, WORKED FREE AFTER 2 HRS
TOOLS STUCK @ 800 m, WORKED FREE AFTER 2 HRS

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

Service Order # 2030660

Run No. 1 | Prefix 1 | Suffix

Tool Type: DIT | SDT | SWC
Tool No.: 1 | 1 | 1
Equipment Size: 127mm | 127mm | 127mm
Base: 3 STANDOFFS | 3 STANDOFFS | 3 STANDOFFS
Eq. No.: 364-1 | 364-2 | 364-3

Type Logs: DIT-E | SDT-B | SWC
Scale: 1 | 1 | 1

Type Fluid in Hole: GEL CHEMICAL
Density & Visc.: 1180 | 62
pH & Fluid Loss: 9.0 | 9.0
Source of Sample: FLOWLINE
Rm @ Meas. Temp: 3.3 @ 18 °C
Rmf @ Meas. Temp: 3.4 @ 18 °C
Rmc @ Meas. Temp: 3.5 @ 18 °C
Source Rmf / Rmc: M / M
Rm @ BHT: 3.5 @ 34 °C
Time Since Circ.: 3.5 HRS
Max. Rec. Temp.: 34 °C
Equip. Location: 364 GRANDE PRAIRIE DH
Recorded By: K. POSTON
Witnessed By: G. MCNEILL

Service Order # 2030660

Run No. 1 | Prefix 2 | Suffix

Tool Type: SDT
Tool No.: 1
Equipment Size: 127mm
Base: 3 STANDOFFS
Eq. No.: 364-2

Type Logs: SONIC
Scale: 1

Type Fluid in Hole: GEL CHEMICAL
Density & Visc.: 1180 | 62
pH & Fluid Loss: 9.0 | 9.0
Source of Sample: FLOWLINE
Rm @ Meas. Temp: 3.3 @ 18 °C
Rmf @ Meas. Temp: 3.4 @ 18 °C
Rmc @ Meas. Temp: 3.5 @ 18 °C
Source Rmf / Rmc: M / M
Rm @ BHT: 3.5 @ 34 °C
Time Since Circ.: 3.5 HRS
Max. Rec. Temp.: 34 °C
Equip. Location: 364 GRANDE PRAIRIE DH
Recorded By: K. POSTON
Witnessed By: G. MCNEILL

Service Order # 2030660

Run No. 1 | Prefix 3 | Suffix

Tool Type: SWC
Tool No.: 1
Equipment Size: 127mm
Base: 3 STANDOFFS
Eq. No.: 364-3

Type Logs: SWC
Scale: 1

Type Fluid in Hole: GEL CHEMICAL
Density & Visc.: 1180 | 62
pH & Fluid Loss: 9.0 | 9.0
Source of Sample: FLOWLINE
Rm @ Meas. Temp: 3.3 @ 18 °C
Rmf @ Meas. Temp: 3.4 @ 18 °C
Rmc @ Meas. Temp: 3.5 @ 18 °C
Source Rmf / Rmc: M / M
Rm @ BHT: 3.5 @ 34 °C
Time Since Circ.: 3.5 HRS
Max. Rec. Temp.: 34 °C
Equip. Location: 364 GRANDE PRAIRIE DH
Recorded By: K. POSTON
Witnessed By: G. MCNEILL

REMARKS

WELL PACK
WITH CASING
TO PROTECT

DEPTH SCALE: 1:600

MAIN PASS

DATE: 30/03/2003 SITUP

FINISH DEPTH: 8.0 Meters DIRECTION: UP

VERSION: 2003.01.06.283

TIME:

MODE: TRACE PLAYBACK

1000.0	Tension Pounds		0
0.00	Gamma Ray API		150
-75	SP MILLIVOLTS		75

1000.0	20IN Deep DIT Cond. MILLIMHO/METER	0.0
0.00	SFL Resistivity OHMMETERS	50.00
0.00	20IN Deep DIT OHMMETERS	50.00
0.00	20IN Deep DIT OHMMETERS	50.00

Caliper (in)
Gamma Ray
Tension
SP
Deep Cond.
SFL
Deep Res.
Deep Res.

Scale 1:600

Depth (m) 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600 625 650 675 700 725 750 775 800

SP
-75 Millivolts 75

Gamma Ray
0 API 150

Tension
10000 Pounds 0

20K Deep STI
0.00 OhmMeters 50.00

SFL Resistivity
0.00 OhmMeters 50.00

20K Deep STI Cond.
1000.0 Millimho/Meter 0.0

START DEPTH: 805.8 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:600 VERSION: 2003.01.06.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	350.0	MilliMeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

MAIN PASS
1:240 SCALE
15 MV SP SCALE

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

MAIN PASS

30016600 STIMP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension
10000 Pounds 0

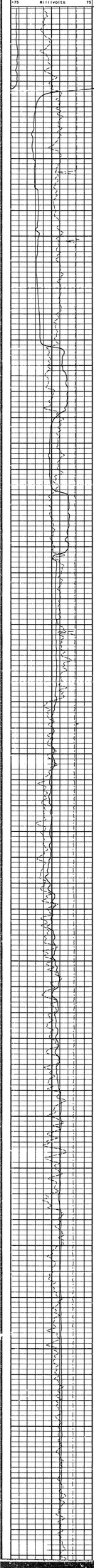
Gamma Ray
0 API 150

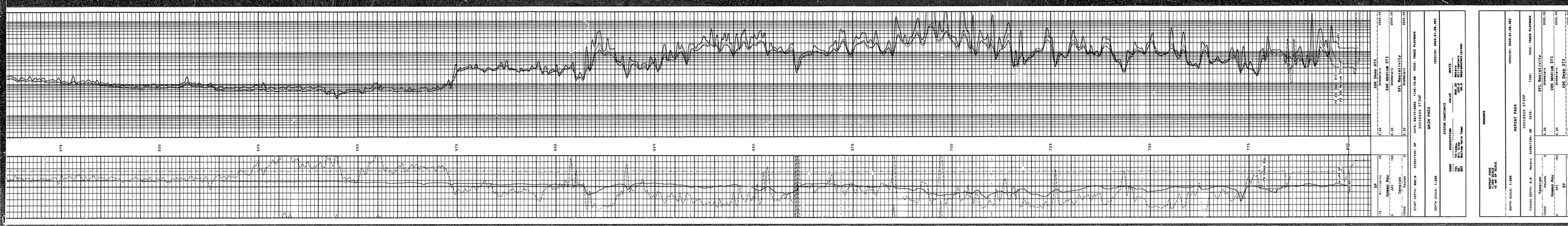
SP
-75 Millivolts 75

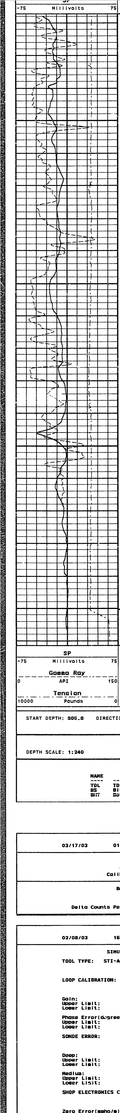
SFL Resistivity
0.20 OhmMeters 2000.00

20K Medium STI
0.20 OhmMeters 2000.00

20K Deep STI
0.20 OhmMeters 2000.00




475
500
525
550
575
600
625
650
675
700
725
750
775
800
SP
Gamma Ray
Tension
Pounds
START DEPTH: 9804.0
DIRECTION: UP
FINISH DEPTH: 8.0
Meters
DIRECTION: UP
DEPTH SCALE: 1:240
REPEAT PASS
DEPTH SCALE: 1:240
REPEAT PASS
1:240 SCALE
DATE: 08/27/2003
TIME: 13:16
MODE: TRACE PLAYBACK
20016500.STSP
MAIN PASS
VERSION: 2003.01.08.282
SYSTEM CONSTANTS
NAME
DESCRIPTION
VALUE
UNITS
TENSION
Tension Offset
8000.0
Pounds
GR
Gamma Ray Offset
0.0
API
SPD
Speed Offset
0.0
Ft/Min
SPD
Speed
Ft/Min
25K Chan STT
Milliseconds
2000.00
0.00
20K Wellhead STT
Milliseconds
2000.00
0.20
SPL Resistivity
Ohmmeters
2000.00
0.20
P/S Ph Wellhead STT
Milliseconds
2000.00
0.20
REMARKS
REPEAT PASS
1:240 SCALE
DEPTH SCALE: 1:240
REPEAT PASS
VERSION: 2003.01.08.282
FINISH DEPTH: 8.0
Meters
DIRECTION: UP
DATE:
TIME:
MODE: TRACE PLAYBACK
SP
Gamma Ray
Tension
Pounds
10000
0
SPL Resistivity
Ohmmeters
0.20
2000.00
20K Wellhead STT
Milliseconds
0.20
2000.00
25K Chan STT
Milliseconds
0.20
2000.00



START DEPTH: 805.0 DIRECTION: UP DATE: 03/17/2003 TIME: 13:37 MODE: TRACE PLAYBACK

30016600 STRP

REPEAT PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.392

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	806.28	Meters
BDL	Bit Depth	805.0	Meters
BHT	Bottom Hole Temp	84.0	DegreesCentigrade

03/17/03 01:44 0.0 M Ver 2.0b-2.0b Job 30016600

Gamma Ray Before Survey Calibration

Tool Type: UGR-UA Serial No: UGR195
Calibrator No: RA-200-384

Background	Calibrator	Standard	Units
136.9	839.4	140.0	API

Delta Counts Per Sec: 594.6 CPS/API = 3.604

03/08/03 16:34 0.0 M Ver 3.0b-2.0b Job SHOP

SIMULTANEOUS TRIPLE INDUCTION SHOP CALIBRATION

TOOL TYPE: STI-AC
SONDE SERIAL NO.: STSB122
ELECTRONICS SERIAL NO: STCB122

LOOP CALIBRATION: Gain and Phase Error of Internal Reference

	10KHz DEEP	10KHz MEDIUM	20KHz DEEP	20KHz MEDIUM	40KHz DEEP	40KHz MEDIUM
Gain:	1.004	0.997	1.018	0.980	1.009	0.983
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(Degrees):	1.13	0.00	1.05	0.70	0.75	0.66
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SONDE ERROR:

	10KHz R	10KHz X	20KHz R	20KHz X	40KHz R	40KHz X
Deep:	6.9	14.4	6.5	-0.6	2.6	-7.9
Upper Limit:	20.0	100.0	20.0	100.0	20.0	100.0
Lower Limit:	-20.0	-100.0	-20.0	-100.0	-20.0	-100.0
Medium:	-10.7	-22.4	-11.3	-27.9	1.9	-73.3
Upper Limit:	20.0	100.0	20.0	100.0	20.0	100.0
Lower Limit:	-20.0	-100.0	-20.0	-100.0	-20.0	-100.0

SHOP ELECTRONICS CALIBRATION:

	10KHz R	10KHz X	20KHz R	20KHz X	40KHz R	40KHz X
Zero Error(mmho/m):	5.3	18.0	3.9	6.9	4.0	9.6
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.997	0.995	1.001	0.993	1.002	0.993
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.06	-0.10	-0.11	0.00	-0.25	-0.72
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X
Zero Error(mmho/m):	10.8	18.1	12.0	2.4	7.7	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.999	0.994	1.000	0.992	0.999	0.992
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-0.87	-0.08	0.08	-0.58	0.77	-0.60
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-0.8	-100.0	100.0	uV	1.033	0.800	1.300
Current:	-0.1	-20.0	20.0	uA	1.033	0.800	1.300

03/17/03 11:20 68.0 M Ver 3.0b-2.0b Job 30016600

SIMULTANEOUS TRIPLE INDUCTION BEFORE SURVEY CALIBRATION

TOOL TYPE: STI-AC
SONDE SERIAL NO.: STSB122
ELECTRONICS SERIAL NO: STCB122

	10KHz R	10KHz X	20KHz R	20KHz X	40KHz R	40KHz X
Zero Error(mmho/m):	11.8	17.9	9.0	12.9	8.6	7.0
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.997	0.995	1.001	0.993	1.000	0.993
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.06	-0.10	-0.11	0.00	-0.25	-0.72
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X
Zero Error(mmho/m):	10.8	18.1	12.0	2.4	7.7	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.999	0.994	1.000	0.992	0.999	0.992
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.13	-0.10	-0.23	-0.85	0.17	-0.58
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-0.8	-100.0	100.0	uV	1.041	0.800	1.300
Current:	-0.1	-20.0	20.0	uA	1.027	0.800	1.300

03/17/03 14:45 150.0 M Ver 3.0b-2.0b Job 30016600

SIMULTANEOUS TRIPLE INDUCTION AFTER SURVEY CALIBRATION

TOOL TYPE: STI-AC
SONDE SERIAL NO.: STSB122
ELECTRONICS SERIAL NO: STCB122

	10KHz R	10KHz X	20KHz R	20KHz X	40KHz R	40KHz X
Zero Error(mmho/m):	13.3	19.0	9.2	13.1	9.1	10.0
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.995	0.992	0.999	0.988	0.998	0.990
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.06	-0.10	-0.22	0.00	-0.25	-0.41
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X	MEDIUM R	MEDIUM X
Zero Error(mmho/m):	12.4	19.1	12.2	2.9	8.4	
Upper Limit:	100.0	100.0	100.0	100.0	100.0	100.0
Lower Limit:	-100.0	-100.0	-100.0	-100.0	-100.0	-100.0
Gain:	0.998	0.993	0.999	0.989	0.998	0.990
Upper Limit:	1.100	1.100	1.100	1.100	1.100	1.100
Lower Limit:	0.900	0.900	0.900	0.900	0.900	0.900
Phase Error(degrees):	-1.05	-0.11	-0.20	-0.58	0.46	-0.40
Upper Limit:	10.00	10.00	10.00	10.00	10.00	10.00
Lower Limit:	-10.00	-10.00	-10.00	-10.00	-10.00	-10.00

SFL CALIBRATIONS:

	OFFSET	MIN	MAX	UNITS	GAIN	MIN	MAX
Voltage:	-0.5	-100.0	100.0	uV	1.038	0.800	1.300
Current:	-0.1	-20.0	20.0	uA	1.023	0.800	1.300

SPeD 400 Pad Section

Weight 141.5 kg
Length 3.38 m
Max. Diameter 11.4 cm

Borehole Compensated Sonic

Weight 104.0 kg
Length 4.67 m
Max. Diameter 8.6 cm

Centralizer

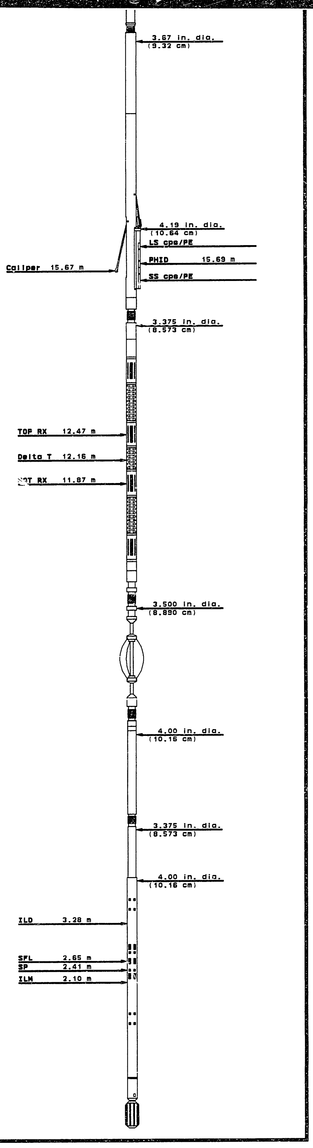
Weight 30.9 kg
Length 1.39 m
Max. Diameter 9.9 cm

Simultaneous Triple Induction

Weight 176.9 kg
Length 8.75 m
Max. Diameter 10.2 cm

Stand - Off

Weight 5.5 kg
Length 0.20 m



COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES PROVINCE N.W.T.

COMPUTALOG
Wireline Services

SONIC

COMPUTALOG

Wireline Services

N.E.B. COPY

BOREHOLE COMPENSATED SONIC LOG

PROVINCE	NORTHWEST TERRITORIES
FIELD	MACKAY LAKES
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
COMPANY	PARAMOUNT RESOURCES LTD.

COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36 /

FIELD MACKAY LAKES

PROVINCE NORTHWEST TERRITORIES

SD - 35 GROUND LEVEL Elev. 289.90 m
Log Data Measured from KB 4.80 m above Permanent Datum.
Elevations: KB 294.70 m
GL 289.90 m
Licence 1986
300K95E0073(3)

Other Services: SFRD/CNT/UGR/DSC SII/UGR HRT/UGR/

| | | |

475
500
525
550
575
600
625
650
675
700
725
750
FR Y Caliper
775
FR Gamma Ray
Tension
Bit Size
800
FR BCS Delta Ti
ITT

Gamma Ray		
0	API	150
Y Caliper		
125	Millimeters	375
Tension		
10000	Pounds	0

BCS Delta Time		
500.0	Microsec/Meter	100.0

START DEPTH: **805.8** DIRECTION: **UP** DATE: **03/17/2003** TIME: **13:46** MODE: **TRACE PLAYBACK**

30016600 STIMP

MAIN PASS

DEPTH SCALE: **1:600** VERSION: **2003.01.06.282**

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

MAIN PASS
1:240 SCALE
300 - 100 usec/m

DEPTH SCALE: **1:240** VERSION: **2003.01.06.282**

MAIN PASS

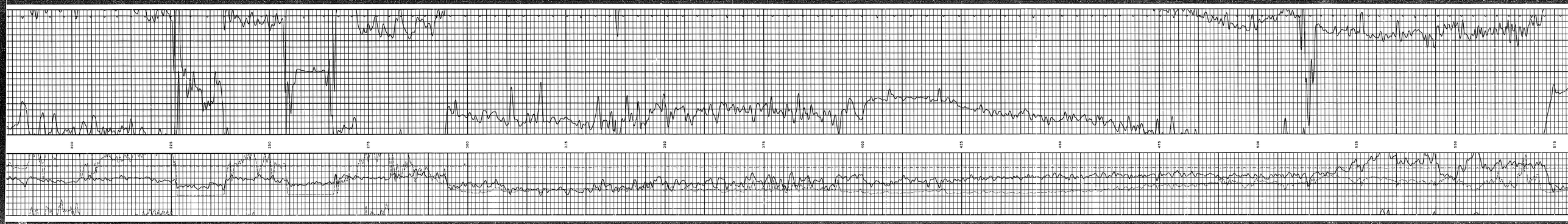
30016600 STIMP

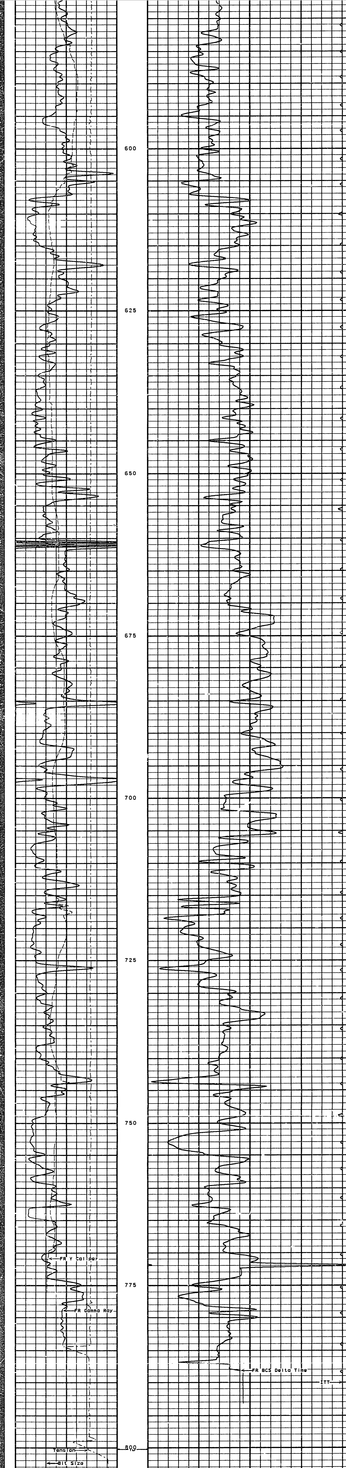
FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension		
10000	Pounds	0
Y Caliper		
125	Millimeters	375
Gamma Ray		
0	API	150

BCS Delta Time		
300.0	Microsec/Meter	100.0

175
CSG


200
225
250
275
300
325
350
375
400
425
450
475
500
525
550
575



Gamma Ray		BCS Delta Time	
0 API	150	300.0 Microsec/Meter	100.0
Y Caliper			
125 Millimeters	375		
Tension			
10000 Pounds	0		

START DEPTH: 805.0 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.2P2

SYSTEM CONSTANTS

MNEM	DESCRIPTION	VALUE	UNITS
CS	Casing	7.000	Inches
TDL	TD: Logger	830.00	Millimeters
BHT	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	71.0	DegreesCentigrade

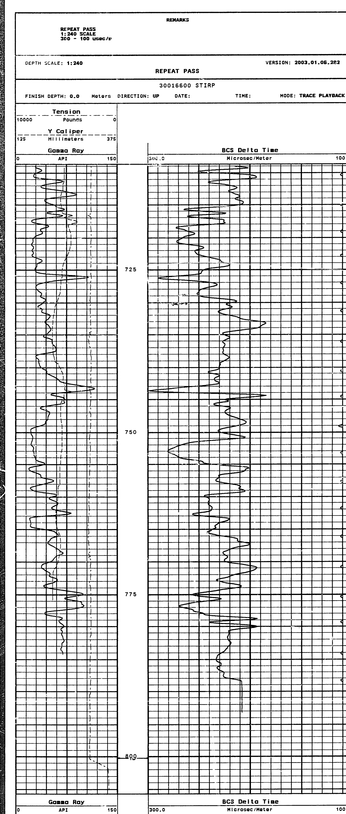
REMARKS

REPEAT PASS
1:240 SCALE
300 - 100 USec/F

DEPTH SCALE: 1:240 VERSION: 2003.01.06.2P2

REPEAT PASS

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK



Gamma Ray		BCS Delta Time	
0 API	150	300.0 Microsec/Meter	100.0
Y Caliper			
125 Millimeters	375		
Tension			
10000 Pounds	0		

START DEPTH: 805.0 DIRECTION: UP DATE: 03/17/2003 TIME: 13:37 MODE: TRACE PLAYBACK

30016600 STIRP

REPEAT PASS

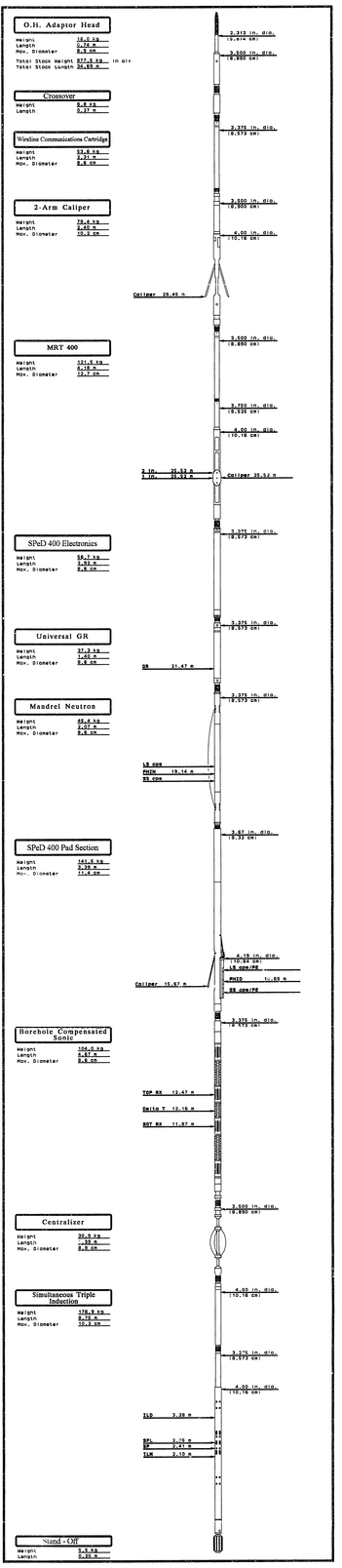
DEPTH SCALE: 1:240 VERSION: 2003.01.06.2P2

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TD1	TI-Logger	600.30	Meters
BS	Bit Size	20.32	Centimetre
BHT	Bottom Hole Temp	76.0	DegreesCentigrade

03/17/03	01:44	0.0 M	Ver 2.0b	Job 30016800	
Caliper Before Survey Calibration					
Tool Type: CAL-FA			Serial No:cal143		
	Measured		Calibrated		
	Small	Large Units	Small	Large	Units
HCLO	691.3	1332.9 mv	177.8	355.6	mm

03/17/03	01:44	0.0 M	Ver 2.0b-2.0b	Job 30016800
Gamma Ray Before Survey Calibration				
Tool Type: UGR-JA			Serial No: UGRJ195	
Calibrator No: RA-202-384				
Background		Calibrator	Standard	Units
124.8		629.4	140.0	API
Delta Counts Per Sec: 504.6			CPS/API = 3.604	



COMPANY	PARAMOUNT RESOURCES LTD.		COMPUTALOG Wireline Services
WELL	PARAMOUNT ET AL MACKAY LAKES K-36		
FIELD	MACKAY LAKES	PROVINCE N.W.T.	

DENSITY

COMPUTALOG
Wireline Services

SPECTRAL Pe DENSITY
COMPENSATED NEUTRON
GAMMA RAY LOG

N.E.B. COPY

COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES

PROVINCE NORTHWEST TERRITORIES

PROVINCE	NORTHWEST TERRITORIES
FIELD	MACKAY LAKES
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
COMPANY	PARAMOUNT RESOURCES LTD.

LSD ----- Sec. ----- Twp. ----- Rge. -----
Perm. Datum GROUND LEVEL Elev. 289.90 m
Log measured from KB , 6.80 m above Perm. Datum.
API No. 75-085-00012-01-00
UWI
Licence 1966

Other Services:
SGT-SP/GR
NMR/GR NMT/GR
ELEV.K.B. 296.70 m
G.L. 289.90 m
CBF

Date	MARCH 17, 2003								
Run No.	ONE								
Bot. Driller	800,0 m								
Bot. Logger	800,3 m								
First Reading	784,6 m								
Last Reading	176,5 m								
Fluid Meas.	588,1 m								
Csg. Driller	201,0 m	219,1mm @ 35,7kg/m							
Csg. Logger	176,5 m								
Bit Size	200,0 mm								
Fluid Type	GEL CHEMICAL								
Dens. / Visc.	1180	82							
pH / Fluid Loss	9,0	5,0							
Source of Sample	FLOWLINE								
Rm	3,2 @ 14 °C		@ °C		@ °C		@ °C		
Rmf	2,6 @ 16 °C		@ °C		@ °C		@ °C		
Rmc	3,5 @ 14 °C		@ °C		@ °C		@ °C		
Rm @ BHT	2,0 @ 34 °C		@ °C		@ °C		@ °C		
Rmf / Rmc	1,34 °C								
Source of Rmf / Rmc	N/A								
Rm @ Meas. Temp	3,5 @ 14 °C								
Operating Time	3,5 HRS								
Unit #	3304								
Location	GRANDE PRAIRIE DH								
Recorded By	K. POSTON								
Witnessed By	G. MCNEILL								

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT, AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

REMARKS: RIG: PRECISION #117 Service Order # 30016600

Drilling Stopped 03:45 ,17 Circulation Stopped 07:30 ,17 Tool on Bottom 13:45 ,17 BHT 34 °C
Logged Up At 17:45 ,17 Casing Fluid At 220 ASL
Casing Fluid At 14.5m Casing Interval At 220-588
Casing Diameter 219.1mm Casing Weight 35.7kg/m Casing Grade J55
Bridge Different Method Recorded Between Main Pass And Repeat Pass
Caliper Recorded In Both Passes
Checksum Was Not Applied To Any Curves
Data Recorded Is Field Data
Data Not Depth Shifted
Type Fluid In Hole
Dens. Visc.
pH Fluid Loss
Source Sample
Rm @ Meas. Temp
Rmf @ Meas. Temp
Rmc @ Meas. Temp
Source Rmf Rmc
Rm @ BHT
Time Log Started
Time Log Stopped

SCALE CHANGES

Type Log	Interval

EQUIPMENT DATA

	Run No.	Tool Type	Tool No.	Other
	ONE	SGT-SP/GR	1543	
		CNT-CB	1284	
		CNL-CB	1284	
		CNL-CB	1423	

POSITION
Bow Spring
Decentralizer
Centralizer
Rugosity Caliper

Run No.	ONE
Pass No.	MAIN PASS
Date	17-MAR-2003
Time Logger On Bottom	13:45
Unit Number	3304
Recorded By	K. POSTON
Witnessed By	G. MCNEILL

REMARKS

MAIN PASS.
RUN AND PROCESSED WITH 3 SIGMA PRESENTATION.
SPUN HOLE VOLUME ON THE LEFT SIDE OF THE DEPTH TRACK
SPUN HOLE VOLUME ON THE RIGHT SIDE OF THE DEPTH TRACK

DEPTH SCALE: 1:600

VERSION: 2003.01.00.282

MAIN PASS

30016600 STMP

Bhv CASING SIZE: 193.70 Millimeters CALIPERS: CALI:CAL3:None
FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Annular 1500.7 0.0 2000
Borehole 335.0 0.0 375

Tension
10000 Pounds 0

Y Caliper
125 Millimeters 375

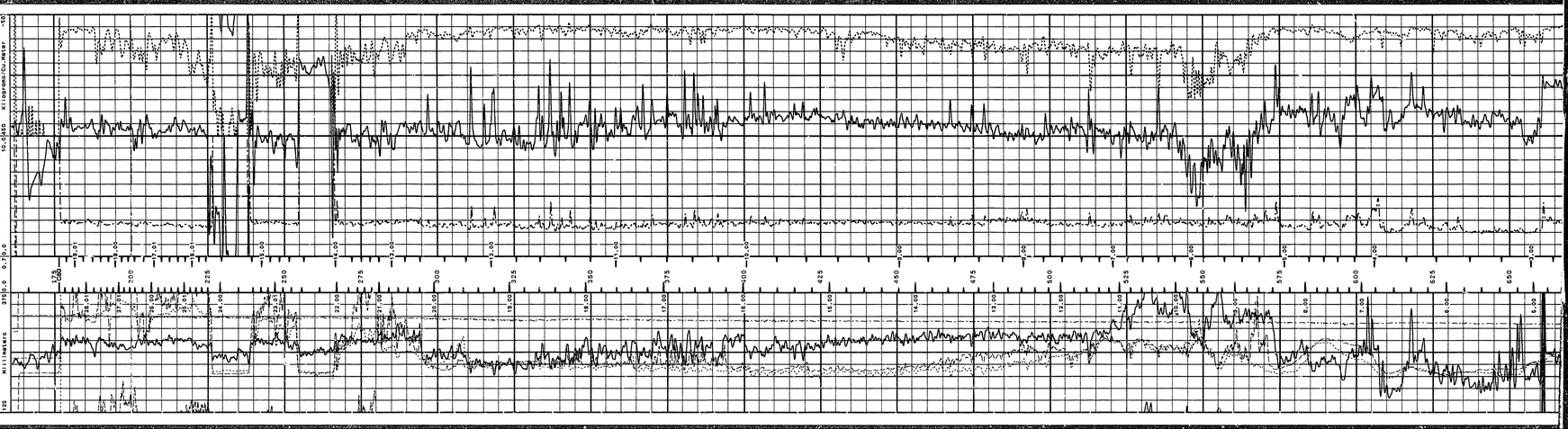
X Caliper
125 Millimeters 375

Gamma Ray
API 0

Bulk Density
Kilonewton/Cu.Meter 3000

Photoelectric Effect
0 Cu.Cm/Gm 10

Density Correction
-250 Kg/Cu.Cm 250



START DEPTH: 805.0 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

BHV CASING SIZE: 139.70 Millimeters CALIPERS: CALI,CALI,None

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:600

VERSION: 2003.01.06.2J2

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TOL	Tolerance	600.00	Meters
BIT	Bit Size	222.0	Millimeters
MWT	Mudcake Mate Temp	54.0	DegreesCentigrade
MAC	Mudcake Correction	0.0	
MAT	Matrix Density	2650.0	Kilograms/Cu.Meter
SCAL	Density RM Scale Source	X Caliper	
BHC1	BHV Caliper Source 1	CALI	
BHC2	BHV Caliper Source 2		
BHC3	BHV Caliper Source 3	None	CALI
BDC1	BHV Diff Cal Source		CALI
BMCS	BHV Method	Standard BHV	

REMARKS

MAIN PASS
1:240 SCALE
SANDSTONE MATRIX (2650 kg/m3)

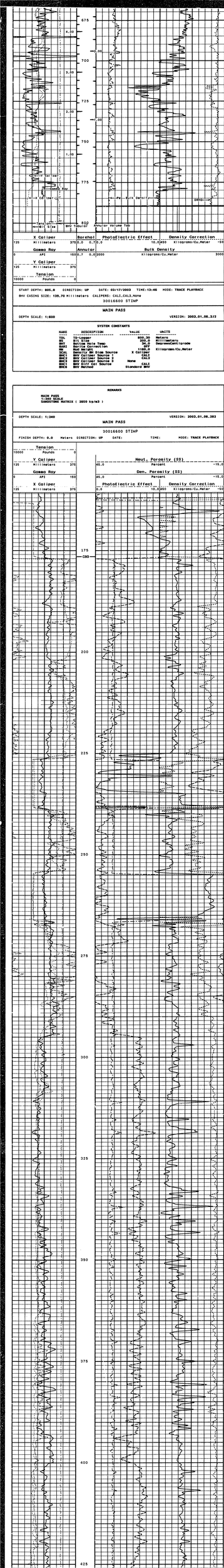
DEPTH SCALE: 1:240

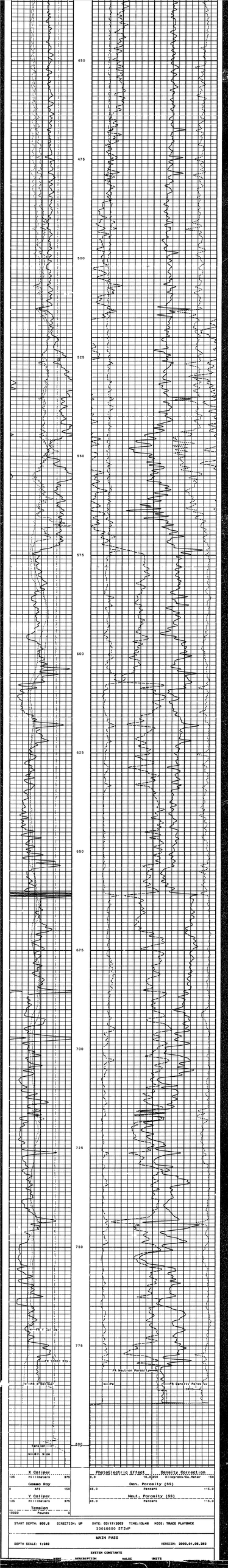
VERSION: 2003.01.06.2B2

MAIN PASS

30016600 STIMP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK





START DEPTH: 805.0 DIRECTION: UP DATE: 03/17/2003 TIME:13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.393

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS

TDL	TD-Logger	800.30 Meters
BS	Bit Size	350.0 Millimeters
BHT	Bottom Hole Temp	34.0 DegreesCentigrade
RMCI	Acquisition Time	120 Seconds
RMCI	Borite Correction	OFF
RM	Mud Weight	1180.0 Kilograms/Cu.Meter
MSAI	X Factor-MSU	1.016
MTLS	Tool Type-CNT	Calliper
RMCS	Bitsize/Calp Sel-CNT	CNT-C
MTLS	Tool Type-CNT	CNT-C
CNTT	Centigrad Temp-CNT	24.0 DegreesCentigrade
NCOR	Cnt Environ-Correction	OFF
MCAL	LIS Calliper Name-CNT	X Calliper
SCAL	Density Bh Stdm Source	X Calliper

REMARKS

REPEAT PASS
13360 SCALE
SANDSTONE MATRIX (2650 kg/m3)

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

REPEAT PASS

30016600 STIRP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension
10000 Pounds 0

Y Caliper
125 Millimeters 375

Neut. Porosity (SS)
45.0 Percent -15.0

Gamma Ray
0 API 150

Den. Porosity (SS)
45.0 Percent -15.0

X Caliper
125 Millimeters 375

PhotoElectric Effect
0.0 10.0000

Density Correction
.500 Kilograms/Cu.Meter -.500

725

750

775

800

X Caliper
125 Millimeters 375

PhotoElectric Effect
0.0 10.0000

Density Correction
.500 Kilograms/Cu.Meter -.500

Gamma Ray
0 API 150

Den. Porosity (SS)
45.0 Percent -15.0

Y Caliper
125 Millimeters 375

Neut. Porosity (SS)
45.0 Percent -15.0

Tension
10000 Pounds 0

START DEPTH: 805.8 DIRECTION: UP DATE: 07/17/2003 TIME: 13:37 MODE: TRACE PLAYBACK

30016600 STIRP

REPEAT PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	350.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade
RMCI	Acquisition Time	120	Seconds
BARI	Borite Correction	OFF	
RM	Mud Weight	1180.0	Kilograms/Cu.Meter
MSAI	X Factor-MSU	1.016	
NCOR	Cnt Environ-Correction	OFF	
RMCS	Bitsize/Calp Sel-CNT	Calliper	
MTLS	Tool Type-CNT	CNT-C	
CNTT	Centigrad Temp-CNT	24.0	DegreesCentigrade
MCAL	LIS Calliper Name-CNT	X Calliper	
SCAL	Density Bh Stdm Source	X Calliper	

03/17/03 01:44 0.0 M Ver 2.0b Job 30016600

Calliper Before Survey Calibration

Tool Type: CAL-FA Serial No:calf143

	Measured Small	Measured Large	Units	Calibrated Small	Calibrated Large	Units
MCLG	691.3	1333.9	mv	177.8	355.6	mm

03/17/03 01:44 0.0 M Ver 2.0b-2.0b Job 30016600

Gamma Ray Before Survey Calibration

Tool Type: NSR-AA Serial No: UGRA195
Calibrator No: RA-203-384

Background	Calibrator	Standard	Units
134.8	829.4	140.0	API

Delta Counts Per Sec: 504.6 CPS/API = 3.604

03/11/03 11:17 0.0 M Ver 2.0b-2.0b Job SHOP

Compensated Neutron Shoe Calibration

Tool Type: CNT-S Serial No: cnta184
Verifier No: MSV-307 Source No: 295-NM
Tone Type: NCT-AA

	Low Porosity	Mod Porosity	High Porosity	Units
Tone Ratio:	0.712	1.457	2.294	SS/LS
Tone Porosity:	-15.78	10.25	35.73	LM-PU
LS Detector:	1415.3	344.5	140.8	CPS
SS Detector:	981.4	494.3	323.0	CPS
Tool Ratio:	0.693	1.434	2.294	SS/LS
Tool Porosity:	-15.85	10.25	37.12	LM-PU

Tool Constant: 1.016
Surface Temperature: 31 DegC

SS Detector	LS Detector	Ratio	Porosity
299.4 CPS	189.8 CPS	1.580	11.41

03/17/03 01:42 0.0 M Ver 2.0b-2.0b Job 30016600

Compensated Neutron Before Survey Calibration

Tool Type: CNT-S Serial No: cnta184
Verifier No: MSV-307 Source No: 295-NM

Verifier Check	Units
LS Detector: 198.1	CPS
SS Detector: 298.4	CPS
Tool Ratio: 1.522	SS/LS
Tool Porosity: 11.79	LM-PU

Tool Constant: 1.016

03/17/03 10:07 0.0 M Ver 2.0b-2.0b Job 30016600

Compensated Neutron After Survey Calibration

Tool Type: CNT-S Serial No: cnta184
Verifier No: MSV-307 Source No: 295-NM

Verifier Check Before	After	Units
LS Detector: 198.1	197.4	CPS
SS Detector: 298.4	296.3	CPS
Tool Ratio: 1.522	1.501	SS/LS
Tool Porosity: 11.79	11.42	LM-PU

Tool Constant: 1.016

03/24/03 21:29 0.0 M Ver 2.0b-2.0b Job SHOP

Spectral Pe Density Shop Calibration

Tool Type: SPS-AB Sonde No: SPCB153
Electronics No: SPCB153
Firmware Ver: 8.03 Source No: 1511-GM
Aluminum Blk No: ALBA100 Magnesium Blk No: MGBA100

	Bkg	Al	Al+Fe	Mg	Units
Ca Pk	108.43	108.54	111.06	109.74	Ch
Ratio	0.165	0.165	0.153	0.150	Ch/Kev
Trig Pk	11.09				
Off	-0.144				
Res	11.09	11.15	10.75	11.00	%
LSPE	1035	1612	833	5525	cps
LSPE	84	1092	839	5749	cps
LSUC	516	1597	1672	5693	cps
LCNP	1027	2897	3356	5693	cps
Ca Pk	109.34	109.82	110.33	109.70	Ch
Ratio	0.165	0.166	0.165	0.165	Ch/Kev
Trig Pk	11.09				
Off	0.232				Ch
Res	9.86	9.89	9.34	10.09	%
SSPE	1035	1634	1277	2781	cps
SSPE	88	1634	1277	2781	cps
SSUC	489	4121	3849	5229	cps
SCNP	985	10181	8947	15317	cps
Acc	250	250	250	250	Secs

Density Calibration

	Fresh	Barite
Spine Angle. =	77.30	78.59
Spine Length =	201.64	199.54

Pe Calibration

	Fresh
LS Slope =	1.0823
LS Intercept =	-0.3288
SS Slope =	1.1516
SS Intercept =	-0.3282

03/17/03 01:48 0.0 M Ver 2.0b-2.0b Job 30016600

Spectral Pe Density Before Survey Tool Check

Tool Type: SPS-AB Sonde No: SPCB153
Electronics No: SPCB153
Firmware Ver: 8.03 Source No: 1511-GM
Aluminum Blk No: ALBA100 Magnesium Blk No: MGBA100

	Shop	Before	Units
Ca Pk	108.43	110.03	Ch
Ratio	0.165	0.166	Ch/Kev
Trig Pk	11.09	11.06	Ch
Off	-0.144	-0.198	Ch
Res	11.09	10.83	%
LSPE	1035	1032	cps
LSPE	84	88	cps
LSUC	516	521	cps
LCNP	1027	1026	cps
Ca Pk	109.34	110.12	Ch
Ratio	0.165	0.167	Ch/Kev
Trig Pk	11.09	11.05	Ch
Off	0.232	0.126	Ch
Res	9.86	9.86	%
SSPE	1035	1030	cps
SSPE	88	90	cps
SSUC	489	472	cps
SCNP	985	999	cps
Acc	250	100	Secs

03/17/03 10:07 0.0 M Ver 3.0b-3.0b Job 30016600

Spectral Pe Density After Survey Tool Check

Tool Type: SPS-AB Sonde No: SPCB153
Electronics No: SPCB153
Firmware Ver: 8.03 Source No: 1511-GM
Aluminum Blk No: ALBA100 Magnesium Blk No: MGBA100

	Shop	Before	After	Units
Ca Pk	108.43	110.03	109.68	Ch
Ratio	0.165	0.166	0.165	Ch/Kev
Trig Pk	11.09	11.06	11.07	Ch
Off	-0.144	-0.198	-0.187	Ch
Res	11.09	10.83	10.87	%
LSPE	1035	1032	1032	cps
LSPE	84	88	88	cps
LSUC	516	521	522	cps
LCNP	1027	1026	1025	cps
Ca Pk	109.34	110.12	110.25	Ch
Ratio	0.165	0.167	0.166	Ch/Kev
Trig Pk	11.09	11.05	11.08	Ch
Off	0.232	0.126	0.137	Ch
Res	9.86	9.86	9.74	%
SSPE	1035	1030	1031	cps
SSPE	88	90	88	cps
SSUC	489	472	472	cps
SCNP	985	999	1000	cps
Acc	250	100	100	Secs

SSUC	469	472	475	cps
SCNP	965	969	995	cps
Acc	350	100	100	Secs

03/17/03	01:42	0.0 M	Ver 2.0b	Job 30016S00			
Caliper Before Survey Calibration							
Tool Type: SPD-CL				Serial No:spsb153			
	Measured			Calibrated			
	Small	Large	Units	Small	Large	Units	
MCL2	2150.6	3405.1	av	177.8	355.6	mm	

O.H. Adaptor Head

Weight 18.0 kg
Length 0.76 m
Max. Diameter 9.5 cm

Total Stack Weight 827.5 kg in air
Total Stack Length 35.55 m

2.313 in. dia. (5.874 cm)

2.500 in. dia. (6.350 cm)

Crossover

Weight 6.8 kg
Length 0.27 m

3.375 in. dia. (8.573 cm)

Wireline Communications Cartridge

Weight 53.8 kg
Length 2.31 m
Max. Diameter 9.8 cm

2-Arm Caliper

Weight 78.4 kg
Length 2.40 m
Max. Diameter 15.4 cm

3.500 in. dia. (8.890 cm)

4.00 in. dia. (10.16 cm)

Caliper 29.45 m

MRT 400

Weight 131.8 kg
Length 6.18 m
Max. Diameter 12.7 cm

3.500 in. dia. (8.890 cm)

3.750 in. dia. (9.525 cm)

4.00 in. dia. (10.16 cm)

2 in. 25.52 m
1 in. 25.97 m

Caliper 25.52 m

SPeD 400 Electronics

Weight 58.7 kg
Length 2.92 m
Max. Diameter 9.8 cm

3.375 in. dia. (8.573 cm)

Universal GR

Weight 37.3 kg
Length 1.40 m
Max. Diameter 9.8 cm

3.375 in. dia. (8.573 cm)

GR 21.47 m

Mandrel Neutron

Weight 45.4 kg
Length 2.07 m
Max. Diameter 9.8 cm

3.375 in. dia. (8.573 cm)

LS cps
MSCN 19.14 m
SS cps

SPeD 400 Pad Section

Weight 141.5 kg
Length 3.28 m
Max. Diameter 11.4 cm

3.87 in. dia. (9.83 cm)

4.19 in. dia. (10.64 cm)
LS cps/PE
PHID 15.69 m
SS cps/PE

Caliper 15.67 m

Borehole Compensated Sonic

Weight 104.9 kg
Length 4.67 m
Max. Diameter 9.8 cm

3.375 in. dia. (8.573 cm)

TOP RX 12.47 m
Delta T 12.16 m
BOT RX 11.97 m

Centralizer

Weight 30.9 kg
Length 1.35 m
Max. Diameter 9.8 cm

3.500 in. dia. (8.890 cm)

Simultaneous Triple Induction

Weight 178.5 kg
Length 8.75 m
Max. Diameter 12.2 cm

4.00 in. dia. (10.16 cm)

3.375 in. dia. (8.573 cm)

4.00 in. dia. (10.16 cm)

ILD 3.28 m

SFL 2.65 m
SP 2.41 m
ILM 2.19 m

Stand - Off

Weight 5.5 kg
Length 0.20 m

COMPANY	PARAMOUNT RESOURCES LTD.
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
FIELD	MACKAY LAKES PROVINCE N.W.T.

COMPUTALOG
Wireline Services

MICRO

COMPUTALOG — Wireline Services

MICRO-RESISTIVITY LOG

N.E.B. COPY

COMPANY	PARAMOUNT RESOURCES LTD.
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
FIELD	MACKAY LAKES
PROVINCE	NORTHWEST TERRITORIES

LSD ---- Sec.---- Twp.---- Rge.----
Perm. Datum GROUND LEVEL Elev. 289.90 m
Log measured from RB 5.80 m above Permanent Datum
ELEV. K.B. 294.70 m
G.L. 289.90 m
CBF ------

API No. 300-116020-1121159
Licence 1505

Other Services: SFL/CNT/GDR/DAC BHC/GDR SFL/GDR

Date	MARCH 17, 2000.	
Run No.	ONE	
Dpt. Driller	800.0 m	
Dpt. Logger	800.3 m	
First Reading	776.8 m	
Last Reading	300.0 m	
Meters Meas.	476.8 m	
Csg. Driller	301.0 m	219.1mm @ 35.7kg/m
Csg. Logger	176.5 m	
Bit Size	200.0 mm	
Fluid Type	GEL CHEMICAL	
Dens. | Visc.	1180 | 62	
pH | Fluid Loss	9.0 | 9.0	
Sample Source	FLOWLINE	
Rm	2.2 @ 14 °C	@ °C
Rmf	2.8 @ 16 °C	@ °C
Rmc	1.5 @ 14 °C	@ °C
Rm @ BHT	1.0 @ 34 °C	@ °C
Max Rec. Temp	34 °C	
Logging Unit No.	N/A	
Operating Time	3.5 HRS	
Recorded By	K. PISTON	
Witnessed By	G. MCNEILL	
Location	LOUANCE PRAIRIE GH	

REMARKS

Service Order # 2011650

Drilling Stopped @1:45 hr. Circulation Stopped @1:30 hr. Tool on Bottom @2:20 hr. Out @ 4:30 hr.

- Caliper Logged with Gamma Detector at 200 FPM. Casing Inclined at 1°.
- Density Compensation Poor in Washed Out Hole.
- Sonic Compensation Poor in Washed Out Hole.
- Sonic Logged with 3 Receivers and 1 Transmitter.
- Sonic Logged in Compressional Mode.
- Sonic Logged in Short Spacing Mode.

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Scale Changes

Run	Log	Depth
1	1	776.8
1	2	600.0
1	3	400.0
1	4	300.0

Tools Used

Tool	Type	Run No.	Tool No.
Dual Induction SFL	DIS	ONE	1511SB
Borehole Compensated Sonic	BHC		1501-A
Compensated Density	CDL		1513
Compensated Neutron	CNT		
Gamma Ray	GR		
Dual Induction SFL	DIS	TWO	1511SB
Borehole Compensated Sonic	BHC		1501-A
Compensated Density	CDL		1513
Compensated Neutron	CNT		
Gamma Ray	GR		
Dual Induction SFL	DIS	THREE	1511SB
Borehole Compensated Sonic	BHC		1501-A
Compensated Density	CDL		1513
Compensated Neutron	CNT		
Gamma Ray	GR		

Other Equipment Data

Logging Engineer	K. PISTON
Office	CALGARY

REMARKS

MAIN PASS
SCALE
1:240

DEPTH SCALE: 1:240

MAIN PASS

VERSION: 2003.01.06.2002

FINISH DEPTH: K.B. Metres DIRECTION: UP DATE: 30016600 STIMP TIME: MODE: TRACE PLAYBACK

1.5" Resistivity 0.0 40.0
Ohmmeters
5" Resistivity 0.0 40.0
Ohmmeters

300 325 350 375 400 425 450 475 500 525 550

TENSION Tension Pounds 0 10000
X Caliper Millimeters 125 375
MEL Caliper Millimeters 125 375
Gamma Ray 0 150

Gamma Ray		2" Resistivity	
0 API 150		0.0 OhmMeters 40.0	
MEL Caliper		1.5" Resistivity	
125 Millimeters 375		0.0 OhmMeters 40.0	
Y Caliper			
125 Millimeters 375			
Tension			
10000 Pounds 0			

START DEPTH: 805.8 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.08.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	YO-Lugger	800.30	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

REPEAT PASS
1:240 SCALE

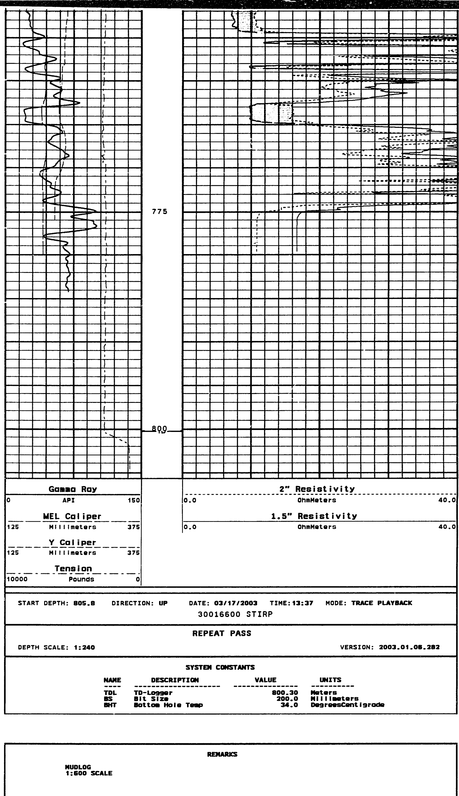
DEPTH SCALE: 1:240 VERSION: 2003.01.08.282

REPEAT PASS

30016600 STIRP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension			
10000 Pounds 0			
Y Caliper			
125 Millimeters 375			
MEL Caliper		1.5" Resistivity	
125 Millimeters 375		0.0 OhmMeters 40.0	
Gamma Ray		2" Resistivity	
0 API 150		0.0 OhmMeters 40.0	



START DEPTH: 805.8 DIRECTION: UP DATE: 03/17/2003 TIME: 13:37 MODE: TRACE PLAYBACK

30016600 STRP

REPEAT PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.08.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

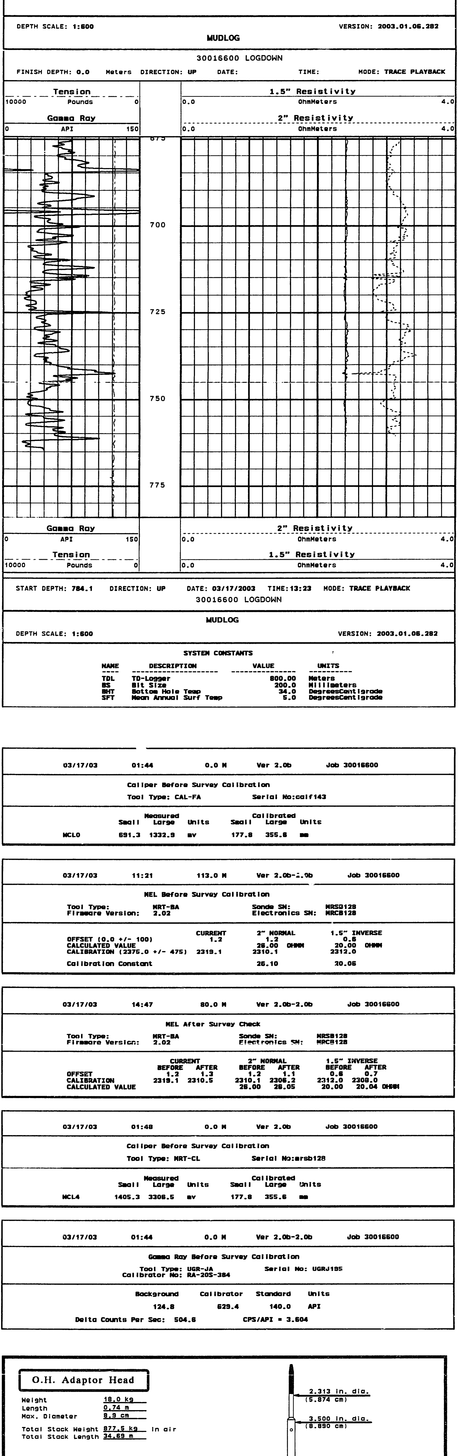
MUDLOG
1:600 SCALE

DEPTH SCALE: 1:600 VERSION: 2003.01.08.282

MUDLOG

30016600 LOGDOWN

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK



START DEPTH: 784.1 DIRECTION: UP DATE: 03/17/2003 TIME: 13:23 MODE: TRACE PLAYBACK

30016600 LOGDOWN

MUDLOG

DEPTH SCALE: 1:600 VERSION: 2003.01.08.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.00	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade
SFT	Mean Annual Surf Temp	5.0	DegreesCentigrade

03/17/03 01:44 0.0 M Ver 2.0b Job 30016600

Caliper Before Survey Calibration

Tool Type: CAL-FA Serial No:calf143

	Measured Small	Large	Units	Calibrated Small	Large	Units
MCL0	691.3	1332.9	ev	177.8	355.6	mm

03/17/03 11:21 113.0 M Ver 2.0b-2.0b Job 30016600

MEL Before Survey Calibration

Tool Type: MRT-8A Sonde SN: MRS0128
Firmware Version: 2.02 Electronics SN: MRC8128

	CURRENT	2" NORMAL	1.5" INVERSE
OFFSET (0.0 +/- 100)	1.2	1.2	0.8
CALCULATED VALUE		28.00 OHMM	20.00 OHMM
CALIBRATION (2376.0 +/- 475)	2319.1	2310.1	2312.0
Calibration Constant		28.10	30.06

03/17/03 14:47 80.0 M Ver 2.0b-2.0b Job 30016600

MEL After Survey Check

Tool Type: MRT-8A Sonde SN: MRS0128
Firmware Version: 2.02 Electronics SN: MRC8128

	CURRENT BEFORE	CURRENT AFTER	2" NORMAL BEFORE	2" NORMAL AFTER	1.5" INVERSE BEFORE	1.5" INVERSE AFTER
OFFSET	1.2	1.3	1.2	1.1	0.8	0.7
CALIBRATION	2319.1	2310.5	2310.1	2308.2	2312.0	2308.0
CALCULATED VALUE			28.00	28.05	20.00	20.04 OHMM

03/17/03 01:48 0.0 M Ver 2.0b Job 30016600

Caliper Before Survey Calibration

Tool Type: MRT-CL Serial No:mrsb128

	Measured Small	Large	Units	Calibrated Small	Large	Units
MCL4	1405.3	3308.5	ev	177.8	355.6	mm

03/17/03 01:44 0.0 M Ver 2.0b-2.0b Job 30016600

Gamma Ray Before Survey Calibration

Tool Type: UGR-JA Serial No: UGRJ185
Calibrator No: RA-20S-384

Background	Calibrator	Standard	Units
124.8	629.4	140.0	API

Delta Counts Per Sec: 504.6 CPS/API = 3.604

O.H. Adaptor Head

Weight 18.0 kg
Length 0.74 m
Max. Diameter 9.8 cm

Total Stack Weight 877.5 kg in air
Total Stack Length 36.88 m

Crossover

Weight 6.8 kg
Length 0.27 m

Wireline Communications Cartridge

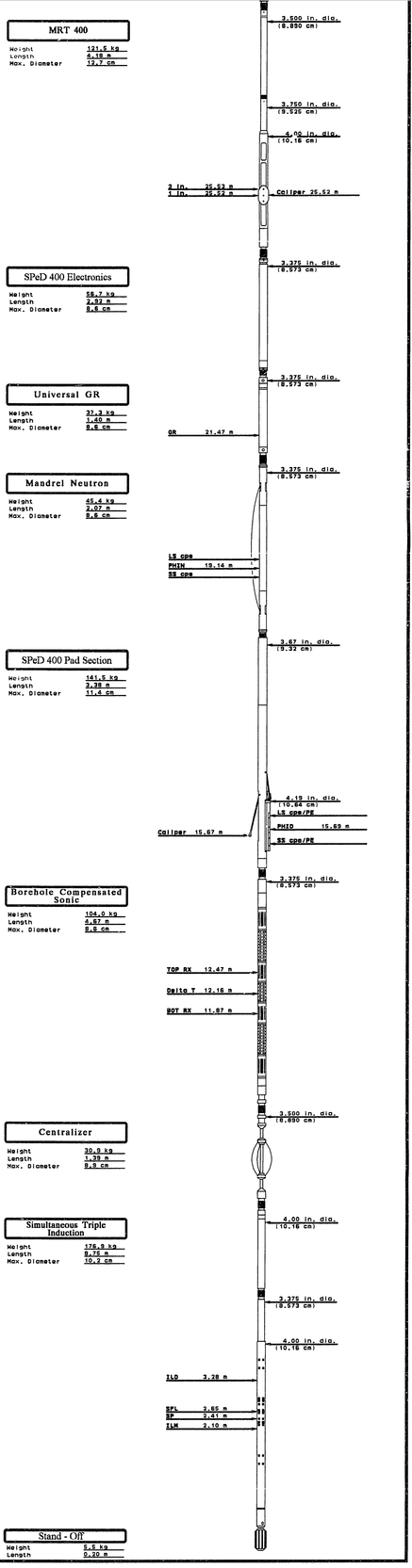
Weight 53.5 kg
Length 2.31 m
Max. Diameter 9.8 cm

2-Arm Caliper

Weight 78.4 kg
Length 2.40 m
Max. Diameter 10.2 cm



Caliper 29.45 m



COMPANY	PARAMOUNT RESOURCES LTD.
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
FIELD	MACKAY LAKES
PROVINCE	N.W.T.

COMPUTALOG
Wireline Services

COMPUTALOG

MICRO-RESISTIVITY LOG

Wireline Services

PROVINCE	NORTHWEST TERRITORIES
FIELD	MACKAY LAKES
WELL	PARAMOUNT ET AL MACKAY LAKES K-36
COMPANY	PARAMOUNT RESOURCES LTD.

COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES

PROVINCE NORTHWEST TERRITORIES

LSD ____ Sec. ____ Twp. ____ Rge. ____
Perm. Datum GROUND LEVEL Elev. 289.90 m
Log measured from KB , 4.80 m above Permanent Datum.

UWI 300K136020123150
Licence 1966

Other Services: SPeD/CNT/UGR/DAC HBC/UGR STI/UGR

ELEV. K.B. 294.70 m
G.L. 289.90 m
CBF ----

Date	MARCH 17, 2003		
Run No.	ONE		
Bot. Driller	800.0 m		
Bot. Logger	800.3 m		
First Reading	774.8 m		
Last Reading	300.0 m		
Meters Meas.	474.8 m		
Csg. Driller	201.0 m	219.1mm @ 35.7kg/m	
Csg. Logger	176.5 m		
Bit Size	200.0 mm		
Fluid Type	GEL CHEMICAL		
Dens. / Visc.	1180 / 82		
pH / Fluid Loss	9.0 / 9.0		
Sample Source	FLOWLINE		
Rm	3.2 @ 14 °C	@ °C	@ °C
Rmf	2.6 @ 16 °C	@ °C	@ °C
Rmc	3.5 @ 14 °C	@ °C	@ °C
Rm @ BHT	2.0 @ 34 °C	@ °C	@ °C
Max Rec. Temp	34 °C		
Spacing	N/A		
Operating Time	3.5 HRS		
Unit #	384		
Location	GRANDE PRAIRIE OH		
Recorded By	K. POSTON		
Witnessed By	G. MCNEILL		

ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFULL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES, OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

REMARKS Rig: PRECISION #117 Service Order # 30016600

Drilling Stopped 02:45/ 17 Circulation Stopped 07:30/ 17 Tool on Bottom 13:20/ 17 BHT 34 °C

- STI/HBC/SPeD/CNT/UGR/MRT/DAC LOGGED IN COMBINATION
- CASING FOUND AT 176.5m, CASING INTERVAL AT 225-238m, CASING INTERVAL AT 254-266m, POSSIBLE CASING STANDS SLID DOWN THE HOLE Prints: 2
- SLIGHT DIFFERENCE BETWEEN REPEAT AND MAIN PASS DUE TO PULLING TIGHT TWICE OFF BOTTOM ON THE MAIN PASS (ie SONIC SKIPS)

CHANGES IN MUD TYPE OR NEW SAMPLE			
Date / Sample No.			
Depth - Driller			
Type Fluid in Hole			
Dens. / Visc.			
pH / Water Loss			
Source of Sample			
Rm @ Meas. Temp.	@ °C		
Rmf @ Meas. Temp.	@ °C		
Rmc @ Meas. Temp.	@ °C		
Source Rmf / Rmc			
Rm @ BHT	@ °C		
Rmf @ BHT	@ °C		
Rmc @ BHT	@ °C		

SCALE CHANGES		
Type Log	Interval	Scale

EQUIPMENT DATA			
Run No.	Tool Type	Tool No.	Other
ONE	MRT-AA	128128	
	UGR-JB	195	RA-20S-384
	CAL-FA	143	Y-AXIS

REMARKS

MAIN PASS
1:240 SCALE
TD-300m

DEPTH SCALE: **1:240** VERSION: **2003.01.06.282**

MAIN PASS

30016600 STIMP

FINISH DEPTH: **0.0** Meters DIRECTION: **UP** DATE: TIME: MODE: **TRACE PLAYBACK**

Tension
10000 Pounds 0

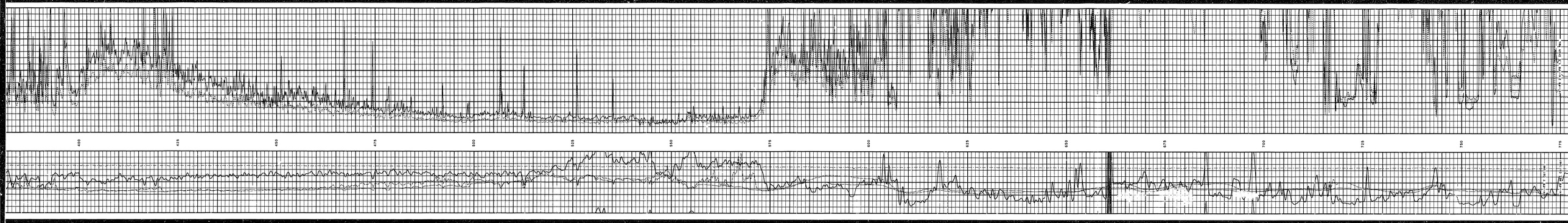
Y Caliper
125 Millimeters 375

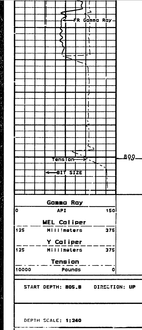
MEL Caliper
125 Millimeters 375

Gamma Ray
0 API 150

1.5" Resistivity
0.0 OhmMeters 40.0

2" Resistivity
0.0 OhmMeters 40.0


400
425
450
475
500
525
550
575
600
625
650
675
700
725
750
775



Gamma Ray — 0 API 150 — 2" Resistivity — 0.0 Ohmmeters 40.0
MEL Caliper — 125 Millimeters 375 — 1.5" Resistivity — 0.0 Ohmmeters 40.0
Y Caliper — 125 Millimeters 375
Tension — 10000 Pounds 0

START DEPTH: 805.8 DIRECTION: UP DATE: 03/17/2003 TIME:13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

REPEAT PASS
1:240 SCALE

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

REPEAT PASS

30016600 STIRP

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension — 10000 Pounds 0
Y Caliper — 125 Millimeters 375
MEL Caliper — 125 Millimeters 375
Gamma Ray — 0 API 150
1.5" Resistivity — 0.0 Ohmmeters 40.0
2" Resistivity — 0.0 Ohmmeters 40.0

725 750 775 800

Gamma Ray — 0 API 150 — 2" Resistivity — 0.0 Ohmmeters 40.0
MEL Caliper — 125 Millimeters 375 — 1.5" Resistivity — 0.0 Ohmmeters 40.0
Y Caliper — 125 Millimeters 375
Tension — 10000 Pounds 0

START DEPTH: 805.8 DIRECTION: UP DATE: 03/17/2003 TIME:13:37 MODE: TRACE PLAYBACK

30016600 STIRP

REPEAT PASS

DEPTH SCALE: 1:240 VERSION: 2003.01.06.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.30	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

REMARKS

MUDLOG
1:600 SCALE

DEPTH SCALE: 1:600 VERSION: 2003.01.06.282

MUDLOG

30016600 LOGDOWN

FINISH DEPTH: 0.0 Meters DIRECTION: UP DATE: TIME: MODE: TRACE PLAYBACK

Tension — 10000 Pounds 0
1.5" Resistivity — 0.0 Ohmmeters 4.0
Gamma Ray — 0 API 150
2" Resistivity — 0.0 Ohmmeters 4.0

675 700 725 750 775

Gamma Ray — 0 API 150 — 2" Resistivity — 0.0 Ohmmeters 4.0
Tension — 10000 Pounds 0 — 1.5" Resistivity — 0.0 Ohmmeters 4.0

START DEPTH: 784.1 DIRECTION: UP DATE: 03/17/2003 TIME:13:33 MODE: TRACE PLAYBACK

30016600 LOGDOWN

MUDLOG

DEPTH SCALE: 1:600 VERSION: 2003.01.06.282

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	800.00	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade
DFT	Mean Annual Surf Temp	6.0	DegreesCentigrade

03/17/03 01:44 0.0 M Ver 2.0b Job 30016600

Caliper Before Survey Calibration

Tool Type: CAL-FA Serial No:calf142

	Measured Small	Measured Large	Units	Calibrated Small	Calibrated Large	Units
MCL0	691.3	1332.9	mv	177.8	355.6	mm

03/17/03 11:21 113.0 M Ver 3.08-2.0b Job 30016600

MEL Before Survey Calibration

Tool Type:	MRT-GA	Sonde SN:	MRGB128
Firmware Version:	2.02	Electronics SN:	MRCB128

	CURRENT	2" NORMAL	1.5" INVERSE
	1.3	16.0	24.0
CALCULATED VALUE	38.10	38.10 OHMM	38.10 OHMM
CALIBRATION (1227E.0 +/- 475)	2319.1	2310.1	2313.0
		2310.1	2313.0
Calibration Constant		38.10	38.08

03/17/03 14:47 80.0 M Ver 3.08-3.0b Job 30016600

MEL After Survey Check

Tool Type:	MRT-GA	Sonde SN:	MRGB128
Firmware Version:	2.03	Electronics SN:	MRCB128

	CURRENT	2" NORMAL		1.5" INVERSE	
	BEFORE	AFTER	BEFORE	AFTER	
	4.5	4.5	16.0	16.0	
OFFSET	2319.1	2310.0	2310.1	2308.1	2313.0 2308.0
CALIBRATION			38.08	38.05	38.06 38.06
CALCULATED VALUE					

03/17/03 01:48 0.0 M Ver 3.0b Job 30016600

Caliper Before Survey Calibration

Tool Type: MRT-CL Serial No:mrcb128

	Measured Small	Measured Large	Units	Calibrated Small	Calibrated Large	Units
MCL4	1405.3	3306.5	mv	177.8	355.6	mm

03/17/03 01:44 0.0 M Ver 2.0b-2.0b Job 30016600

Gamma Ray Before Survey Calibration

Tool Type: UGR-JA Serial No: UGRJ195
Calibrator No: BA-205-384

Background	Calibrator	Standard	Units
136.8	629.4	140.0	API

Delta Counts Per Sec: 504.6 CPS/API = 3.604

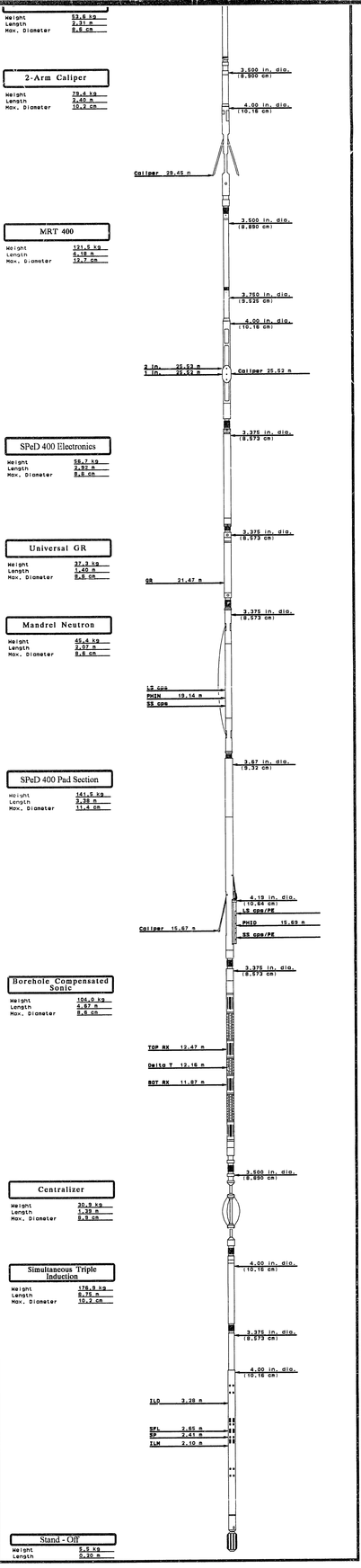
O.H. Adaptor Head

Weight	18.0 kg
Length	0.76 m
Max. Diameter	0.17 m
Total Stack Weight	87.5 kg in air
Total Stack Length	34.93 m

Crossover

Weight	8.8 kg
Length	0.27 m





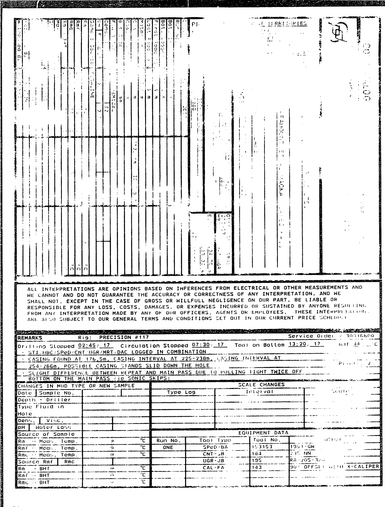
COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES PROVINCE N.W.T.

COMPUTALOG
Wireline Services

MISCELLANEOUS



ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS AND WE CANNOT AND DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION, AND WE SHALL NOT, EXCEPT IN THE CASE OF GROSS OR WILLFUL NEGLIGENCE ON OUR PART, BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COSTS, DAMAGES OR EXPENSES INCURRED OR SUSTAINED BY ANYONE RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR OFFICERS, AGENTS OR EMPLOYEES. THESE INTERPRETATIONS ARE ALSO SUBJECT TO OUR GENERAL TERMS AND CONDITIONS SET OUT IN OUR CURRENT PRICE SCHEDULE.

REMARKS Rig: PRECISION #117 Service Order: 9018609

Drilling Stopped 01:45 17 Circulation Stopped 07:30 17 Tool on Bottom 13:20 17 Logged @ C

STE HNS SPHD CNT HGR MST DAC LOGGED IN COMBINATION

CASING FOUND AT 176.5m CASING INTERVAL AT 221.238m LOGGING INTERVAL AT

224.268m POSSIBLE CASING HANGS SLID DOWN THE HOLE

CASING DIFFERENCE BETWEEN MEASURED AND LOGGED DEPTH

CASING ON THE MAIN PASS AND SHORTENED

CONNECT IN MUD TYPE OF NEW SAMPLE

Date	Sample No.
Depth	Driller
Type Fluid in Hole	
Density	Visc.
pH	Fluid Loss
Source of Sample	
R_m @ Meas. Temp	@ °C
R_mf @ Meas. Temp	@ °C
R_mc @ Meas. Temp	@ °C
Source of R_mf / R_mc	
R_m @ BHT	°C
R_mf @ BHT	°C
R_mc @ BHT	°C

Type Log

SCALE CHANGES

Interval	Scale

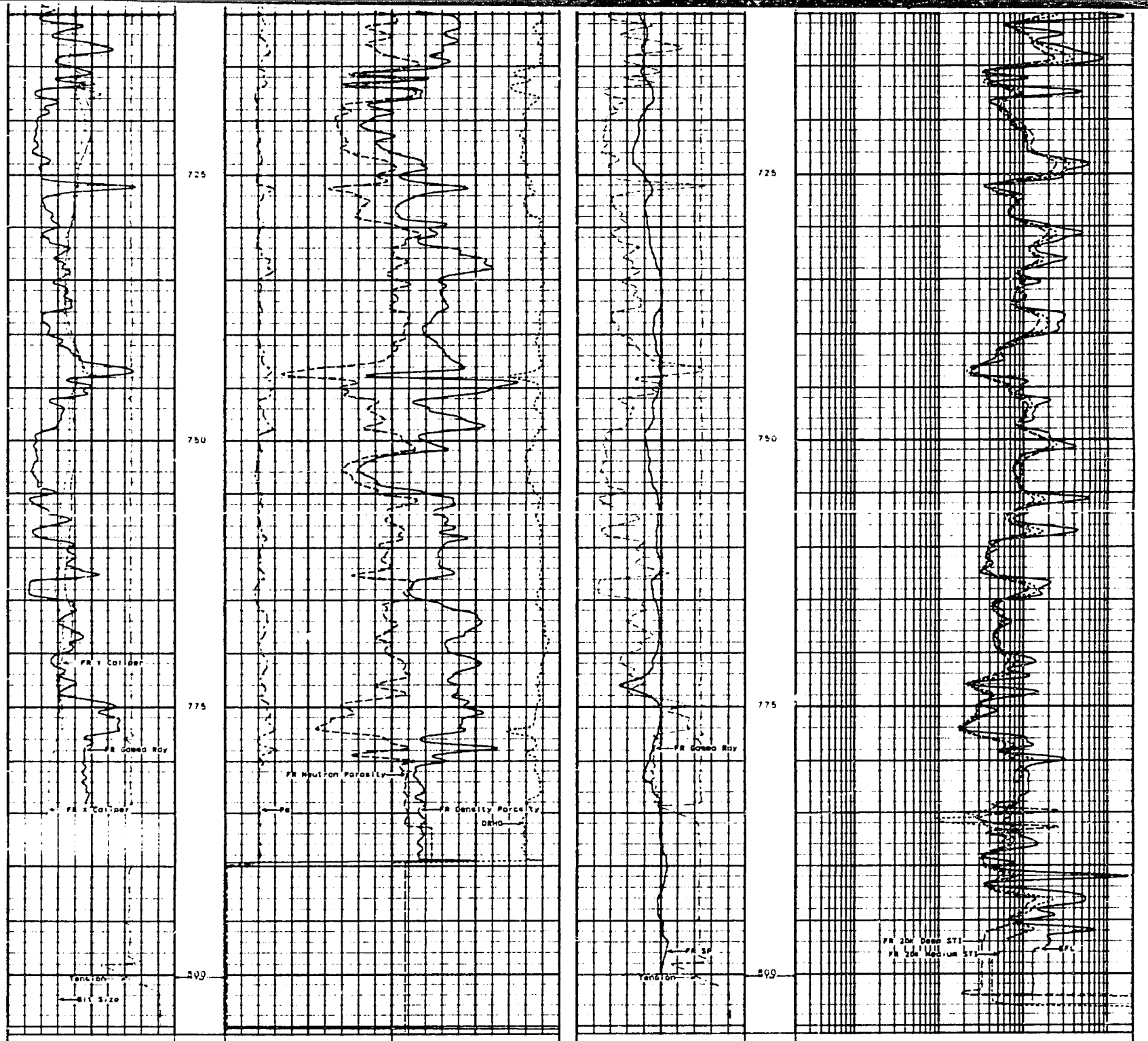
Run No.	Tool Type	Tool No.
ONE	SPHD-BA	1353
	CNT-JA	183
	HGR-JA	1305
	CAL-FA	183

EQUIPMENT DATA

Rm	Rmf	Rmc
Ohm-m	Ohm-m	Ohm-m
Time Since Circ.	Max. Rec. Temp.	Equip. Location
hr	°C	

Recorded By: OFFICE

Witnessed By: CALIPER



X Caliper		
125	Millimeters	375
Gamma Ray		
0	API	150
Y Caliper		
125	Millimeters	375
Tension		
10000	Pounds	0

PhotoElectric Effect		Density Correction
0.0	10.0	450 Kilograms/Cu.Meter -50
Den. Porosity (SS)		
45.0	Percent	-15.0
Neut. Porosity (SS)		
45.0	Percent	-15.0

SP		
-75	Millivolts	75
Gamma Ray		
0	API	150
Tension		
10000	Pounds	0

20K Deep STI		
0.20	OhmMeters	2000.00
20K Medium STI		
0.20	OhmMeters	2000.00
SFL Resistivity		
0.20	OhmMeters	2000.00

START DEPTH: 806.8 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:348 VERSION: 2003.01.00.203

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	806.38	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade
TACC	Accumulation Time	100	Seconds
BARI	Barite Correction	OFF	
MW	Mud Weight	1150.0	Kilograms/Cu.Meter
MGAI	K Factor-MGN	1.015	
BHS	Open/Cased Hole	Open	
HDCS	Bitsize/Calp Sel-CNT	Caliper	
MTLS	Tool Type-CNT	CNT-S	
MCBT	Constant Temp-CNT	21.0	DegreesCentigrade
GCOR	Cnt Environ.correction	OFF	
MCAL	LIS Caliper Name-CNT	X Caliper	
SCAL	Density BH Sleo Source	X Caliper	

START DEPTH: 806.8 DIRECTION: UP DATE: 03/17/2003 TIME: 13:46 MODE: TRACE PLAYBACK

30016600 STIMP

MAIN PASS

DEPTH SCALE: 1:348 VERSION: 2003.01.00.203

SYSTEM CONSTANTS

NAME	DESCRIPTION	VALUE	UNITS
TDL	TD-Logger	806.38	Meters
BS	Bit Size	200.0	Millimeters
BHT	Bottom Hole Temp	34.0	DegreesCentigrade

COMPANY PARAMOUNT RESOURCES LTD.

WELL PARAMOUNT ET AL MACKAY LAKES K-36

FIELD MACKAY LAKES PROVINCE N.W.T.

COMPUTALOG

Wireline Services

Precision Drilling

BEST
COPY
ON FILE

TOUR SHEETS

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	

(1) Daily Walk Around Inspection
(2) Detailed Inspection Weekly (Using Check List)
(3) H2S Signs Posted(If Required)
(4) Well Licence & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Preformed
(7) Visually Inspect BOP's - Flarelines & Degasser Lines

	Opr.	R.P.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well Licence & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2003 | MONTH 3 | DAY 21

RIG NO.: 117

FUEL @ 09:00 HRS.

RIG | BOILER

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER	219.1	205.7	35.70	IPSCO	K-55	17	201.69	0.79	200.90

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE
CHANGE SCREENS | YES | NO
TOP 110 | MIDDLE 0 | BOTTOM 70
TOP | MIDDLE | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	220
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
	OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING					
	MORN	8.00																									8.00
	DAY																										
	EVE																										
	TOTAL	8.00																									8.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
	KELLY DOWN		m
	[illegible]AL		m
	WT. OF D.C.		1000 daN
	WT. OF STRING		1000 daN

DRILLERS SIGNATURE

BIT RECORD

BIT NO.											
SIZE (mm)											
IADC CODE											
MFG.											
Type											
SERIAL NO.											
JETS (mm)											
DEPTH IN (m)											
DEPTH OUT (m)											
TOTAL METER											
TOTAL HOURS											
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.		

DRAG daN
TORQUE
FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CIR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED: @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg

MACP
MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	800	8.00	1	COMPLETE TEAR OUT, PREPARE RIG FOR RACKING,
				& MOVE TO WHITECOURT.
				RIG RELEASED @ 0800HRS, MARCH 21 - 2003

Notes:

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kill's Checked		WB

YEAR 2003 | MONTH 3 | DAY 20

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 2400 | BOILER 1100

WEATHER: TEMPERATURE -4 | CONDITIONS LITE SNOW | WIND DIRECTION SOUTH | ROAD CONDITION ICE

SAFETY TOPIC: NIPPLE DOWN BOP

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | x | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					2.00	2.50						0.75	2.50								0.25						8.00
DAY						2.75						0.25	4.75								0.25						8.00
EVE	6.50					0.50							1.00														8.00
TOTAL	6.50				2.00	5.75						1.00	8.25								0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. OF B.H.A.			1000 daN
WT. OF STRING			1000 daN
DRILLERS SIGNATURE			

BIT RECORD

BIT NO.										
SIZE (mm)										
IADC CODE										
MFG.										
Type										
SERIAL NO.										
JETS (mm)										
DEPTH IN (m)										
DEPTH OUT (m)										
TOTAL METER										
TOTAL HOURS										
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE/mm	OTHER	REASON	R.O.P.	

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm³ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1700	1.00	13	WAIT ON CEMENT
1700	1730	0.50	6	RUN IN, TAG PLUG #2 @ 26.8 MKB, LAY DOWN DRILL PIPE
1730	2400	6.50	1	NIPPLE DOWN BOP, TEAR OUT FLAIR & DEGASSER LINES,
				CLEAN MUD TANKS, TEAR OUT RIG.

Notes: NO REPORTED INJURIES

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.ss.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003	MONTH 3	DAY 20	
RIG NO.: 117			
FUEL @ 08:00 HRS.			
RIG 2400	BOILER 1100		
WEATHER: TEMPERATURE -4			
CONDITIONS LITE SNOW			
WIND DIRECTION SOUTH			
ROAD CONDITION ICE			

SAFETY TOPIC: RUNNING PLUGS

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
4	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 TYPE SWACO TYPE

CHANGE SCREENS: YES [ ] x NO

TOP 110 TOP

MIDDLE 0 MIDDLE

BOTTOM 70 BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					2.00	2.50						0.75	2.50								0.25						8.00
DAY						2.75						0.25	4.75								0.25						8.00
EVE	6.50					0.50							1.00														8.00
TOTAL	6.50				2.00	5.75						1.00	8.25								0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
17	DRILLPIPE	STANDS	321.30 m
1	DRILLPIPE	SINGLES	9.40 m
	KELLY DOWN		m
	TOTAL		330.70 m
	WT. OF D.C.		1000 dan
	WT. OF STRING	1	1000 dan
	DRILLERS SIGNATURE	RICK KNUPP	

BIT RECORD

BIT NO.									
SIZE (mm)									
IADC CODE									
MFG.									
Type									
SERIAL NO.									
JETS (mm)									
DEPTH IN (m)									
DEPTH OUT (m)									
TOTAL METER									
TOTAL HOURS									
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG dan	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	800	1200	1400
DENSITY kg/m3	1180	1180	1180
FUNNEL VIS s/l	80	80	80
W.L. cm³/ FILCK	9.0	9.0	9.0
PH	9.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
1400	0.0	80	0.0	

REDUCED PUMP SPEED @ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP	2692
MAX HOOKLOAD	10

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	845	0.75	13	WAIT ON CEMENT
845	930	0.75	6	TRIP RIH TO FEAL PLUG #1 AT 590 MKB
930	1100	1.50	6	TRIP LAY DOWN 49 SINGLES
1100	1115	0.25	21	SAFETY MTG. CEMENTING
1115	1130	0.25	12	CEMENT PLUG 2 WITH 11 TONNE OF 0-1-0 G WITH .5%CD-31,2%A-11
1130	1200	0.50	6	TRIP LAY DOWN PIPE
1200	1600	4.00	13	WAIT ON CEMENT
1600				
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK BRAKE LINKAGE,TONGS, AND TONG LINES
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes: NO REPORTED INJURIES

ON PLUG #2 WE GOT CEMENT TO SURFACE.

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	CEMENT

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 20

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 2400 | BOILER 1100

WEATHER: TEMPERATURE -4 | CONDITIONS LITE SNOW | WIND DIRECTION SOUTH | ROAD CONDITION ICE

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC , DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | x | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					2.00	2.50						0.75	2.50								0.25						8.00
DAY						2.75						0.25	4.75								0.25						8.00
EVE	6.50					0.50							1.00														8.00
TOTAL	6.50				2.00	5.75						1.00	8.25								0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
17	DRILLPIPE	STANDS	321.30 m
1	DRILLPIPE	SINGLES	9.40 m
KELLY DOWN			m
TOTAL			330.70 m
WT. OF D.C.			1000 dan
WT. OF STRING	1		1000 dan
DRILLERS SIGNATURE			

BIT RECORD

BIT NO.			INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.
SIZE (mm)											
IADC CODE											
MFG.											
Type											
SERIAL NO.											
JETS (mm)											
DEPTH IN (m)											
DEPTH OUT (m)											
TOTAL METER											
TOTAL HOURS											
DRAG dan											
TORQUE											
FILL m											

MUD RECORD

WATER BASED [ ] OIL BASED [ ]

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	0.0		0.0	

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	130	1.50	6	TRIPS
130	300	1.50	5	COND MUD & CIRC
300	315	0.25	21	SAFETY MTG.
315	400	0.75	12	PUMP PLUG #1 795-542 MKB 10.5 TONNE OF 0-1-0 G WITH .5% CD-31,.5% A-11
400	500	1.00	6	TRIPS
500	530	0.50	5	REVERSE CIRCULATE 3.75M3
530	800	2.50	13	WAIT ON CEMENT LAY DOWN COLLERS
800				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS BRAKELINKAGE
FUNTION HYD CHOKE CROWN SAVER
NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 19

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 3700 | BOILER 1716

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: PICK UP PIPE

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
[illegible]	62.45		70	155	4.5 XH	6			
[illegible]	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN						2.50										4.25						1.25					8.00
DAY			0.50			1.75	0.25									3.50						2.00					8.00
EVE					2.00	5.75													0.25								8.00
TOTAL			0.50		2.00	10.00	0.25									7.75			0.25			3.25					24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
[illegible]			m
WT. OF D.C.			1000 daN
WT. OF STRING			1000 daN

DRILLERS SIGNATURE | DENNIS LIHEUREUX

BIT RECORD

BIT NO.										
SIZE (mm)										
IADC CODE										
MFG.										
Type										
SERIAL NO.										
JETS (mm)										
DEPTH IN (m)										
DEPTH OUT (m)										
TOTAL METER										
TOTAL HOURS										
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.	

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	2000		
DENSITY kg/m3	1180		
FUNNEL VIS s/l	60		
W.L cm/ FILCK	9.5		
PH	9.0		

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
0.00				

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	0.0		0.0	

REDUCED PUMP SPEED

@ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP | 2692

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1700	1.00	6	TRIP 245,127, AND OUT
1700	1800	1.00	6	TRIP RIH
1800	1930	1.50	6	TRIP POOH FLOW CHECK 245,127, AND OUT
1930	2130	2.00	5	COND MUD & CIRC WAIT ON FISH TOOLS
2130	2200	0.50	6	TRIPS
2200	2215	0.25	19	FISHING
2215	2400	1.75	6	TRIPS TAG @280

Notes: CHEAK TONGS PINS LINES DEAD LINE + CLAMPS BRAKELINKAGE

FUNTION BLINDRAMS 2 SEC HCR 2 SEC CROW SAVER CHOKE

NO REPORTED INJUREIS BLOW BOLE, ONCE

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	Rig
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Slick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003	MONTH 3	DAY 19	
RIG NO.: 117			
FUEL @ 08:00 HRS.			
RIG 3700	BOILER 1716		
WEATHER	TEMPERATURE		
	CONDITIONS		
	WIND DIRECTION		
	ROAD CONDITION		

SAFETY TOPIC: TRIPPING

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
4	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS: YES ☐ NO ☐

TOP	110	TOP	
MIDDLE	0	MIDDLE	
BOTTOM	70	BOTTOM	

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	TRIPPING	DIRECTIONAL WORK	SAFETY MEETING						
MORN						2.50										4.25						1.25					8.00
DAY			0.50			1.75	0.25									3.50						2.00					8.00
EVE					2.00	5.75													0.25								8.00
TOTAL			0.50		2.00	10.00	0.25									7.75			0.25			3.25					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB		0.40 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
14	DRILLPIPE	STANDS	264.93 m
1	DRILLPIPE	SINGLES	9.45 m
	KELLY DOWN		5.00 m
	TOTAL		280.03 m
	WT. OF D.C.		0 1000 dan
	WT. OF STRING		9 1000 dan
	DRILLERS SIGNATURE		RICK KNUPP

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG dan	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED: X OIL BASED: ☐

TIME	800	1200	1400
DENSITY kg/m3	1180	1180	1180
FUNNEL VIS s/l	80	80	80
W.L. cm/ FILCK	9.0	9.0	9.0
PH	9.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
280.00	280.00	R	40	2

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
1450	0.0	80	0.0	

REDUCED PUMP SPEED

440 @ 60 @ 255

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP	2692
MAX HOOKLOAD	9

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1130	3.50	16	DRLL STEM TEST READ RECORDERS,LAY DOWN TOOLS
1130	1215	0.75	6	TRIP RIH BRIDGED OFF 280.5 METERS FEELS LIKE THE CASING.
1215	1230	0.25	7	RIG SERVICE FUNCTION BLIND RAMS 2 SEC.
1230	1430	2.00	22	WAIT ON ORDERS
1430	1530	1.00	6	TRIP POOH FLOW CHECK 245,127, AND OUT
1530				RIH WITH BIT
1530	1600	0.50	3	REAMING
1600				
				TRIP RECORDS DIFF. .00
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK BRAKE LINKAGE,TONGS,AND TONG LINES
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes:

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 19

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 3700 | BOILER 1716

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: TESTING

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
1	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRRIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN						2.50										4.25						1.25					8.00
DAY			0.50			1.75	0.25									3.50						2.00					8.00
EVE					2.00	5.75													0.25								8.00
TOTAL			0.50		2.00	10.00	0.25									7.75			0.25			3.25					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	
1	DRILL STEM		51.50 m
10	D.C.		94.02 m
1	STAB		0.46 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
30	DRILLPIPE	STANDS	568.95 m
1	DRILLPIPE	SINGLES	9.70 m
KELLY DOWN			m
TOTAL			724.63 m
WT. OF D.C.			10 1000 daN
WT. OF STRING			21 1000 daN

DRILLERS SIGNATURE | DENNIS LIHEUREUX

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED [X] | OIL BASED [ ]

TIME	400		
DENSITY kg/m3	1180		
FUNNEL VIS s/l	80		
W.L. cm/ FILCK	9.0		
PH	9.0		

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2692

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	315	3.25	16	DRLL STEM TEST
315	430	1.25	22	WAIT ON ORDERS
430	530	1.00	16	DRLL STEM TEST
530	800	2.50	6	TRIPS
800				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS

FUNTION HCR 2SEC CHOKE CROWN SAVER

NO REPORTED INJUREIS VISUAL INSECTION OF FLAIR + DEGASER LINES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

WEATHER

YEAR 2003	MONTH 3
DAY 18	RIG NO.: 117
FUEL @ 08:00 HRS.	RIG 4300
BOILER 2905	TEMPERATURE -6
CONDITIONS CLEAR	WIND DIRECTION CALM
ROAD CONDITION ICE	SAFETY TOPIC: TRIPPING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS: YES [ ] x NO [ ]

TOP	110	TOP	
MIDDLE	0	MIDDLE	
BOTTOM	70	BOTTOM	

RENTALS / SERVICES	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	W.O.ORDER					
MORN							0.25									7.75											8.00
DAY						3.00	0.25									3.75						1.00					8.00
EVE						1.50										4.50					0.25	1.75					8.00
TOTAL						4.50	0.50									16.00					0.25	2.75					24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	
1	DRILL STEM		51.50 m
10	D.C.		94.02 m
1	FLOT SUB		0.46 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
30	DRILLPIPE	STANDS	568.95 m
1	DRILLPIPE	SINGLES	9.70 m
	KELLY DOWN		m
	TOTAL		724.63 m
	W. O.C.		10 1000 dan
	WT. OF STRING		21 1000 dan

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG dan	
TORQUE	
FILL m	

DRILLERS SIGNATURE: DENNIS LIHEUREUX

MUD RECORD

WATER BASED [ ] OIL BASED [ ]

TIME	2200		
DENSITY kg/m3	1180		
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@ [ ] @ [ ]

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP: 2692

MAX HOOKLOAD:

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1745	1.75	22	WAIT ON ORDERS
1745	1945	2.00	16	DRLL STEM TEST MAKE UP TOOLS
1945	2115	1.50	6	TRIPS
2115	2130	0.25	21	SAFETY MTG. FLOOR SAFETY + H2S
2130	2400	2.50	16	DRLL STEM TEST

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS BLOW BOLER ONCE
FUNTION HCR 2SEC CHOKE CROWN SAVER
NO REPORTED INJUREIS

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 18

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 4300 | BOILER 2905

WEATHER: TEMPERATURE -6 | CONDITIONS CLEAR | WIND DIRECTION CALM | ROAD CONDITION ICE

SAFETY TOPIC: DST

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | x | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	W.O.ORDER					
MORN							0.25									7.75											8.00
DAY						3.00	0.25									3.75						1.00					8.00
EVE						1.50										4.50					0.25	1.75					8.00
TOTAL						4.50	0.50									16.00					0.25	2.75					24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	m
1	DRILL STEM		39.42 m
10	D.C.		93.23 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
31	DRILLPIPE	STANDS	588.24 m
	DRILLPIPE	SINGLES	m
	KELLY DOWN		m
	TOTAL		720.89 m
	WT. OF D.C.	10	1000 dan
	WT. OF STRING	22	1000 dan

DRILLERS SIGNATURE | RICK KNUPP

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	720.00
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm	OTHER	REASON	R.O.P.

DRAG dan 2000 | TORQUE 0 | FILL m 0.00

MUD RECORD

WATER BASED [X] | OIL BASED [ ]

TIME	800	1200	1400
DENSITY kg/m3	1180	1180	1180
FUNNEL VIS s/l	80	80	80
W.L. cm/ FILCK	9.0	9.0	9.0
PH	9.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	0.0		0.0	

REDUCED PUMP SPEED

@ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			
HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP 2692

MAX HOOKLOAD 40

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1045	2.75	16	DRLL STEM TEST 2 OPEN 1 HR. CLOSE 2.50
1045	1345	3.00	6	TRIP POOH720,635,400,187, AND OUT
1345	1445	1.00	16	DRLL STEM TEST RECOVER RECORDERS
1445	1500	0.25	7	RIG SERVICE FUNCTION BLIND RAMS 2 SEC.
1500	1600	1.00	22	WAIT ON ORDERS
				TRIP RECORDS
				CAL. 7.64
				MEAS. 7.74
				DIFF. .10
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK BRAKE LINKAGE,TONGS, AND TONG LINES
				NO REPORTED INJURIES

Notes:

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR.: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licensee & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003	MONTH 3
DAY 18	
RIG NO.: 117	
FUEL @ 08:00 HRS.	
RIG 4300	BOILER 2905

WEATHER

TEMPERATURE	-6
CONDITIONS	CLEAR
WIND DIRECTION	CALM
ROAD CONDITION	ICE

SAFETY TOPIC: H2S

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	18			

SHALE SHAKER(S): NO. 1 TYPE SWACO; TYPE; CHANGE SCREENS: YES x NO; TOP 110; MIDDLE 0; BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	W.O.ORDER					
MORN							0.25									7.75											8.00
DAY						3.00	0.25									3.75						1.00					8.00
EVE						1.50										4.50					0.25	1.75					8.00
TOTAL						4.50	0.50									16.00					0.25	2.75					24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	m
1	DRILL STEM		39.42 m
10	D.C.		93.23 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
31	DRILLPIPE	STANDS	588.24 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			720.89 m
WT. OF D.C.		10	1000 dan
WT. OF STRING		22	1000 dan

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED: X OIL BASED:

TIME			
DENSITY kg/m3	1180		
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	0.0		0.0	

REDUCED PUMP SPEED

@ ____ @ ____

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2692

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	400	4.00	16	DRLL STEM TEST
400	415	0.25	7	RIG SERVICE
415	800	3.75	16	DRLL STEM TEST #2 TEST
800				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS CROWN SAVER

BLOW BOLER ONCE NO REPORTED INJURIES

FUNTION CHOKE

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.S.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licenses & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checkd		WB
(5) Motor Kills Checkd		WB

YEAR 2003 | MONTH 3 | DAY 17

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 5100 | BOILER 3300

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: TESTING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		2.75			2.00	3.00	0.25																				8.00
DAY						2.75	0.25				5.00																8.00
EVE						1.75					0.50					5.25					0.50						8.00
TOTAL		2.75			2.00	7.50	0.50				5.50					5.25					0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.	m
1	DRILL STEM		39.42 m
10	D.C.		74.54 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
32	DRILLPIPE	STANDS	606.94 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL		720.90	m
WT. OF D.C.		10	1000 daN
WT. OF STRING		22	1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED ☐ OIL BASED ☐

TIME	2300		
DENSITY kg/m3	1180		
FUNNEL VIS s/l	80		
W.L. cm/ FILCK	9.0		
PH	9.0		

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	0.0		0.0	

REDUCED PUMP SPEED: @ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP: 2692

MAX HOOKLOAD:

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1630	0.50	11	WIRE LINE LOGS
1630	1715	0.75	6	TRIP RUN IN 3 STANDS DRILL COLLARS LAY DOWN 5 DC
1715	1730	0.25	21	SAFETY MTG. DST
1730	2100	3.50	16	DRLL STEM TEST PICK UP TOOLS
2100	2200	1.00	6	RIH TEST #1
2200	2215	0.25	21	SAFETY MTG.
2215	2400	1.75	16	DRLL STEM TEST
2400				

Notes: CHECK TONGS PINS LINES CROWN SAVER DEADLINE + CLAMPS

FUNTION BLINDRAMS 2 SEC HCR 2 SEC BLOW BOLER ONCE

NOREPORTED INJURIES

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Chncklst(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 17

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 5100 | BOILER 3300

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: LOGGING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.80		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	R/DUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		2.75			2.00	3.00	0.25																				8.00
DAY						2.75	0.25				5.00																8.00
EVE						1.75					0.50					5.25					0.50						8.00
TOTAL		2.75			2.00	7.50	0.50				5.50					5.25					0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	
1	BIT SUB		0.25 m
1	D.C.		0.51 m
1	STAB		9.54 m
7	D.C.		1.88 m
1	JAR		65.04 m
8	D.C.		4.82 m
			74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
33	DRILLPIPE	STANDS	625.62 m
1	DRILLPIPE	SINGLES	9.60 m
KELLY DOWN			8.16 m
TOTAL			800.00 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			34 1000 daN
DRILLERS SIGNATURE			RICK KNUPP

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	13 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	800.00
TOTAL METER	148.00
TOTAL HOURS	50.25
DRAG daN	
TORQUE	
FILL m	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE/mm	OTHER	REASON	R.O.P.

MUD RECORD

	WATER BASED X	OIL BASED	
TIME	800	1100	1400
DENSITY kg/m3	1180	1180	1180
FUNNEL VIS s/l	80	80	80
W.L. cm/ FILCK	8.5	8.5	8.5
PH	9.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
793.00	1.50	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
7700	0.0	100	0.0	

REDUCED PUMP SPEED: 3350 @ 60 @ 800

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HRS. RUN	BOILER PH	STACK deg
8.00	10.0	220

MACP 2692

MAX HOOKLOAD 34

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1045	2.75	6	TRIP FLOW CHECK 793,760,400,184,AND OUT
1045	1100	0.25	7	RIG SERVICE FUNCTION BLIND RAMS 2 SEC.
1100	1600	5.00	11	WIRE LINE LOGS
1600				
				TRIP RECORDS
				CAL. 5.00
				MEAS. 5.07
				DIFF. .07
				FUNCTION CROWNSAVER ANDCHOKE CONTROL
				CHECK BRAKE LINKAGE,TONGS, AND TONG LINES
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes:

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R/R
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 17

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 5100 | BOILER 3300

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: TRIPPING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
14	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		2.75			2.00	3.00	0.25																				8.00
DAY						2.75	0.25				5.00																8.00
EVE						1.75					0.50					5.25					0.50						8.00
TOTAL		2.75			2.00	7.50	0.50				5.50					5.25					0.50						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB		0.51 m
1	D.C.		9.54 m
1	STAB		1.88 m
7	D.C.		65.04 m
1	JAR		4.82 m
8	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
33	DRILLPIPE	STANDS	625.62 m
1	DRILLPIPE	SINGLES	9.60 m
KELLY DOWN			8.16 m
TOTAL			800.00 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			34 1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	3 X 11.1
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	148.00
TOTAL HOURS	50.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN 0

TORQUE 0

FILL m 0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	130	300	700
DENSITY kg/m3	1160	1180	1180
FUNNEL VIS s/l	70	80	82
W.L. cm/ FR.CK	9.0	9.0	9.0
PH	9.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	18	SX
BARITE	10	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
793.00	800.00	D	100	14

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
7700	152.0	100	0.0	

REDUCED PUMP SPEED: 3350 @ 60 @ 800

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2692

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	245	2.75	2	DRILL FR 793
245	300	0.25	7	RIG SERVICE
300	400	1.00	5	COND MUD & CIRC
400	630	2.50	6	WIPPER TRIP FLOW/ 800 760 400 184 OUT
630	730	1.00	5	COND MUD & CIRC STRAP 635.24 TALY 635.22
730	800	0.50	6	HOIST TO LOG
800				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS CROWN SAVER

FUNTION HYD &SEC HCR 2 SEC CHOKE BLOW BOLER ONCE

NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL. McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	CASTIC

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2 \ Signs Posted(If Required)	BN	WB
(4) Well Licensee & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (on shrcrew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kill Checked		WB

YEAR 2003 | MONTH 3 | DAY 16

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7300 | BOILER 4884

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	W.ON PUMP					
MORN		7.75					0.25																				8.00
DAY		7.50					0.25			0.25																	8.00
EVE		7.00																				1.00					8.00
TOTAL		22.25					0.50			0.25												1.00					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.		O.D.mm		
1	BIT/ MILLS		0.25	m
1	BIT SUB		0.51	m
1	D.C.		9.54	m
1	STAB		1.88	m
7	D.C.		65.04	m
1	JAR		4.82	m
8	D.C.		74.58	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
33	DRILLPIPE	STANDS	625.62	m
	DRILLPIPE	SINGLES		m
KELLY DOWN			11.40	m
TOTAL			793.64	m
WT. OF D.C.			16	1000 dan
WT. OF STRING			34	1000 dan

DRILLERS SIGNATURE

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	13 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	122.00
TOTAL HOURS	47.50

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE/mm	OTHER	REASON	R.O.P.

DRAG dan	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED: X | OIL BASED:

TIME	1930	2300
DENSITY kg/m3	1140	1140
FUNNEL VIS s/l	40	43
W.L. cm/ FILCK	9.0	9.0
PH	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	15	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
774.00	793.00	D	100	14

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
7600	152.0	100	0.0	

REDUCED PUMP SPEED: 2600 @ 60 @ 793

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
8.00	1140	1130	1310

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2770

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1700	1.00	2	DRILL 774 TO 776
1700	1800	1.00	22	CLEAN SUCTION ON PUMP
1800	2400	6.00	2	DRILL 776 TO 793

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS CROWN SAVER

FUNTION HCR 2 SEC CHOKE BLOW BOLER ONCE

NO REPORTED INJURIES

DAY SHIFT

| | | |

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (Using Check List)
(3) H2S Signs Posted(If Required)
(4) Well Licenses & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOP's - Flarelines & Degasser Lines

Opr.	R.M.
BN	WB
BN	WB
BN	WB
BN	WB
BN	WB
BN	WB
BN	WB

YEAR 2003 | MONTH 3 | DAY 16

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7300 | BOILER 4884

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

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: SAFETY GLASSES

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
4	82.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
C PER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	W.ON PUMP					
MORN		7.75					0.25																				8.00
DAY		7.50					0.25			0.25																	8.00
EVE		7.00																				1.00					8.00
TOTAL		22.25					0.50			0.25												1.00					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	
1	BIT/ MILLS		0.25 m
1	BIT SUB		0.51 m
1	D.C.		9.54 m
1	STAB		1.88 m
7	D.C.		65.04 m
1	JAR		4.82 m
8	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
30	DRILLPIPE	STANDS	568.69 m
1	DRILLPIPE	SINGLES	9.34 m
KELLY DOWN			11.40 m
TOTAL			746.05 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			33 1000 daN
DRILLERS SIGNATURE			DENNIS LIHEUREUX

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	3 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	94.00
TOTAL HOURS	33.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	300	600
DENSITY kg/m3	1145	1140
FUNNEL VIS s/l	42	42
W.L. cm/ FILCK	9.0	9.0
PH	10.5	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	10	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
727.00	746.00	D	100	14

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
6300	152.0	100	0.0	

REDUCED PUMP SPEED: 2300 @ 60 @ 746

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
8.00	1145	1140	1340

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2770

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	15	0.25	7	RIG SERVICE
15	800	7.75	2	DRILL FR 727

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS CROWN SAVER
FUNTION HYD 7 SEC CHOKE BLOW BOLER ONCE
NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 15

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9800 | BOILER 6072

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: STEAM HOSES

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.75					0.25																				8.00
DAY		7.75					0.25																				8.00
EVE		8.00																									8.00
TOTAL		23.50					0.50																				24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB		0.51 m
1	D.C.		9.54 m
1	STAB		1.88 m
7	D.C.		65.04 m
1	JAR		4.82 m
8	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
29	DRILLPIPE	STANDS	549.84 m
1	DRILLPIPE	SINGLES	9.61 m
KELLY DOWN			11.40 m
TOTAL			727.47 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			33 1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	3 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	75.00
TOTAL HOURS	25.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG daN	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	1800	2000	2400
DENSITY kg/m3	1140	1150	1150
FUNNEL VIS s/l	45	40	42
W.L. cm/ FILCK	9.0	8.5	8.5
PH	10.5	10.5	10.5

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
699.00	727.00	D	100	14

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
6500	152.0	1000	0.0	

REDUCED PUMP SPEED: 2400 @ 60 @ 727

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
8.00	1150	1140	1340

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2751

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	2400	8.00	2	DRILL 699 TO 727
0				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS CROWN SAVER
FUNTION CHOKE HCR 2 SEC PIPERAMS 2 SEC BLOW BOLER ONCE
NO REPORTED INJURIES VISUAL INSECTION OF FLAIR +DEGASER LINES

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licence & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 15

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9800 | BOILER 6072

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: HYDRAULIC CABLE CUTS

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
1	62.45		70	155	4.5 XH	6			
1	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	FLUID BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.75					0.25																				8.00
DAY		7.75					0.25																				8.00
EVE		8.00																									8.00
TOTAL		23.50					0.50																				24.00

BIT RECORD

NO.	DRILLING ASSEMBLY (AT END OF TOUR)		
1	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB		0.51 m
1	D.C.		9.54 m
1	STAB		1.88 m
7	D.C.		65.04 m
1	JAR		4.82 m
8	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
28	DRILLPIPE	STANDS	531.03 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			11.40 m
TOTAL			699.05 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			33 1000 daN
DRILLERS SIGNATURE			RICK KNUPP

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	13 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	47.00
TOTAL HOURS	17.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG daN	3000
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [ ] OIL BASED [ ]

TIME	800	1200	1400
DENSITY kg/m3	1170	1160	1140
FUNNEL VIS s/l	45	43	43
W.L. cm/ FILCK	8.5	9.5	10.0
PH	10.0	9.0	9.0

MUD MATERIALS USED

TYPE	QTY	UNITS
CAUSTIC	1	SX
STAFLO	1	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
678.00	699.00	D	100	13

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
6080	152.0	100	0.0	

REDUCED PUMP SPEED: 2300 @ 60 @ 689

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
8.00	1170	1150	1450

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP 2770

MAX HOOKLOAD 38

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1215	4.25	2	DRILL 678 TO 686
1215	1230	0.25	7	RIG SERVICE FUNCTION PIPE RAMS 2 SEC.
1230	1600	3.50	2	DRILL 686 TO 699
1600				
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK TONGS,TONG LINES,AND BRAKE LINKAGE
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes:

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36				
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP				
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150				
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)				
BRIAN NEIGUM	WALLY BRECKA				

	Cor.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 15

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9800 | BOILER 6072

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: POWER CABLES

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
14	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP | MIDDLE | BOTTOM

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.75					0.25																				8.00
DAY		7.75					0.25																				8.00
EVE		8.00																									8.00
TOTAL		23.50					0.50																				24.00

BIT RECORD

NO.	DRILLING ASSEMBLY (AT END OF TOUR)			BIT RECORD	
1	BIT/ MILLS	O.D.mm	0.25 m	BIT NO.	2
1	BIT SUB		0.51 m	SIZE (mm)	200.0
1	D.C.		9.54 m	IADC CODE	
1	STAB		1.88 m	MFG.	VAREL
7	D.C.		65.04 m	Type	CH47
1	JAR		4.82 m	SERIAL NO.	176243
8	D.C.		74.58 m	JETS (mm)	13 X 11
			m	DEPTH IN (m)	652.00
			m	DEPTH OUT (m)	
			m	TOTAL METER	26.00
			m	TOTAL HOURS	9.50
27	DRILLPIPE	STANDS	511.98 m		
	DRILLPIPE	SINGLES	m		
KELLY DOWN			9.40 m		
TOTAL			678.00 m		
WT. OF D.C.			16 1000 dan	DRAG dan	0
WT. OF STRING			33 1000 dan	TORQUE	0
DRILLERS SIGNATURE			DENNIS LIHEUREUX	FILL m	0.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

MUD RECORD

	WATER BASED [X]	OIL BASED [ ]
TIME	100	500
DENSITY kg/m3	1160	1160
FUNNEL VIS s/l	48	48
W.L. cm/ FILCK	8.0	8.5
PH	10.0	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
661.00	678.00	D	60	13

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
7000	152.0	100	0.0	

REDUCED PUMP SPEED: 2400 @ 60 @ 675

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2731

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	445	4.75	2	DRILL FR 661 TO 671
445	500	0.25	7	RIG SERVICE
500	800	3.00	2	DRILL FR 671 TO 678

Notes: CHECK TONGS PINS +LINES DEADLINE + CLAMPS BRAKELINKAGE CROWN SAVER

FUNTION HYD 7SEC HCR 2 SEC CHOKE BLOW BOLER ONCE

NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Day	Eve
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 14

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 4750 | BOILER 2904

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: TRIPPING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES / NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	PIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	LAY DOWN					
MORN		6.50					0.25			0.50										0.75							8.00
DAY		6.75			0.25	0.25	0.25			0.50																	8.00
EVE		1.75	1.50			3.25																1.50					8.00
TOTAL		15.00	1.50		0.25	3.50	0.50			1.00										0.75		1.50					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm		
1	BIT SUB		0.51	m
1	D.C.		9.54	m
1	STAB		1.88	m
7	D.C.		65.04	m
1	JAR		4.82	m
8	D.C.		74.58	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
26	DRILLPIPE	STANDS	493.11	m
	DRILLPIPE	SINGLES		m
KELLY DOWN			11.40	m
TOTAL			661.13	m
WT. B.H.A.				1000 daN
WT. OF STRING				1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	2
SIZE (mm)	200.0
IADC CODE	
MFG.	VAREL
Type	CH47
SERIAL NO.	176243
JETS (mm)	3 X 11
DEPTH IN (m)	652.00
DEPTH OUT (m)	
TOTAL METER	9.00
TOTAL HOURS	1.75

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE/mm	OTHER	REASON	R.O.P.

DRAG daN	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED | OIL BASED

TIME	2130	2300
DENSITY kg/m3	1160	1160
FUNNEL VIS s/l	48	48
W.L. cm/ FILCK	8.0	8.0
PH	10.0	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
623.00	652.00	R	60	2000
652.00	661.00	D	80	12

Circ. Press (kPa)	PUMP NO. 1 LINER(mm.)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
7200	152.0	100	0.0	

REDUCED PUMP SPEED: 2000 @ 0 @ 661

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	1.5	220

MACP: 2731

MAX HOOKLOAD: 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1730	1.50	6	TRIP POOH FLOW CHECK 588,420,192
1730	1900	1.50	22	LAY DOWN DIR. TOOLS
1900	2045	1.75	6	TRIPS RIH
2045	2215	1.50	3	REAMING FR 623 TO 652
2215	2400	1.75	2	DRILL FR 652 TO 661
				TRIP RECORDS
				CAL. 4.35
				MEAS. 4.36
				DIFF. .01

Notes:

FUNYION BLIND RAMS HCR CHOKE BLOW BOLER ONCE

CHECK TONGS PINS LINES CROWN SAVER DEAD LINE + CLAMPS

NO REPORTED INJURIES VISUAL INSECTION OF FLARE + DEGASER LINES

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	LAYING DOW N COLLARS

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licenses & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 14

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 4750 | BOILER 2904

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

DC. DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	73	BAOJI	F - 600	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING	LAY DOWN					
MORN		6.50					0.25			0.50										0.75							8.00
DAY		6.75			0.25	0.25	0.25			0.50																	8.00
EVE		1.75	1.50			3.25																1.50					8.00
TOTAL		15.00	1.50		0.25	3.50	0.50			1.00										0.75		1.50					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	MOTOR		8.34 m
1	FLOT SUB		0.56 m
1	MULESHOE		0.93 m
1	MONEL		8.15 m
1	FIN CUTTE	0	0.64 m
1	MONEL		8.47 m
8	D.C.		74.58 m
	JAR		4.82 m
	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
24	DRILLPIPE	STANDS	455.33 m
1	DRILLPIPE	SINGLES	9.35 m
KELLY DOWN			6.00 m
TOTAL			652.00 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			34 1000 daN

DRILLERS SIGNATURE: RICK KNUPP

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	652.00
TOTAL METER	451.00
TOTAL HOURS	58.50

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG dan	2000
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED: X | OIL BASED:

TIME	800	1200	1400
DENSITY kg/m3	1150	1150	1150
FUNNEL VIS s/l	50	48	48
W.L. cm/ FILCK	8.0	8.0	8.0
PH	10.5	10.5	10.5

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
605.00	0.94	
624.00	0.47	
637.00	0.31	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
620.00	652.00	D	45	13

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
8200	152.0	100	0.0	

REDUCED PUMP SPEED: 2450 @ 60 @ 620

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP: 2751

MAX HOOKLOAD: 36

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1445	6.75	2	DRILL 620 TO 652
1445	1515	0.50	10	DEV. SURVEY
1515	1530	0.25	7	RIG SERVICE FUNCTION PIPE RAMS 2 SEC.
1530	1545	0.25	5	COND MUD & CIRC
1545	1600	0.25	6	TRIPS FLOW CHECK 648
1600				
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK BRAKE LINKAGE,TONGS ,AND TONG LINES
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes:

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	SNOW

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 14

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 4750 | BOILER 2904

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
4	24.70	E	72	155	4.5 XH	73	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
165	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	PERMIS	DIRECTIONAL WORK	SAFETY MEETING	LAY DOWN					
MORN		6.50					0.25			0.50										0.75							8.00
DAY		6.75			0.25	0.25	0.25			0.50																	8.00
EVE		1.75	1.50			3.25																1.50					8.00
TOTAL		15.00	1.50		0.25	3.50	0.50			1.00										0.75		1.50					24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	MOTOR		8.34 m
1	FLOT SUB		0.56 m
1	MULESHOE		0.93 m
1	MONEL		8.15 m
1	FIN CUTTE	0	0.64 m
1	MONEL		8.47 m
0	D.C.		74.58 m
	JAR		4.82 m
	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
23	DRILLPIPE	STANDS	436.53 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			2.50 m
TOTAL			620.35 m
W.O.B. D.C.			16 1000 daN
WT. OF STRING			32 1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	
TOTAL METER	419.00
TOTAL HOURS	51.75

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG daN	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	1200	430	630
DENSITY kg/m3	1140	1140	1150
FUNNEL VIS s/l	40	45	50
W.L. cm/ FILCK	8.0	8.0	8.0
PH	10.0	10.0	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	24	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
539.00	0.35	
558.00	0.47	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
572.00	620.00	D	45	12

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
9000	152.0	100	0.0	

REDUCED PUMP SPEED: 3300 @ 60 @ 619

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2770

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	330	3.50	2	DRILL FR 572 TO 600
330	345	0.25	7	RIG SERVICE
345	430	0.75	20	DIR. WORK WORK ON SERVEY UNIT
430	730	3.00	2	DRILL FR600
730	800	0.50	10	DEV. SURVEY
800				

Notes: CHECK TONGS PINS LINES DEADLINE + CLAMPS BRAKE LINKAGE

FUNTION CHOKE HCR 2SEC BLOW BOLER ONCE

NO REPORTED INJUREIS

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	NEW HANDS

	Qty.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Slick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 13

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7000 | BOILER 4200

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE | CHANGE SCREENS | YES | NO | TOP 110 | MIDDLE 0 | BOTTOM 70 | TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.25					0.25			0.50																	8.00
DAY		7.00					0.25			0.75																	8.00
EVE		6.75					0.25			0.75											0.25						8.00
TOTAL		21.00					0.75			2.00											0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	MOTOR		8.34 m
1	FLOT SUB		0.56 m
1	MULESHOE		0.93 m
1	MONEL		8.15 m
1	FIN CUTTE		0.64 m
1	MONEL		8.47 m
8	D.C.		74.58 m
	JAR		4.82 m
	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
20	DRILLPIPE	STANDS	379.74 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			11.40 m
TOTAL			572.46 m
WT. B.C.			16 1000 dan
WT. OF STRING			32 1000 dan
DRILLERS SIGNATURE			RICK KNUPP

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17 X 3
DEPTH IN (m)	309.00
DEPTH OUT (m)	
TOTAL METER	263.00
TOTAL HOURS	45.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(in)	OTHER	REASON	R.O.P.

DRAG dan	3000
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	1600	1900	2200
DENSITY kg/m3	1100	1100	1120
FUNNEL VIS s/l	40	40	40
W.L. cm/ FILCK	11.0	9.0	9.0
PH	11.0	10.5	10.5

MUD MATERIALS USED

TYPE	QTY	UNITS
STAFLO	1	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
501.00	0.34	
520.00	0.31	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
505.00	572.00	D	45	13

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
8650	152.0	100	0.0	

REDUCED PUMP SPEED

3280 @ 60 @ 543

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

HOURS	INTAKE	OVERFLOW	UNDERFLOW
0.00			

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 2849

MAX HOOKLOAD 36

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	2115	5.25	2	DRILL 505 TO 553
2115	2130	0.25	21	SAFETY MTG. HELD BOP DRILL RESPONCE TIME 45 SEC. SHUT IN 4 SEC.
2130	2145	0.25	7	RIG SERVICE FUNCTION ANNULAR
2145	2315	1.50	2	DRILL 553 TO 572
2315	2400	0.75	10	DEV. SURVEY
2400				
				FUNCTION CROWN SAVER AND CHOKE CONTROL
				CHECK TONGS,TONG LINES,AND BRAKE LINKAGE
				NO REPORTED INJURIES
				BLOW BOILER ONCE

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	Rig
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licenses & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 13

RIG NO.: 117

FUEL @ 08:00 HRS.

REG 7000 | BOILER 4200

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: ICE

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	REDUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	RIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.25					0.25			0.50																	8.00
DAY		7.00					0.25			0.75																	8.00
EVE		6.75					0.25			0.75											0.25						8.00
TOTAL		21.00					0.75			2.00											0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.25 m
1	MOTOR		8.34 m
1	FLOT SUB		0.56 m
1	MULESHOE		0.93 m
1	MONEL		8.15 m
1	FIN CUTTE		0.64 m
1	MONEL		8.47 m
8	D.C.		74.58 m
	JAR		4.82 m
	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
17	DRILLPIPE	STANDS	303.44 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			11.40 m
TOTAL			496.16 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			31 1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17.1X 3
DEPTH IN (m)	309.00
DEPTH OUT (m)	
TOTAL METER	196.00
TOTAL HOURS	38.50

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN 0

TORQUE

FILL m

MUD RECORD

WATER BASED [X] OIL BASED [ ]

TIME	730	1200
DENSITY kg/m3	1050	1060
FUNNEL VIS s/l	42	42
W.L. cm/ FILCK	8.0	8.0
PH	10.0	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS
SODA ASH	2	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
406.00	0.42	
425.00	0.25	
444.00	0.58	
463.00	0.57	
482.00	0.06	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
420.00	505.00	D	40	12

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
8000	152.0	100	0.0	

REDUCED PUMP SPEED: 2400 @ 60 @ 500

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

KACP 2928

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1400	6.00	2	DRILL FR420 TO 486
1400	1415	0.25	7	RIG SERVICE
1415	1515	1.00	2	DRILL FR 486 TO 505
1515	1600	0.75	10	DEV. SURVEY
1600				

Notes: CHECK TONGS PINS LINES BRAKES LINKAGE CROWN SAVER BLOW BOLER ONCE

FUNTION HCR 2 SEC PIPE RAMS 2 SEC

NO REPORTED INJURIES

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 13

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7000 | BOILER 4200

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: ALERT BULLITEN S

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
14	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	INSTALL UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.25					0.25			0.50																	8.00
DAY		7.00					0.25			0.75																	8.00
EVE		6.75					0.25			0.75											0.25						8.00
TOTAL		21.00					0.75			2.00											0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm 0.25	m
1	MOTOR	8.34	m
1	FLOT SUB	0.56	m
1	MULESHOE	0.93	m
1	MONEL	8.15	m
1	FIN CUTTE	0.64	m
1	MONEL	8.47	m
8	D.C.	74.58	m
*	JAR	4.82	m
	D.C.	74.58	m
			m
			m
			m
			m
			m
			m
			m
			m
12	DRILLPIPE	STANDS 227.69	m
	DRILLPIPE	SINGLES	m
KELLY DOWN		11.40	m
TOTAL		420.41	m
WT. OF D.C.		16	1000 daN
WT. OF STRING		29	1000 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17.4 X 3
DEPTH IN (m)	309.00
DEPTH OUT (m)	
TOTAL METER	111.00
TOTAL HOURS	31.50

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

	WATER BASED	OIL BASED	
TIME	300	500	
DENSITY kg/m3	1035	1045	
FUNNEL VIS s/l	34	40	
W.L. cm/ FILCK	9.0	7.0	
PH	9.5	10.0	

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	22	SX
CAUSTIC	1	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
349.00	1.57	
368.00	0.66	
387.00	0.96	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
353.00	420.00	D	40	6

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
6000	152.0	100	0.0	

REDUCED PUMP SPEED: 2200 @ 60 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	15	0.25	7	RIG SERVICE FT ANNULAR
15	730	7.25	2	DRILL FR 353 TO 420
730	800	0.50	10	ACCUM SURVEYS
				FT CROWN SAVER REMOTE CHOKE
				INSPECT TONGS LINES BRAKELINKAGE
				NO INJURIES REPORTED

Notes:

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 12

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9000 | BOILER 5700

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Mom	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.50					0.25			0.25																	8.00
DAY		4.25				2.25	0.25			0.25										1.00							8.00
EVE		3.25			1.00	2.00	0.25			0.50										1.00							8.00
TOTAL		15.00			1.00	4.25	0.75			1.00										2.00							24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	
1	BIT/ MILLS	O.D.mm	0.25 m
1	MOTOR		8.34 m
1	FLOT SUB		0.56 m
1	MULESHOE		0.93 m
1	MONEL		8.15 m
1	FIN CUTTE		0.64 m
1	MONEL		8.47 m
8	D.C.		74.58 m
	JAR		4.82 m
	D.C.		74.58 m
			m
			m
			m
			m
			m
			m
			m
			m
8	DRILLPIPE	STANDS	151.51 m
1	DRILLPIPE	SINGLES	9.61 m
KELLY DOWN			11.40 m
TOTAL			353.84 m
WT. OF D.C.			1000 daN
WT. OF STRING			1000 daN
DRILLERS SIGNATURE			

BIT RECORD

BIT NO.	1 RR
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	17 X 3
DEPTH IN (m)	309.00
DEPTH OUT (m)	
TOTAL METER	44.00
TOTAL HOURS	3.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(in)	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	2200		
DENSITY kg/m3	1015		
FUNNEL VIS s/l	29		
W.L. cm/ FILCK			
PH	9.0		

MUD MATERIALS USED

TYPE	QTY	UNITS
FLOC	2	PAILS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
311.00	1 34	
330.00	1.06	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
309.00	353.00	D	40	6

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
6000	152.0	100	0.0	

REDUCED PUMP SPEED: 2200 @ 60 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1700	1.00	20	DIR. WORK MAKE UP TOOL
1700	1900	2.00	6	TRIPS
1900	2000	1.00	5	COND MUD & CIRC WASH TO BOTTOM
2000	2015	0.25	7	RIG SERVICE FT ANNULAR
2015	2030	0.25	10	DEV. SURVEY ORIENT TOOL FACE
2030	2345	3.25	2	DRILL TO 353M
2345	2400	0.25	10	ACCUM SURVEYS
				FT REMOTE CHOKE CROWN SAVER
				INSPECT TONGS AND LINES BRAKELINKAGE
				NO REPORTED INJURIES

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36				
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP				
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K3S6020123150				
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)				
BRIAN NEIGUM	WALLY BRECKA				

	Opr.	R.S.
(1) Daily Walk Around Inspection	PN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crc /month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 12

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9000 | BOILER 5700

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: TRIPING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	SHOE TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
1	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRILG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.50					0.25			0.25																	8.00
DAY		4.25				2.25	0.25			0.25										1.00							8.00
EVE		3.25			1.00	2.00	0.25			0.50										1.00							8.00
TOTAL		15.00			1.00	4.25	0.75			1.00										2.00							24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	0.25	m
1	BIT SUB	165	0.51	m
1	D.C.	165	8.90	m
1	SHOCK SUB	166	1.88	m
15	D.C.	165	140.26	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
8	DRILLPIPE	STANDS	151.51	m
	DRILLPIPE	SINGLES		m
KELLY DOWN			5.40	m
TOTAL			308.71	m
WT. OF D.C.			16	1000 daN
WT. OF STRING			24	1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	11 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	309.00
TOTAL METER	108.00
TOTAL HOURS	21.00
DRAG daN	
TORQUE	
FILL m	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

MUD RECORD

WATER BASED [X] | OIL BASED [ ]

TIME	1000	1400	
DENSITY kg/m3	1000	1000	
FUNNEL VIS s/l	29	29	
W.L. cm/ FILCK			
PH	10.5	10.5	

MUD MATERIALS USED

TYPE	QTY	UNITS
ENVIROFLOC	1	SX
GYPSUM	2	SX
SAWDUST	5	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
283.00	2.25	0

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
295.00	309.00	D	130	2

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
5000	152.0	120	0.0	

REDUCED PUMP SPEED

1600 @ 60 @ 209

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 3046

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	830	0.50	2	DRILL 229
830	845	0.25	10	DEV. SURVEY
845	900	0.25	7	RIG SERVICE
900	1000	1.00	6	HOIST IN TO CASING CHANGE SWEGE ON GOOSENECK
1000	1345	3.75	2	DRILL FR 229 TO 309
1345	1500	1.25	6	TRIPS FLOW/ @309 293 170 OUT
1500	1600	1.00	20	DIR. WORK MAKE UP TOOLS
1600				

Notes: CHECK TONGS PINS CROWN SAVER DEAD LINE + CLAMPS

FUNTION CHOKE HYD 8 SEC TO CLOSE HCR 2 SEC BLOW BOLER ONCE

NO REPORTED INJUREIS

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	H2S

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect POP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 12

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 9000 | BOILER 5700

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES | Mom | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF D.RLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		7.50					0.25			0.25																	8.00
DAY		4.25				2.25	0.25			0.25										1.00							8.00
EVE		3.25			1.00	2.00	0.25			0.50										1.00							8.00
TOTAL		15.00			1.00	4.25	0.75			1.00										2.00							24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB	165	0.51 m
1	D.C.	165	8.90 m
1	SHOCK SUB	166	1.88 m
15	D.C.	165	140.26 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
7	DRILLPIPE	STANDS	132.66 m
	DRILLPIPE	SINGLES	m
KELLY DOWN			11.40 m
TOTAL			295.86 m
WT. OF D.C.			16 1000 daN
WT. OF STRING			24 1000 daN

DRILLERS SIGNATURE | JIM CARR

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
I.ADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	11 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	
TOTAL METER	94.00
TOTAL HOURS	16.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL, m

MUD RECORD

WATER BASED | OIL BASED

TIME	600		
DENSITY kg/m3	1010		
FUNNEL VIS s/l	28		
W.L. cm/ FILCK			
PH	10.5		

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	20	SX
DESCO	1	SX
STAFLO	2	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
267.00	2.50	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
257.00	295.00	D	140	2

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
5000	152.0	120	0.0	

REDUCED PUMP SPEED

1850 @ 60 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP 3026

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	315	3.25	2	DRILL TO 277M
315	330	0.25	7	RIG SERVICE FT HCR
330	345	0.25	10	DEV. SURVEY @ 267M
345	800	4.25	2	DRILL TO 295M
800				
				INSPECT TONGS AND LINES BRAKELINKAGE
				FT REMOTE CHOKE CROWN SAVER
				NO INJURIES REPORTED

Notes:

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	SAFETY TOPIC

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Slick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 11

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7600 | BOILER 3500

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP 70

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	PICKUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN									1.25																		1.25
DAY		3.25				1.50	0.25			0.25					0.50						0.25		2.00				8.00
EVE		5.50			1.25	0.75				0.25											0.25						8.00
TOTAL		8.75			1.25	2.25	0.25		1.25	0.50					0.50						0.50		2.00				17.25

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILL	O.D.mm	0.25	m
1	BIT SUB	165	0.51	m
1	D.C.	165	8.90	m
1	SHOCK SUB	166	1.88	m
15	D.C.	165	140.26	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
5	DRILLPIPE	STANDS	94.56	m
	DRILLPIPE	SINGLES		m
KELLY DOWN			11.40	m
TOTAL			257.76	m
WT. OF D.C.			12	1000 daN
WT. OF STRING			23	1000 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS ('mm)	11 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	
TOTAL METER	56.00
TOTAL HOURS	8.75

INNER	OUTER	D.C.	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN: NIL

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	1200
DENSITY kg/m3	1010
FUNNEL VIS s/l	28
W.L. cm/ FILCK	
PH	

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	20	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
248.00	2.50	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
229.00	257.00	D	140	2

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
4800	152.0	120	0.0	

REDUCED PUMP SPEED: 1750 @ 60 @ 257

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1500	1745	1.75	2	DRILL F229 TO 238 STUCK
1745	1830	0.75	6	PULL IN TO CASING
1830	1945	1.25	5	COND MUD & CIRC
1945	2000	0.25	21	SAFETY MTG. BOP DRILL 1.00 RES SHUT IN 1.10 ANNULAR CL 10 SEC
2000	2345	3.75	2	DRILL TO 257M
2345	2400	0.25	10	DEV. SURVEY @ 248M
				FT REMOTE CHOKE CROWN SAVER MANIFOLD POS
				TONGS LINES BRAKELINKAGE CHECKED
				NO REPORTED INJURIES

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Qty.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 11

RIG NO.: 117

FUEL @ 09:00 HRS.

RIG 7600 | BOILER 3500

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: H2S

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS | YES | NO

TOP	TOP
110	70
MIDDLE 0	MIDDLE
BOTTOM 70	BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN									1.25																		1.25
DAY		3.25				1.50	0.25			0.25					0.50						0.25		2.00				8.00
EVE		5.50			1.25	0.75				0.25											0.25						8.00
TOTAL		8.75			1.25	2.25	0.25		1.25	0.50					0.50						0.50		2.00				17.25

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	0.25 m
	BIT SUB	165	0.51 m
1	D.C.	165	8.90 m
1	SHOCK SUB	166	1.88 m
15	D.C.	165	140.26 m
3	DRILLPIPE	STANDS	56.83 m
1	DRILLPIPE	SINGLES	9.35 m
	KELLY DOWN		11.40 m
	TOTAL		229.38 m
	WT. OF D.C.		12 1000 daN
	WT. OF STRING		23 1000 daN

DRILLERS SIGNATURE: DENNIS THEUREUX

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	11 X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	
TOTAL METRES	28.00
TOTAL HOURS	3.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE/mm	OTHER	REASON	R.O.P.

DRAG daN	0
TORQUE	0
FILL m	0.00

MUD RECORD

WATER BASED: X | OIL BASED:

TIME	1600
DENSITY kg/m3	1000
FUNNEL VIS s/l	
W.L. cm/ FILCK	
PH	
FLOCK H2	0.00

MUD MATERIALS USED

TYPE	QTY	UNITS
ENVIROFLOC	2	SX
GYPSUM	8	SX
ANIONIC POLYACR	1	PAILS
SODA ASH	2	SX
GEL	6	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
217.00	2.50	0

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
201.00	229.00	D	80	6000

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
4000	152.0	100	0.0	

REDUCED PUMP SPEED

1400 @ 60 @ 229

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 3046

MAX HOOKLOAD 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	930	1.50	6	TRIPS
930	945	0.25	21	SAFETY MTG. BOP DRILL WITH CREW
945	1000	0.25	7	RIG SERVICE CHECK MOTER KILLS OK
1000	1200	2.00	23	DRILL OUT CEMENT
1200	1245	0.75	2	DRILL F201 TO 210
1245	1315	0.50	15	TEST B.O.P. FORMATION TEST
1315	1545	2.50	2	DRILL F210 TO 229
1545	1600	0.25	10	DEV. SURVEY
1600				

Notes: CHECK TONGS PINS LINES CROWN SAVER DEAD LINE + CLAMPS
FUNTION PIPE RAMS HCR CHOKE BLOW BOLER ONCE
NO REPORTED INJUREIS VISUAL INSECTION OF FLAIR+DEGASER LINES
CUT = SLIP 49.5M

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	SAFETY TOPIC

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Slick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flowlines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 11

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 7600 | BOILER 3500

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN									1.25																		1.25
DAY		3.25				1.50	0.25			0.25					0.50						0.25		2.00				8.00
EVE		5.50			1.25	0.75				0.25											0.25						8.00
TOTAL		8.75			1.25	2.25	0.25		1.25	0.50					0.50						0.50		2.00				17.25

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	0.25 m
1	BIT SUB	165	0.51 m
1	D.C.	165	8.90 m
1	SHOCK SUB	166	1.88 m
15	D.C.	165	140.23 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
	KELLY DOWN	11.40	m
			m
	WT. UP		100 daN
	WT. DOWN		100 daN
	WT. OF STRING		100 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	1
SIZE (mm)	200.0
IADC CODE	4 4 7
MFG.	VAREL
Type	CH 18
SERIAL NO.	187387
JETS (mm)	11.0X 3
DEPTH IN (m)	201.00
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	
DIAG deg	
TORQUE	
FILL m	

INNER	OUTER	DULL	LOCATION	BEARING	GAUGE	OTHER	REASON	R.O.P.

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm³/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa) | PUMP NO. 1 LINER(mm) | SPM | PUMP NO. 2 LINER(mm) | SPM

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS.	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0			15	TEST B.O.P. MAN VAL PT BLIND HCR KILL LINE CHECK VALVE
				RIG TO TEST PIPERAMS STAB INSIDE BOP ANNULAR
				LOWER KELLY COCK ACCUM CHECK TEST MSO
0	645	6.75		3 FT 18000 AFTER 10100 RECHARGE 1.47
645	800	1.25	9	CUT OFF DRLL LINE
800				
				ALL TESTS 1500 KPA LOW 10500 KPA HIGH
				INSPECT TONGS BRAKELINKAGE
				NO INJURIES REPORTED

Notes:

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	PRESSURE TEST

	Opr.	R.Mr.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 10

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 8500 | BOILER 4600

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
	219.1	205.7	35.70	Ipsco	k-55	17	201.69	0.79	200.90

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.80		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					0.75	4.75						2.50															8.00
DAY					1.00	1.50						5.00									0.50						8.00
EVE													4.00	3.00	1.00												8.00
TOTAL					1.75	6.25						7.50	4.00	3.00	1.00						0.50						24.00

NO. | DRILLING ASSEMBLY (AT END OF TOUR) | BIT RECORD

	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. OF B.H.A.			1000 daN
WT. OF STRING			1000 daN

DRILLERS SIGNATURE | JIM CARR

BIT NO. | SIZE (mm) | IADC CODE | MFG. | Type | SERIAL NO. | JETS (mm) | DEPTH IN (m) | DEPTH OUT (m) | TOTAL METER | TOTAL HOURS

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG daN | TORQUE | FILL m

MUD RECORD: WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED: @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	2000	4.00	13	WAIT ON CEMENT CUT OFF 4.48
2000	2300	3.00	14	NIPPLE DOWN DIVERTER WELD BOWL NIP UP BOPS
2300	2400	1.00	15	TEST B.O.P MANIFOLD VALVES SWEEP LINE MAN HCR
				1500 KPA LOW 10500 HIGH
				INSPECT TONGS AND LINES
				BRAKELINKAGE CROWN SAVER

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL. McKAY LAKES K-36				
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP				
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150				
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)				
BRIAN NEIGUM	WALLY BRECKA				

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB

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

YEAR 2003	MONTH 3	DAY 10	
RIG NO.: 117			
FUEL @ 08:00 HRS.			
RIG 8500	BOILER 4600		

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: RUNING CASING

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER	219.1	205.7	35.70	Ipsco	k-55	17	201.69	0.79	200.90

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 TYPE SWACO TYPE

CHANGE SCREENS YES NO

TOP 110 MIDDLE 0 BOTTOM 70

TOP 70 MIDDLE BOTTOM 70

RENTALS / SERVICES

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	TRIP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					0.75	4.75						2.50															8.00
DAY					1.00	1.50						5.00									0.50						8.00
EVE													4.00	3.00	1.00												8.00
TOTAL					1.75	6.25						7.50	4.00	3.00	1.00						0.50						24.00

	Morn	Day	Eve

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
W.O.B.D.C.			1000 dan
WT. OF STRING			1000 dan

BIT RECORD

BIT NO.										
SIZE (mm)										
IADC CODE										
MFG.										
Type										
SERIAL NO.										
JETS (mm)										
DEPTH IN (m)										
DEPTH OUT (m)										
TOTAL METER										
TOTAL HOURS										
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.	

DRAG dan

TORQUE

FILL m

DRILLERS SIGNATURE: DENNIS LIHEUREUX

MUD RECORD

	WATER BASED X	OIL BASED	
TIME	800	1500	
DENSITY kg/m3	1220	1160	
FUNNEL VIS s/l	80	45	
W.L. cm/ FILCK			
PH	9.0	9.0	

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	15	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
1300	152.0	80	0.0	

REDUCED PUMP SPEED: @ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP 0

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	930	1.50	6	BLOW KELLY HOIST TO RUN CASING FLOW/ @200 178 OUT
930	945	0.25	21	SAFETY MTG.
945	1400	4.25	12	RUN CASE STUCK @ 33M
1400	1500	1.00	5	COND MUD & CIRC
1500	1515	0.25	21	SAFETY MTG. PRE CEMENT
1515	1600	0.75	12	RUN CASE & CEMENT
1600				
				cement surface casing with 15 tonne of 0-1-0 g with 3% cacl2
				we got 2m3 of good cement, plug down at 16:00 hrs.

Notes: CHECK TONGS PINS LINES DEAD LINE + CLAMPS CROWN SAVER

NO REPORTED INJUREIS FUNTION HCR BRAKES + LINKAGE

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)	BN	WB
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 10

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 8500 | BOILER 4600

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
	219.1	205.7	35.70	Ipsco	k-55	17	201.69	0.79	200.90

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
14	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	18			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN					0.75	4.75						2.50															8.00
DAY					1.00	1.50						5.00									0.50						8.00
EVE													4.00	3.00	1.00												8.00
TOTAL					1.75	6.25						7.50	4.00	3.00	1.00						0.50						24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

1	BIT/ MILLS	O.D.mm	0.30 m
	BIT SUB	203	0.91 m
2	D.C.	203	17.88 m
1	X.O.	203	0.63 m
16	D.C.	165	149.16 m
	DRILLPIPE	STANDS	19.29 m
	DRILLPIPE	SINGLES	9.24 m
KELLY DOWN			3.59 m
TOTAL			201.00 m
WT. OF D.C.			13 1000 daN
WT. OF STRING			24 1000 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	RR2
SIZE (mm)	311.0
IADC CODE	
MFG.	RUS
Type	LS115
SERIAL NO.	2030302
JETS (mm)	
DEPTH IN (m)	120.00
DEPTH OUT (m)	201.00
TOTAL METER	81.00
TOTAL HOURS	7.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	700
DENSITY kg/m3	1220
FUNNEL VIS s/l	60
W.L. cm/ FILCK	
PH	

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	5	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Pressure (kPa)

PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
152.0		0.0	

REDUCED PUMP SPEED: @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	130	1.50	6	POOH LAY DOWN 8IN DCS
130	200	0.50	12	RUN CASE & SAFETY MEETING HELD WITH CREW
200	400	2.00	12	WORK ON POWER TONGS RIG OUT
400	715	3.25	6	TRIPS RIH WITH BIT REAM TIGHT
715	800	0.75	5	COND MUD & CIRC
				INSPECT TONGS CROWN SAVER BRAKE LINKAGE

Notes:

EVENING SHIFT

LICENCE NO.:	WELL NAME AND NO.:
1966	PARAMOUNT ET AL McKAY LAKES K-36

OPERATOR:	CONTRACTOR:
PARAMOUNT RESOURCES LTD.	PRECISION DRILLING, div OF PLP
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)
BRIAN NEIGUM	WALLY BRECKA

	Day.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 9

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 10000 | BOILER 6200

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
[illegible]	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(3)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS | YES | NO

TOP	TOP
110	70
MIDDLE 0	MIDDLE
BOTTOM 70	BOTTOM 70

RENTALS / SERVICES	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		5.25				1.75	0.25			0.75																	8.00
DAY		5.25	2.50							0.25																	8.00
EVE		3.00			1.00	3.25	0.25			0.50																	8.00
TOTAL		13.50	2.50		1.00	5.00	0.50			1.50																	24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm		
1	BIT SUB	203	0.30	m
	D.C.	203	0.91	m
2	X.O.	203	17.88	m
1	D.C.	165	0.63	m
16			149.16	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
	DRILLPIPE	STANDS	19.29	m
	DRILLPIPE	SINGLES	9.24	m
KELLY DOWN			3.59	m
TOTAL			201.00	m
WT. ABV. B.C.			13	1000 daN
WT. OF STRING			24	1000 daN

DRILLERS SIGNATURE | JIM CARR

BIT RECORD

BIT NO.	RR2
SIZE (mm)	311.0
IADC CODE	
MFG.	RUS
Type	LS115
SERIAL NO.	2030302
JETS (mm)	
DEPTH IN (m)	120.00
DEPTH OUT (m)	201.00
TOTAL METER	81.00
TOTAL HOURS	7.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm)	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	1600	2300	2400
DENSITY kg/m3	1160	1190	1200
FUNNEL VIS s/l	65	75	90
W.L. cm/ FILCK			
PH	9.0	10.0	10.5

MUD MATERIALS USED

TYPE	QTY	UNITS
CAUSTIC	1	SX
GEL	8	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
158.00	2.00	0
189.00	1.75	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
165.00	201.00	D	140	6

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
	152.0		0.0	

REDUCED PUMP SPEED

@ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP 0

MAX HOOKLOAD 50

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1630	0.50	2	DRILL F 165 TO 171
1630	1645	0.25	10	DEV. SURVEY
1645	1700	0.25	7	RIG SERVICE
1700	1845	1.75	2	DRILL F171 TO 189
1845	1915	0.50	5	COND MUD & CIRC
1915	2145	2.50	6	TRIPS WIPER STRAP .27 DIFF
2145	2215	0.50	2	DRILL
2215	2230	0.25	10	DEV. SURVEY
2230	2245	0.25	2	DRILL TO 201M
2245	2315	0.50	5	COND MUD & CIRC
2315	2400	0.75	6	TRIPS
2400				
				FT CROWN SAVER INSPECT TONGS BRAKELINKAGE
				NO REPORTED INJURIES

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)
BRIAN NEIGUM	WALLY BRECKA

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Fire Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 9

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 10000 | BOILER 6200

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC: CATWAKE ICE

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS: YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY DRESSING						
MORN		5.25				1.75	0.25			0.75																	8.00
DAY		5.25	2.50							0.25																	8.00
EVE		3.00			1.00	3.25	0.25			0.50																	8.00
TOTAL		13.50	2.50		1.00	5.00	0.50			1.50																	24.00

Morn	Day	Eve

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D.mm	0.30 m
	BIT SUB	203	0.91 m
2	D.C.	203	17.88 m
1	X.O.	203	0.63 m
15	D.C.	165	139.91 m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN	5.40		m
TOTAL	165.03		m
WT. OF D.C.	13		1000 daN
WT. OF STRING	20		1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	RR2
SIZE (mm)	311.0
IADC CODE	
MFG.	RUS
Type	LS115
SERIAL NO.	2030302
JETS (mm)	
DEPTH IN (m)	120.00
DEPTH OUT (m)	
TOTAL METER	45.00
TOTAL HOURS	4.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	1030	1500	
DENSITY kg/m3	1110	1140	
FUNNEL VIS s/l	44	54	
W.L. cm/ FILCK			
PH	9.0	9.0	

MUD MATERIALS USED

TYPE	QTY	UNITS
GEL	25	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
130.00	1.75	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
120.00	165.00	D	90	8000

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
5000	152.0	120	0.0	

REDUCED PUMP SPEED: 1700 @ 60 @ 165

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW
			0

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP: 0

MAX HOOKLOAD: 2000

TIME LOG

FROM	TO	ELAPSED TIME	CODE
800	1130	3.50	2
1130	1145	0.25	10
1145	1415	2.50	3
1415	1600	1.75	2
1600			

TIME DETAIL

DRILL F 120 TO 143

DEV. SURVEY

REAMING WORK PIPE TIGHT HOLE

DRILL F143 TO 165

Notes: CHECK TONGS PINS LINES CROWN SAVER DEAD LINE +CLAMPS

FUNTION HCR NO REPORTED INJURIES

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36				
OPERATOR.: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP				
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150				
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)				
BRIAN NEIGUM	WALLY BRECKA				

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licenses & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Performed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003	MONTH 3	DAY 9	
RIG NO.: 117			
FUEL @ 08:00 HRS.			
RIG 10000	BOILER 6200		
WEATHER	TEMPERATURE		
	CONDITIONS		
	WIND DIRECTION		
	ROAD CONDITION		

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
114	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS: YES ☐ NO ☐

TOP	TOP
110	70
MIDDLE 0	MIDDLE
BOTTOM 70	BOTTOM 70

RENTALS / SERVICES

	Mcm	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	PERFING	DIRECTIONAL WORK	SAFETY MEETING						
MORN		5.25				1.75	0.25			0.75																	8.00
DAY		5.25	2.50							0.25																	8.00
EVE		3.00			1.00	3.25	0.25			0.50																	8.00
TOTAL		13.50	2.50		1.00	5.00	0.50			1.50																	24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm		
1	BIT/ MILLS	O.D.mm	0.30	m
	BIT SUB	203	0.91	m
2	D.C.	203	17.88	m
1	X.O.	203	0.63	m
10	D.C.	165	93.05	m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
				m
	DRILLPIPE	STANDS		m
	DRILLPIPE	SINGLES		m
KELLY DOWN		7.40		m
TOTAL		120.17		m
W D.C.		13		1000 daN
WT. OF STRING		20		1000 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	RR1
SIZE (mm)	311.0
IADC CODE	
MFG.	SMITH
Type	117
SERIAL NO.	126641
JETS (mm)	3 X 17.
DEPTH IN (m)	19.00
DEPTH OUT (m)	120.00
TOTAL METER	101.00
TOTAL HOURS	11.25

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.C.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED ☐ OIL BASED ☐

TIME	1200	600
DENSITY kg/m3	1010	1100
FUNNEL VIS s/l	28	30
W.L. cm/ FILCK		
PH	9.0	10.0

MUD MATERIALS USED

TYPE	QTY	UNITS
CAUSTIC	1	SX
GEL	16	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
77.00	1.00	
105.00	1.25	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
77.00	120.00	D	180	4

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
2000	152.0	120	0.0	

REDUCED PUMP SPEED @ @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	15	0.25	7	RIG SERVICE FT ANNULAR
15	45	0.50	6	TRIPS
45	145	1.00	2	DRILL TO 87M
145	215	0.50	10	DEV. SURVEY
215	515	3.00	2	DRILL TO 114M
515	530	0.25	10	DEV. SURVEY 105M
530	645	1.25	2	DRILL TO 124M
645	800	1.25	6	TRIPS
				FT CROWN SAVER INSPECT TONGS BRAKELINKAGE
				NO INJURIES REPORTED

Notes:

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well Licenses & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 8

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 6100 | BOILER 5700

WEATHER: TEMPERATURE -20 | CONDITIONS OVERCAST | WIND DIRECTION CALM | ROAD CONDITION ICE

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. I.D	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
114	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP 70

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM 70

RENTALS / SERVICES

	Night	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN														8.00													8.00
DAY		0.75			1.25									5.50							0.50						8.00
EVE		5.00			1.25	1.00				0.50											0.25						8.00
TOTAL		5.75			2.50	1.00				0.50				13.50							0.75						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	BIT/ MILLS	O.D. mm	0.30 m
	BIT SUB	203	0.91 m
2	D.C.	203	17.88 m
1	X.O.	203	0.63 m
5	D.C.	165	46.62 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN		11.40	m
TOTAL		77.74	m
WT. O.D.C.		7000	1000 dan
WT. OF STRING		7000	1000 dan

DRILLERS SIGNATURE JIM CARR

BIT RECORD

BIT NO.	RR1
SIZE (mm)	311.0
IADC CODE	
MFG.	VAREL
Type	117
SERIAL NO.	126641
JETS (mm)	13 X 17
DEPTH IN (m)	19.00
DEPTH OUT (m)	
TOTAL METER	58.00
TOTAL HOURS	6.00

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME	1800		
DENSITY kg/m3	1060		
FUNNEL VIS s/l	65		
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS
SODA ASH	1	SX
GEL	25	SX

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION
31.00	0.75	
58.00	1.25	

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
23.00	77.00	D	180	4

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
1500	152.0	120	0.0	

REDUCED PUMP SPEED @ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	1700	1.00	5	COND MUD & CIRC
1700	1845	1.75	2	DRILL F23 TO 40M
1845	1900	0.25	10	DEV. SURVEY 31M .75
1900	1915	0.25	21	BOP DRILL, HCR OPEN 2SEC, HYDRILL CLOSED 18SEC,
1915	2130	2.25	2	DRILL TO 68M
2130	2145	0.25	10	SURVEY 58M
2145	2245	1.00	2	DRILL TO 77M
2245	2300	0.25	5	CIRC
2300	2400	1.00	6	TRIPS
				FT CROWN SAVER INSPECT TONGS AND LINES BRAKELINKAGE
				NO INJURIES REPORTED

Notes:

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (once/week/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 8

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 6100 | BOILER 5700

WEATHER: TEMPERATURE -20 | CONDITIONS OVERCAST | WIND DIRECTION CALM | ROAD CONDITION ICE

SAFETY TOPIC: PICKING DC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
114	62.45		70	155	4.5 XH	6			
85	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRED	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P.	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN														8.00													8.00
DAY		0.75			1.25									5.50							0.50						8.00
EVE		5.00			1.25	1.00				0.50											0.25						8.00
TOTAL		5.75			2.50	1.00				0.50				13.50							0.75						24.00

Moon	Day	Eve

DRILLING ASSEMBLY (AT END OF TOUR)

NO.			
1	B/T/ MILLS	O.T.mm	0.30 m
	BIT SUB	203	0.91 m
2	D.C.	203	17.88 m
1	X.O.	203	0.63 m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN		3.25	m
TOTAL		22.97	m
WT. OF D.C.		7000	1000 daN
WT. OF STRING		7000	1000 daN

DRILLERS SIGNATURE: DENNIS LIHEUREUX

BIT RECORD

BIT NO.	RR1
SIZE (mm)	311.0
IADC CODE	
MFG.	VAREL
TYPE	117
SERIAL NO.	126641
JETS (mm)	13 X 17
DEPTH IN (m)	19.00
DEPTH OUT (m)	
TOTAL METER	4.00
TOTAL HOURS	0.50

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG daN: 0

TORQUE: 0

F/LL m:

MUD RECORD

WATER BASED: X | OIL BASED:

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT
19.00	23.00	D	80	2000

(Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM
740	152.0	100	0.0	

REDUCED PUMP SPEED: @ 0 @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP: 0

MAX HOOKLOAD: 1000

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	1330	5.50	14	NIPPLE UP B.O.P. FUNTION HYD HCR MOTER KILLS
1330	1345	0.25	21	SAFETY MTG. PRE SPUD
1345	1400	0.25	21	BOP DRILL W/CREW
1400	1445	0.75	2	DRILL F1M TO 23M GRAVAL
1445	1600	1.25	5	COND MUD & CIRC
1600				

Notes: CHECK TONGS PINS LINES CROWN SAVER DEAD LINE +CLAMPS

NO REPORTED INJUREIS

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR.: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Day.	R.M.
(1) Daily Walk Around Inspection	BN	WB
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)	BN	WB
(4) Well License & Stick Diagram Posted	BN	WB
(5) Flare Lines Staked	BN	WB
(6) BOP Drills Preformed	BN	WB
(7) Visually Inspect BOP's - Flarelines & Degasser Lines	BN	WB
(1) Rig Site Health and Safety Meeting (one/crew/month)		WB
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		WB
(3) Mast Inspection Before Raising or Lowering		WB
(4) Crown Saver Checked		WB
(5) Motor Kills Checked		WB

YEAR 2003 | MONTH 3 | DAY 8

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG 6100 | BOILER 5700

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
114	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRS	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN														8.00													8.00
DAY		0.50			1.25									5.50													7.25
EVE		5.50			1.25	0.75				0.50																	8.00
TOTAL		6.00			2.50	0.75				0.50				13.50													23.25

DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. OF D.C.			1000 daN
WT. OF STRING			1000 daN
DRILLERS SIGNATURE			

BIT RECORD

BIT NO.									
SIZE (mm)									
IADC CODE									
MFG.									
Type									
SERIAL NO.									
JETS (mm)									
DEPTH IN (m)									
DEPTH OUT (m)									
TOTAL METER									
TOTAL HOURS									
	INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm	OTHER	REASON	R.O.P.

DRAG daN

TORQUE

FILL m

MUD RECORD

WATER BASED ☐ OIL BASED ☐

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.0	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	800	8.00	14	NIPPLE UP DIVERTER

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

(1) Daily Walk Around Inspection
(2) Detailed Inspection Weekly (Using Check List)
(3) H2S Signs Posted(If Required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Preformed
(7) Visually Inspect BOP's - Flarelines & Degasser Lines

	Opr.	R.M.

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

YEAR 2003	MONTH 3	DAY 7
RIG NO.: 117		
FUEL @ 08:00 HRS.		
RIG	BOILER	

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	18			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS: YES ___ NO ___

TOP	TOP
110	70
MIDDLE 0	MIDDLE
BOTTOM 70	BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIG/UP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. B.H.A.			1000 daN
WT. OF STRING			1000 daN

DRILLERS SIGNATURE: JIM CARR

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
NFQ.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG daN
TORQUE
FILL m

MUD RECORD

WATER BASED ___ OIL BASED ___

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/C.P.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@ ___ @ ___

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
4.00	10.0	220

MACP
MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	2400	8.00	1	RIG UP &

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION.: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2003	MONTH 3	DAY 7	
RIG NO.: 117			
FUEL @ 08:00 HRS.			
RIG	BOILER		
WEATHER: TEMPERATURE			
CONDITIONS			
WIND DIRECTION			
ROAD CONDITION			

SAFETY TOPIC: SPOT LOADS

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 TYPE SWACO; TYPE; CHANGE SCREENS YES NO; TOP 110; MIDDLE 0; BOTTOM 70; TOP 70; MIDDLE; BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. OF D.C.			1000 dan
WT. OF STRING			1000 dan
DRILLERS SIGNATURE			

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm)	OTHER	REASON	R.O.P.

DRAG dan
TORQUE
FILL m

MUD RECORD

WATER BASED ☐ OIL BASED ☐

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@ @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
4.00	10.5	220

MACP
MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	815	0.25	21	SAFETY MTG. W/CREWS PRIOR TO SPOTTING RIG
815	1600	7.75	1	SPOT LOADS W/ALL NITE & RIG TO SPUD

Notes: NO REPORTED INJURIES

VISUAL INSPECTION & SAFETY MEETING W/CREW PRIOR TO RAISING DERRICK

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N C60:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA	SAFETY TOPIC	

	Opr.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one'crew/month)		
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2003 | MONTH 3 | DAY 7

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG | BOILER

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
4	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP 70

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM 70

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
W.O.B. D.C.			1000 dan
WT. OF STRING			1000 dan

DRILLERS SIGNATURE | JIM CARR

BIT RECORD

BIT NO.			
SIZE (mm)			
IADC CODE			
MFG.			
Type			
SERIAL NO.			
JETS (mm)			
DEPTH IN (m)			
DEPTH OUT (m)			
TOTAL METER			
TOTAL HOURS			

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL Vis s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)

PUMP NO. 1		PUMP NO. 2	
LINER(mm)	SPM	LINER(mm)	SPM

REDUCED PUMP SPEED

@ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	800	8.00	1	FOLLOW RIG TO FT LAIRD & WAIT ON DAYLITE
800				

Notes: NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36						
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP						
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150						
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)						
BRIAN NEIGUM	WALLY BRECKA						

	Opr.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A.O.D.C. Rig Safety Inspection Checklist(one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2003 | MONTH 3 | DAY 6

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG | BOILER

WEATHER: TEMPERATURE | CONDITIONS | WIND DIRECTION | ROAD CONDITION

SAFETY TOPIC: DRIVEING

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
14	62.45		70	155	4.5 XH	6			
5	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | TOP 70

MIDDLE 0 | MIDDLE

BOTTOM 70 | BOTTOM 70

RENTALS / SERVICES | Morn | Day | Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

BIT RECORD

DRILLING ASSEMBLY (AT END OF TOUR)			NO.
BIT/ MILLS	O.D mm	m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
		m	
DRILLPIPE	STANDS	m	
DRILLPIPE	SINGLES	m	
KELLY DOWN		m	
TOTAL		m	
O.D.C.		1000 daN	
WT. OF STRING		1000 daN	
DRILLERS SIGNATURE			

BIT NO.			
SIZE (mm)			
IADC CODE			
MFG.			
Type			
SERIAL NO.			
JETS (mm)			
DEPTH IN (m)			
DEPTH OUT (m)			
TOTAL METER			
TOTAL HOURS			
INNER			
OUTER			
DULL			
LOCATION			
BEARINGS			
GAGE(mm			
OTHER			
REASON			
R.O.P.			
DRAG daN			
TORQUE			
FILL m			

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FR.CK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa) | PUMP NO. 1 LINER(mm) | PUMP NO. 1 SPM | PUMP NO. 2 LINER(mm) | PUMP NO. 2 SPM

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW
HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE
1600	2400	8.00	1

TIME DETAIL

FOLLOW RIG TO NEW LOCATION

Notes: NO REPORTED INJURIES

DAY SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.	CONTRACTOR: PRECISION DRILLING, div OF PLP		
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W	UNIQUE I.D.: 300K366020123150		
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	CONTRACTORS REPRESENTATIVE : (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		
BRIAN NEIGUM	WALLY BRECKA		

(1) Daily Walk Around Inspection	Opr.	R.M.
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		

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

YEAR 2003	MONTH 3	DAY 6
RIG NO.: 117		
FUEL @ 08:00 HRS.		
RIG	BOILER	

WEATHER	
TEMPERATURE	
CONDITIONS	
WIND DIRECTION	
ROAD CONDITION	

SAFETY TOPIC

	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)
LAST CASING TUBING OR LINER									

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
[illegible]	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
HWD	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)			
NO. 1	TYPE SWACO	TYPE	
CHANGE SCREENS		YES	NO
TOP 110		TOP 70	
MIDDLE 0		MIDDLE	
BOTTOM 70		BOTTOM 70	

RENTALS / SERVICES	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIRING	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

DRILLING ASSEMBLY (AT END OF TOUR)

NO.	BIT/ MILLS	O.D.mm/in	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. B.H.A. D.C.			1000 dan
WT. OF STRING			1000 dan

DRILLERS SIGNATURE JIM CARR

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE(mm	OTHER	REASON	R.O.P.

DRAG dan	
TORQUE	
FILL m	

MUD RECORD

WATER BASED ☐ OIL BASED ☐

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@ @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
800	815	0.25	21	SAFETY MEETING W/CREWS PRIOR TO MOVEING
815	1600	7.75	1	LOAD RIG & MOVE F/PARA ET AL CAMERON M-49 TO
				PARA ET AL McKAY LAKES K-36,

Notes: NO REPORTED INJURIES

MORNING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K366020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

	Opr.	R.M.
(1) Daily Walk Around Inspection		
(2) Detailed Inspection-Weekly (Using Check List)		
(3) H2S Signs Posted(If Required)		
(4) Well License & Stick Diagram Posted		
(5) Flare Lines Staked		
(6) BOP Drills Preformed		
(7) Visually Inspect BOP's - Flarelines & Degasser Lines		
(1) Rig Site Health and Safety Meeting (one/crew/month)		
(2) C.A..O.D.C. Rig Safety Inspection Checklist(one/rig/month)		
(3) Mast Inspection Before Raising or Lowering		
(4) Crown Saver Checked		
(5) Motor Kills Checked		

YEAR 2003 | MONTH 3 | DAY 6

RIG NO.: 117

FUEL @ 06:00 HRS.

RIG | BOILER

WEATHER: TEMPERATURE; CONDITIONS; WIND DIRECTION; ROAD CONDITION

SAFETY TOPIC

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN.ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
4	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
)	62.45		70	155	4.5 XH	6			
65	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S): NO. 1 | TYPE SWACO | TYPE

CHANGE SCREENS | YES | NO

TOP 110 | MIDDLE 0 | BOTTOM 70

TOP 70 | MIDDLE | BOTTOM 70

RENTALS / SERVICES	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN	8.00																										8.00
DAY	7.75																				0.25						8.00
EVE	8.00																										8.00
TOTAL	23.75																				0.25						24.00

BIT RECORD

NO.	DRILLING ASSEMBLY (AT END OF TOUR)		
	BIT/ MILLS	O.D.mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
	KELLY DOWN		m
	TOTAL		m
	WT. OF D.C.		1000 dan
	WT. OF STRING		1000 dan

DRILLERS SIGNATURE: RICK KNUPP

BIT NO.		
SIZE (mm)		
IADC CODE		
MFG.		
Type		
SERIAL NO.		
JETS (mm)		
DEPTH IN (m)		
DEPTH OUT (m)		
TOTAL METER		
TOTAL HOURS		

INNER	OUTER	DULL	LOCATION	BEARINGS	GAGE(mm	OTHER	REASON	R.O.P.

DRAG dan

TORQUE

FILL m

MUD RECORD

WATER BASED | OIL BASED

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED @ | @

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HRS. RUN	BOILER PH	STACK deg
8.00	10.5	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
0	800	8.00	1	WAIT ON DAYLITE

Notes: NO REPORTED INJURIES

EVENING SHIFT

LICENCE NO.: 1966	WELL NAME AND NO.: PARAMOUNT ET AL McKAY LAKES K-36		
OPERATOR: PARAMOUNT RESOURCES LTD.		CONTRACTOR: PRECISION DRILLING, div OF PLP	
SURFACE LOCATION: 60:13:12.00 N 060:20:38.00 W		UNIQUE I.D.: 300K360020123150	
OPERATORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)		CONTRACTORS REPRESENTATIVE: (I VERIFY AND ACCEPT INFORMATION ON TOUR SHEET TO BE TRUE & CORRECT TO THE BEST OF MY ABILITY)	
BRIAN NEIGUM		WALLY BRECKA	

(1) Daily Walk Around Inspection
(2) Detailed Inspection-Weekly (Using Check List)
(3) H2S Signs Posted(If Required)
(4) Well License & Stick Diagram Posted
(5) Flare Lines Staked
(6) BOP Drills Performed
(7) Visually Inspect BOP's - Flarelines & Degasser Lines

Opr.	R.M.
	WB

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

WB	
WB	

YEAR 2003 | MONTH 3 | DAY 5

RIG NO.: 117

FUEL @ 08:00 HRS.

RIG | BOILER

WEATHER

TEMPERATURE	-34
CONDITIONS	CLEAR
WIND DIRECTION	NORTH
ROAD CONDITION	ICE

SAFETY TOPIC: LOWERING DERRICK

LAST CASING TUBING OR LINER	O.D. mm	MIN. I.D	kg/m	MAKE	GRADE	# OF JOINTS	TOTAL (m)	KB TO CSG.	SET AT (m)

DC . DP SIZE	KG / M	GRADE	MIN. ID	TOOL JT. O.D.	TYPE THREAD	# OF JOINTS	PUMP MANUFACTURER	PUMP TYPE	STROKE LTH.
114	24.70	E	72	155	4.5 XH	182	BAOJI	F - 800	229
	62.45		70	155	4.5 XH	6			
	142.90		64	165	4.5 XH	16			

SHALE SHAKER(S)

NO.	TYPE	TYPE
1	SWACO	

CHANGE SCREENS: YES | NO

TOP 110	TOP 70
MIDDLE 0	MIDDLE
BOTTOM 70	BOTTOM 70

RENTALS / SERVICES

	Morn	Day	Eve

CODE NO.:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	TOTAL
OPER.	RIGUP & TEARDOWN	DRILL ACTUAL	REAMING	CORING	COND. MUD & CIRC.	TRIPS	RIG SERVICE	REPAIR RIG	CUT OFF DRLG. LINE	DEV. SURVEY	WIRELINE LOGS	RUN CSG. & CEMENT	WAIT ON CEMENT	NIPPLE UP B.O.P	TEST B.O.P.	DRILL STEM	PLUG BACK	SQUEEZE CEMENT	FISHING	DIRECTIONAL WORK	SAFETY MEETING						
MORN																											
DAY																											
EVE	8.00																										8.00
TOTAL	8.00																										8.00

NO. DRILLING ASSEMBLY (AT END OF TOUR)

	BIT/ MILLS	O.D./mm	m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
			m
	DRILLPIPE	STANDS	m
	DRILLPIPE	SINGLES	m
KELLY DOWN			m
TOTAL			m
WT. O.D.C.			1000 dan
WT. OF STRING			1000 dan

DRILLERS SIGNATURE: RICK KNUPP

BIT RECORD

BIT NO.	
SIZE (mm)	
IADC CODE	
MFG.	
Type	
SERIAL NO.	
JETS (mm)	
DEPTH IN (m)	
DEPTH OUT (m)	
TOTAL METER	
TOTAL HOURS	

INNER	OUTER	DULL	LOCATION	BEARINGS	GAUGE/mm	OTHER	REASON	R.O.P.

DRAG dan	
TORQUE	
FILL m	

MUD RECORD

WATER BASED [ ] OIL BASED [ ]

TIME			
DENSITY kg/m3			
FUNNEL VIS s/l			
W.L. cm/ FILCK			
PH			

MUD MATERIALS USED

TYPE	QTY	UNITS

DEVIATION SURVEY

DEPTH (m)	DEVIATION	DIRECTION

METERS DRILLED

FROM	TO	DRILL/ REAM/CR.	ROTARY R.P.M.	WT. ON BIT

Circ. Press (kPa)	PUMP NO. 1 LINER(mm)	PUMP NO. 1 SPM	PUMP NO. 2 LINER(mm)	PUMP NO. 2 SPM

REDUCED PUMP SPEED

@		@	

SOLIDS CONTROL EQUIPMENT

DESILTER

HOURS	INTAKE	OVERFLOW	UNDERFLOW

CENTRIFUGE

HOURS	INTAKE	OVERFLOW	UNDERFLOW

HOURS	INTAKE	OVERFLOW	UNDERFLOW

BOILER

HRS. RUN	PH	STACK deg
8.00	10.5	220

MACP

MAX HOOKLOAD

TIME LOG

FROM	TO	ELAPSED TIME	CODE	TIME DETAIL
1600	2400	8.00	1	RIG UP & TEAR DOWN

Notes: NO REPORTED INJURIES

SAFETY MEETING & VISUAL INSPECTION OF DERRICK W/CREW PRIOR TO LOWERING