



**Delta-P Test Corp.**

## **Drill Stem Test Report**

**Northern Cross (Yukon) Ltd.**

**October 12, 2012**

NCY E Chance E-78  
Fishing Branch  
Well License:

300E786610137000  
489.00 - 499.00 mKB  
1129

DST # 6  
AFE#: 1c-020-D02  
Invoice# : 2009

NCY E Chance E-78  
 Fishing Branch

 300E786610137000  
 489.00 to 499.00 mKB

 DST # 6  
 AFE#: 1c-020-D0  
 Job#: 2009

Tool Description	Length (m)	Ser#
Marker Sub	0.00	
Pump Out Sub (Pin Act.)	0.31	
Cross Over Sub	0.31	
Pump Out Sub (Press. Act)	0.31	
Fluid Recorder	1.31	77044
Hydraulic Shut-in Tool	2.06	
Fluid Sampler	1.00	0
Inside Recorder	1.31	76758
WTD Recorder	5.84	
Jars	1.82	
Safety Joint	0.69	
Pump	2.55	
Screen	1.05	
Top Packer	1.67	
T.C.	0.72	
Bundle Carrier	1.25	
Outside #1		76884
Outside #2		76301
Inflate Recorder		76903
Blank Spacing	7.51	
Crossover Sub	0.00	
Drill Collars	0.00	
Crossover Sub	0.00	
Stub	0.55	
Bottom Packer	1.71	
Below Straddle Recorder		0
Belly Spring	2.20	
<b>Tool Above Interval</b>	<b>20.23 m</b>	
<b>DST Tool Length</b>	<b>34.17 m</b>	
<b>Test Interval Length</b>	<b>10.03 m</b>	

Test Time, Pressure, and Flow Summary			
Recorder:	Outside #1	Recorder Ser #	76884
		Depth	501 m

Times			
<b>Preflow :</b>	17:24:00	to	17:35:00
<b>Mainflow:</b>	18:21:00	to	18:51:00
<b>ThirdFlow:</b>	19:53:00	to	20:10:00
<b>Initial Shutin :</b>	17:35:00	to	18:20:00
<b>Final Shutin:</b>	18:51:00	to	19:53:00
<b>Third Shutin:</b>	20:10:00	to	20:24:00
<b>Duration:</b>			
			11.0 min.
			30.0 min.
			17.0 min.
			45.0 min.
			62.0 min.
			14.0 min.

Pressures (kPa)			
<b>Preflow:</b>	1379 kPa	to	1348 kPa
<b>Mainflow :</b>	1381 kPa	to	1796 kPa
<b>Thirdflow:</b>	1820 kPa	to	1899 kPa
<b>Initial Shutin:</b>			2142 kPa
<b>Final Shutin:</b>			2130 kPa
<b>Third Shutin:</b>			2111 kPa
<b>Initial Hydrostatic:</b>	5976 kPa	<b>Final Hydrostatic:</b>	5873 kPa

### MAINFLOW: Gas Flow Rates

Time	Orifice Size	Flow Pressure	Flow Rates
5 min	mm	kPa	m3/D
10 min	mm	kPa	m3/D
15 min	mm	kPa	m3/D
20 min	mm	kPa	m3/D
25 min	mm	kPa	m3/D
30 min	mm	kPa	m3/D
35 min	mm	kPa	m3/D
40 min	mm	kPa	m3/D
45 min	mm	kPa	m3/D
50 min	mm	kPa	m3/D
55 min	mm	kPa	m3/D
60 min	mm	kPa	m3/D
65 min	mm	kPa	m3/D
70 min	mm	kPa	m3/D
75 min	mm	kPa	m3/D
80 min	mm	kPa	m3/D
85 min	mm	kPa	m3/D
90 min	mm	kPa	m3/D
95 min	mm	kPa	m3/D
100 min	mm	kPa	m3/D
105 min	mm	kPa	m3/D
110 min	mm	kPa	m3/D
115 min	mm	kPa	m3/D
120 min	mm	kPa	m3/D

Test Tool String Weights			
<b>Tool Weight</b>	2000 daN	<b>Hole Drag Down</b>	3000 daN
<b>Initial String Weight</b>	26000 daN	<b>Hole Drag Up</b>	4000 daN
<b>Unseated String</b>	26000 daN	<b>Weight to Open</b>	5000 daN



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DST # 6  
 AFE#: 1c-020-D  
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General Information			
Well License	1129	Test Type	Inflate Straddle
Client Representative	Justin Cobain / Rod Bere	Total Depth	955.0 m
Phone Number	0	K.B Elevation	609.70 m
Head Office Contact	John Gray	Ground Elevation	604.79 m
Office Phone Number	403-237-0055	Drill Pipe I.D.	82.30 mm
Office Fax Number		Heavy Weight I.D.	0.00 mm
DST Supervisor	Joe Buziak	Drill Collar I.D.	60.00 mm
DST Unit #	908	Bore Hole Size	222.00 mm
DST Unit Phone #	403-396-2633	Element Rubber	196.00 mm
Drilling Contractor	NCY	Bottom Hole Choke	19.05 mm
Rig #	1	Hole Condition	Poor
		Hole Deviation	No
		Cushion?	No
		Tool Chased?	No
		Mud Drop?	No
		Mud Type	Gel/chem
		Mud Weight	1250 kg/m <sup>3</sup>
		Mud Viscosity	70 s/l
		Water Loss	8.3 cm <sup>3</sup>
		Mud Hydrostatic	12.26 kPa/m

Recovery Information			
Lab Company	Core Lab		
Total Fluid Recovered	128 m		
<u>Length</u>	<u>Description</u>	<u>Salinity (ppm)</u>	<u>pH</u>
128 m of	Drilling mud		
0 m of		0	
0 m of		0	
0 m of		0	
0 m of		0	
0 m of	All samples left on location.	0	
0 m of		0	
Total Fluid Samples (Including mud tank sample)	5 Sample Bottles		
Bottom Hole Sampler Serial Numbers:	;		
Gas Bomb Serial Number(s) Preflow			
Gas Bomb Serial Number(s) Mainflow	0 ; 0		

Initial Sampler Recovery Information	
Date of pick up: _____	Lab Company Rep (please print): _____
Time of pick up: _____	Lab Company Rep (Signature): _____
Opening pressure of downhole sampler: _____	kpa
Total Volume of downhole sampler: _____	cc
Recovered Volume of downhole sampler: _____	cc
Miscellaneous Notes: _____	
Please note that this is a field observation and a detailed analysis of the recovery will be forth-coming from the lab company	



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		Cushion?	No
		Tool Chased?	No
		Mud Drop?	No
		Mud Type	Gel/chem
		Mud Weight	1250 kg/m <sup>3</sup>
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		Water Loss	8.3 cm <sup>3</sup>
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Lab Company	Core Lab		
Total Fluid Recovered	128 m		
<u>Length</u>	<u>Description</u>	<u>Salinity (ppm)</u>	<u>pH</u>
128 m of	Drilling mud		
0 m of		0	
0 m of		0	
0 m of		0	
0 m of		0	
0 m of	All samples left on location.	0	
0 m of		0	
Total Fluid Samples (Including mud tank sample)	5 Sample Bottles		
Bottom Hole Sampler Serial Numbers:	;		
Gas Bomb Serial Number(s) Preflow			
Gas Bomb Serial Number(s) Mainflow	0 ; 0		

Initial Sampler Recovery Information	
Date of pick up: _____	Lab Company Rep (please print): _____
Time of pick up: _____	Lab Company Rep (Signature): _____
Opening pressure of downhole sampler: _____	kpa
Total Volume of downhole sampler: _____	cc
Recovered Volume of downhole sampler: _____	cc
Miscellaneous Notes: _____	
_____	
_____	
Please note that this is a field observation and a detailed analysis of the recovery will be forth-coming from the lab company	

**DELTA-P TEST CORP. FLOW RATES**

<b>Main Flow</b>			
Time	Orifice Size (mm)	Flow Pressure (kPa)	Flow Rate (m3/D)
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
80			
85			
90			
95			
100			
105			
110			
115			
120			

<b>Optional Third Flow</b>			
Time	Orifice Size (mm)	Flow Pressure (kPa)	Flow Rate (m3/D)
5			
10			
15			
20			
25			
30			
35			
40			
45			
50			
55			
60			
65			
70			
75			
80			
85			
90			
95			
100			
105			
110			
115			
120			

**DST Time and Pressure Summary**

*All times as (dd/mmm/yyyy hh:mm:ss)*

	Time	BHP (kPa)
Initial Hydrostatic	Oct/12/12 17:05:00	5,976
Start Prewflow	Oct/12/12 17:24:00	1,379
End Prewflow	Oct/12/12 17:35:00	1,348
Initial Shut-In	Oct/12/12 18:20:00	2142
Start Mainflow	Oct/12/12 18:21:00	1,381
End Mainflow	Oct/12/12 18:51:00	1,796
Final Shut-In	Oct/12/12 19:53:00	2,130
Final Hydrostatic	Oct/12/12 20:35:00	5,873

Prewflow Time (min)	11.00
Mainflow Time (min)	30.00
Initial Shut-in Time (min)	45.00
Final Shut-in Time (min)	62.00

Optional Flow Start	Oct/12/12 19:53:00	1,820
Optional Flow End	Oct/12/12 20:10:00	1,899
Optional Shut-In	Oct/12/12 20:24:00	2,111
Optional Flow Time	17.00	
Optional Shut-In Time	14.00	

Recorder Used  
Recorder Depth  
Recorder Ser #.

Outside #1	501
	76884



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Phone Number	0	K.B Elevation	609.70 m	Hole Deviation	No
Head Office Contact	John Gray	Ground Elevation	604.79 m	Cushion?	No
Office Phone Number	403-237-0055	Drill Pipe I.D.	82.30 mm	Tool Chased?	No
Office Fax Number		Heavy Weight I.D.	0.00 mm	Mud Drop?	No
DST Supervisor	Joe Buziak	Drill Collar I.D.	60.00 mm	Mud Type	Gel/chem
DST Unit #	908	Bore Hole Size	222.00 mm	Mud Weight	1250 kg/m3
DST Unit Phone #	403-396-2633	Element Rubber	196.00 mm	Mud Viscosity	70 s/l
Drilling Contractor	NCY	Bottom Hole Choke	19.05 mm	Water Loss	8.3 cm3
Rig #	1			Mud Hydrostatic	12.26 kPa/m

Preflow Comments:

See closed chamber report

Mainflow Comments:

See closed chamber report

Additional Comments:

Tool opened while working tight hole prior to inflating packers

Recovery Information

Lab Company	Core Lab		
Total Fluid Recovered	128 m		
Length	Description	Salinity (ppm)	pH
128 m of	Drilling mud	0	
		0	
Total Fluid Samples (Including mud tank sample)		5 Sample Bottles	
Bottom Hole Sampler Serial Numbers:			
Gas Bomb Serial Number(s) Preflow			
Gas Bomb Serial Number(s) Mainflow			
Gas Bomb Serial Number(s) Third flow		All samples left	



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**Pipe Tally Sheet**

Drill Collars		Heavy Weight		Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe	
1	12.83	1	0.83	1	12.61	11	12.91	21	12.94	31		41	
2	12.81	2		2	12.90	12	12.67	22	12.62	32		42	
3	12.82	3		3	12.56	13	12.61	23	12.95	33		43	
4	12.80	4		4	12.93	14	12.93	24	12.91	34		44	
5	12.80	5		5	12.63	15	12.93	25	12.92	35		45	
6	12.80	6		6	12.89	16	12.93	26	12.94	36		46	
7	12.80	7		7	12.86	17	12.58	27	12.57	37		47	
8	12.80	8		8	12.92	18	12.58	28		38		48	
9	12.83	9		9	12.93	19	12.59	29		39		49	
10	12.80	10		10	12.90	20	12.59	30		40		50	
DC	128.09	HW	0.83	1	128.13	2	127.32	3	89.85	4	0.00	5	0.00

Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe		Drill Pipe Total	
51		61		71		81		91		101		1	128.13
52		62		72		82		92		102		2	127.32
53		63		73		83		93		103		3	89.85
54		64		74		84		94		104		4	0.00
55		65		75		85		95		105		5	0.00
56		66		76		86		96		106		6	0.00
57		67		77		87		97		107		7	0.00
58		68		78		88		98		108		8	0.00
59		69		79		89		99		109		9	0.00
60		70		80		90		100		110		10	0.00
6	0.00	7	0.00	8	0.00	9	0.00	10	0.00	11	0.00	11	0.00
											Stabbing Valve	0.49	

Before Test in Derrick		At Test Depth		In	Out	Total
Total Drill Collars	10	Total Drill Collars		10	0	10
Total Heavy Weight	0	Total Heavy Weight		0	0	0
Total Drill Pipe	64	Total Drill Pipe		27	37	64

Total DP   
Total DC

**Procedures for running in hole with DST tools:**

1. Run tools in slowly to avoid surge pressures
2. Do not rotate drill string
3. Pump out sub must be placed on top of first drill collar
4. Notify DST Supervisor for following conditions:
  - a. If hole gets tight running in or out
  - b. If a bridge is encountered
  - c. If any fluid is encountered in pipe

Total HWT

Tool to Bottom of Top Packer

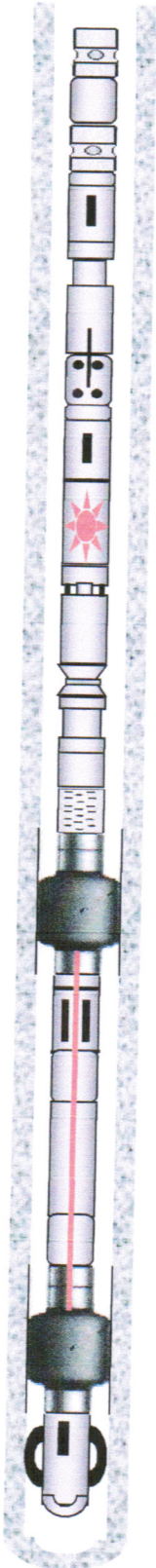
Total Strings Above Interval

Top of Interval Depth

Top Single Above Table

By signing below, I certify that I am the authorized representative of the above named Operator. I have reviewed the drill pipe tally as shown above and agree that it is correct to the best of my knowledge. On behalf of the above named Operator, I agree to accept responsibility for the Drill Stem Test tools after they are placed below the table into the wellbore and will pay the actual cost of replacement, repair, or any recovery operations of the above mentioned Drill Stem Test Tools.

Company Representative: \_\_\_\_\_

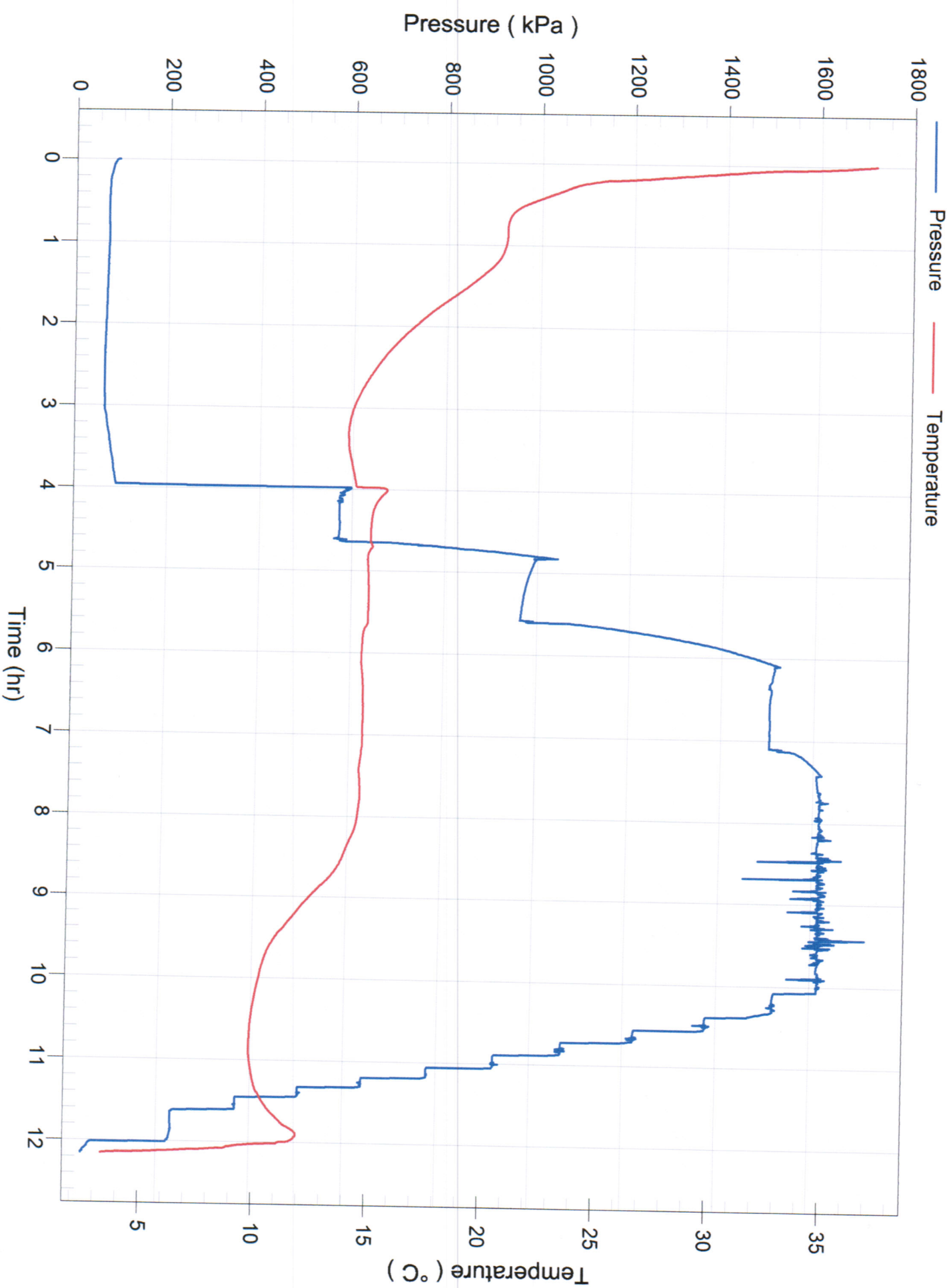


<u>Tool Description</u>	<u>Length</u>	<u>Ser#</u>	
Marker Sub	0.00		
Pump Out Sub (Pin Act.)	0.31		
Cross Over Sub	0.31		
Pump Out Sub (Press. Act)	0.31		
Fluid Recorder	1.31	77044	
Hydraulic Shut-in Tool	2.06		
Fluid Sampler	1.00	0	
Fluid Sampler		0	
Inside Recorder	1.31	76758	
WTD Recorder	5.84		
Jars	1.82		
Safety Joint	0.69		
Pump	2.55		
Screen	1.05		
Top Packer	1.67		
			<b>Total to bottom of top Packer</b>
			20.23 m
T.C.	0.72		
Bundle Carrier	1.25		
Outside #1		76884	
Outside #2		76301	<b>Test Interval Length (from Tool)</b>
Inflate Recorder		76903	10.03
Blank Spacing	7.51		
Crossover Sub	0.00		
Drill Collars	0.00		
Crossover Sub	0.00		
Stub	0.55		
Bottom Packer	1.71		
			<b>Total Tool Length</b>
Below Straddle Recorder		0	34.17 m
Belly Spring	2.20		



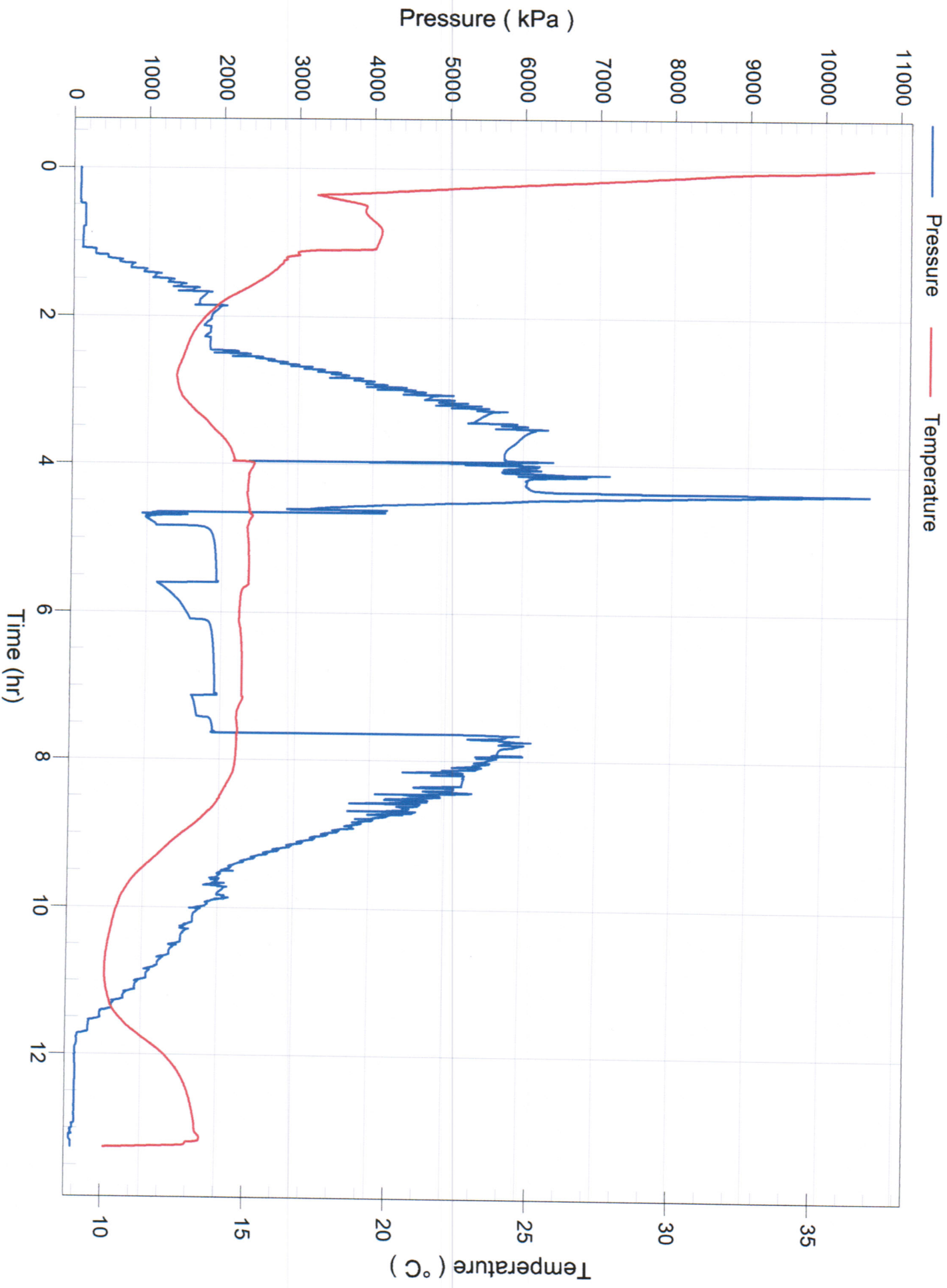
# NCY E Chance E-78 300E786610137000 DST # 6 Fishing Branch 489 m - 499 m

Fluid recovery rec # 77044 Oct 12, 2012



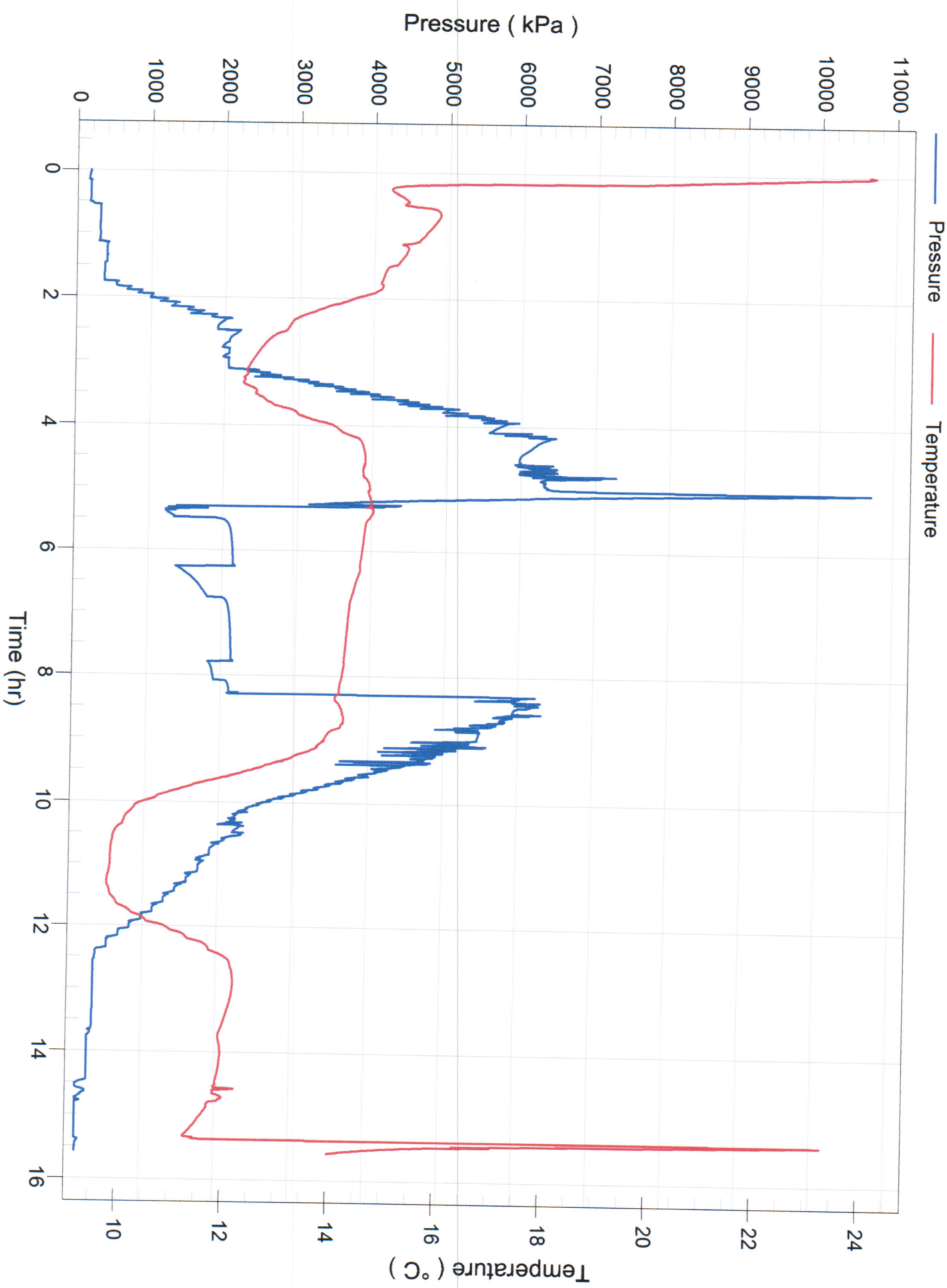
# NCY EChance E-78 300E786610137000 DST # 6 Fishing Branch 489 m - 499 m

Inside rec # 76758 Oct. 12, 2012



# NCY E Chance E-78 300E786610137000 DST # 6 Fishing Branch 489 m - 499 m

Outside rec # 76884 Oct. 12, 2012



**NCY E Chance E-78 300E786610137000 DST # 6 Fishing Branch 489 m - 499 m**

Outside spare rec # 76301 Oct. 12, 2012

