COMPANY: **NORTHWEST NATURAL GAS**

WELL: **OM-32-22-65**

FIELD: **CALVIN CREEK GAS STORAGE**

COUNTY: **COLUMBIA** **STATE:** **OREGON**

COUNTY: COLUMBIA
Field CALVIN CREEK GAS STORAGE
Location: 1884.04' S & 1261.26' E FROM T
Well: OM-32-22-65
Company: NORTHWEST NATURAL GAS

Schlumberger

PLATFORM EXPRESS
BHC SONIC /SP/ GR
5" = 100'

LOCATION
1884.04' S & 1261.26' E FROM THE
NE CORNER OF SECTION 22

Elev.: K.B. 762 F
G.L. 753 F
D.F.

Permanent Datum:	GROUND LEVEL	Elev.:	753 F
Log Measured From:	KELLY BUSHING	9.0 F	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		

API Serial No.	SECTION	TOWNSHIP	RANGE
	22	6N	5W

Logging Date	22-JUL-1998				
Run Number	ONE				
Depth Driller	2365 F				
Schlumberger Depth	2365 F				
Bottom Log Interval	2357 F				
Top Log Interval	425 F				
Casing Driller Size @ Depth	8.625 IN	@ 425 F		@	
Casing Schlumberger	425 F				
Bit Size	7.875 IN				
Type Fluid In Hole	CYPAN				
MUD Density | Viscosity	9.5 LB/G	45 S			
MUD Fluid Loss | PH	7.8 C3	8			
Source Of Sample	FLOWLINE				
RM @ Measured Temperature	1.870 OHMM	@ 80 DEGF		@	
RMF @ Measured Temperature	1.910 OHMM	@ 70 DEGF		@	
RMC @ Measured Temperature	1.650 OHMM	@ 70 DEGF		@	
Source RMF | RMC	PRESS	PRESS			
RM @ MRT | RMF @ MRT	1.579 @ 96	1.427 @ 96	@		@
Maximum Recorded Temperatures	96 DEGF				
Circulation Stopped | Time	22-JUL-1998	2:30			
Logger On Bottom | Time	22-JUL-1998	5:30			
Unit Number | Location	3152	SACRAMENTO			
Recorded By	JASON GENDUR				
Witnessed By	JACK MEYER				

	Run 1	Run 2

Logging Date		
Run Number		
Depth Driller		
Schlumberger Depth		
Bottom Log Interval		
Top Log Interval		
Casing Driller Size @ Depth	@	
Casing Schlumberger		
Bit Size		
Type Fluid In Hole		
MUD Density | Viscosity		
MUD Fluid Loss | PH		
Source Of Sample		
RM @ Measured Temperature	@	
RMF @ Measured Temperature	@	
RMC @ Measured Temperature	@	
Source RMF | RMC		
RM @ MRT | RMF @ MRT	@	@
Maximum Recorded Temperatures		
Circulation Stopped | Time		
Logger On Bottom | Time		
Unit Number | Location		
Recorded By		
Witnessed By		

@

@ @ @ @

@

Run 3

Run 4

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 INTERPRETATIONS, 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 CLAUSE 4 OF OUR GENERAL TERMS AND CONDITIONS AS SET OUT IN OUR CURRENT PRICE SCHEDULE.

OTHER SERVICES1	OTHER SERVICES2
OS1:	OS1:
OS2:	OS2:
OS3:	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1

Thank you for choosing Schlumbeger!

AIT run with 1" standoffs.

CNL run with bowspring for eccentralization.

Log run on sandstone matrix = 2.65 g/c3.

Your crew today is Forehand & Tye.

REMARKS: RUN NUMBER 2

RUN 1

SERVICE ORDER # 1222172
PROGRAM VERSION 8C1-205
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #
PROGRAM VERSION
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-J/Y WITM (CTS)-A
NCT-B
CNB-AB
NCS-VB

DOWNHOLE EQUIPMENT

LEH-Q
LEH-Q 3052

69.3

RUN 2

TCC-B 67.1

ECH-KC 2891
TCC-B

DSLT-TCC 64.1

DSLC-BA 8235
ECH-KH
SLS-WA 1556

AH-FLX 43.5

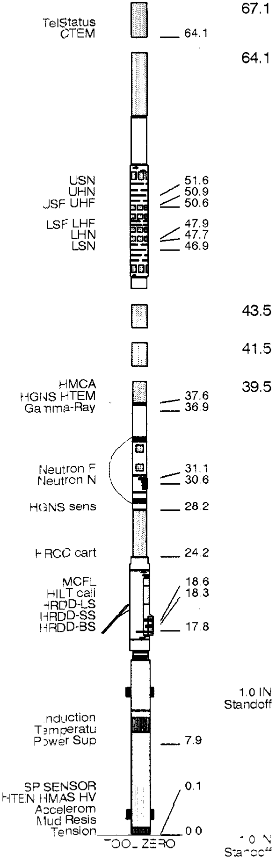
AH-FLX 82

AH-FLX 41.5

AH-FLX 77

HILTB-DTB 39.5

HTBCC
HMCA
HGNS-CAN-B
HGNS-H
NLS-KL 2284
NSR-F
HACCZ
HCNT
HGR
HRCC-B 723
HRMS-B 723
HRGD 723
GLS-VJ 1924
MCFL Device
HILT Nucl. LS
HILT Nucl. SS
HILT Nucl. BS
AIT-H
AHIS-BA 112
BOW-SPR
NPV-N



MAXIMUM STRING DIAMETER 5.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Input DLIS Files

DEFAULT	HILTB .037	FN:1	FIELD	22-Jul-1998 12:54	2370.0 FT	249.7 FT

Output DLIS Files

DEFAULT	HILTB .038	FN:31	FIELD	22-Jul-1998 13:19	2370.0 FT	250.0 FT

OP System Version: 8C1-205

MCM

HILTB-DTB	APCW-98Q1	DSLT-TCC	8C1-205
TCC-B	APCW-98Q1		

PIP SUMMARY

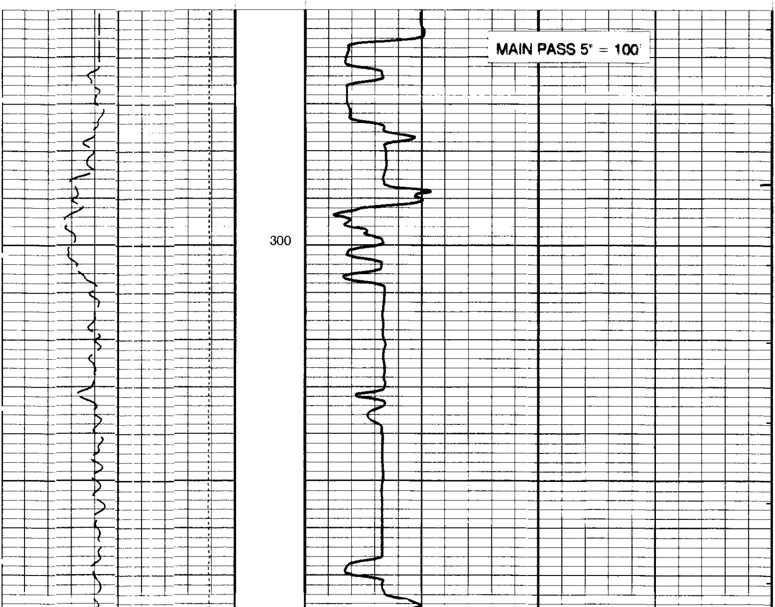
Integrated Transit Time Minor Pip Every 1 MS ⊣
Integrated Transit Time Major Pip Every 10 MS ⊣

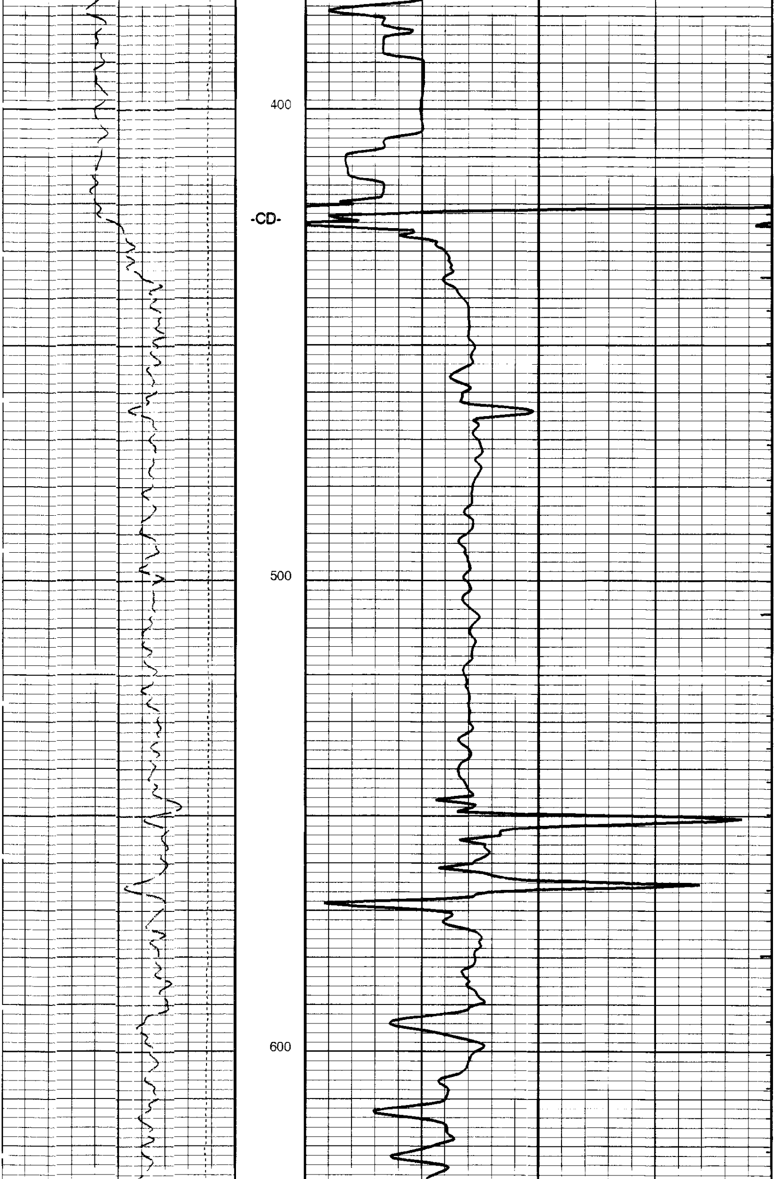
■ Time Mark Every 60 S

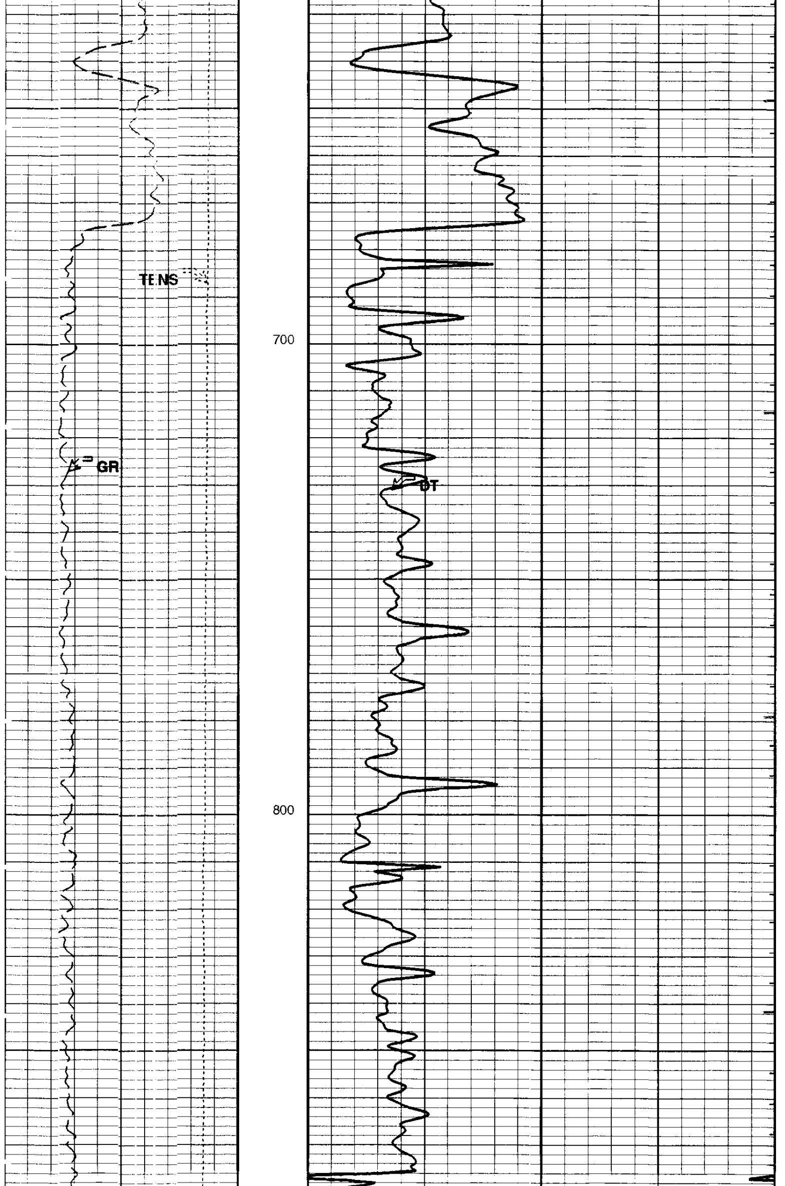
Tension (TENS)
10000 (LBF) 0

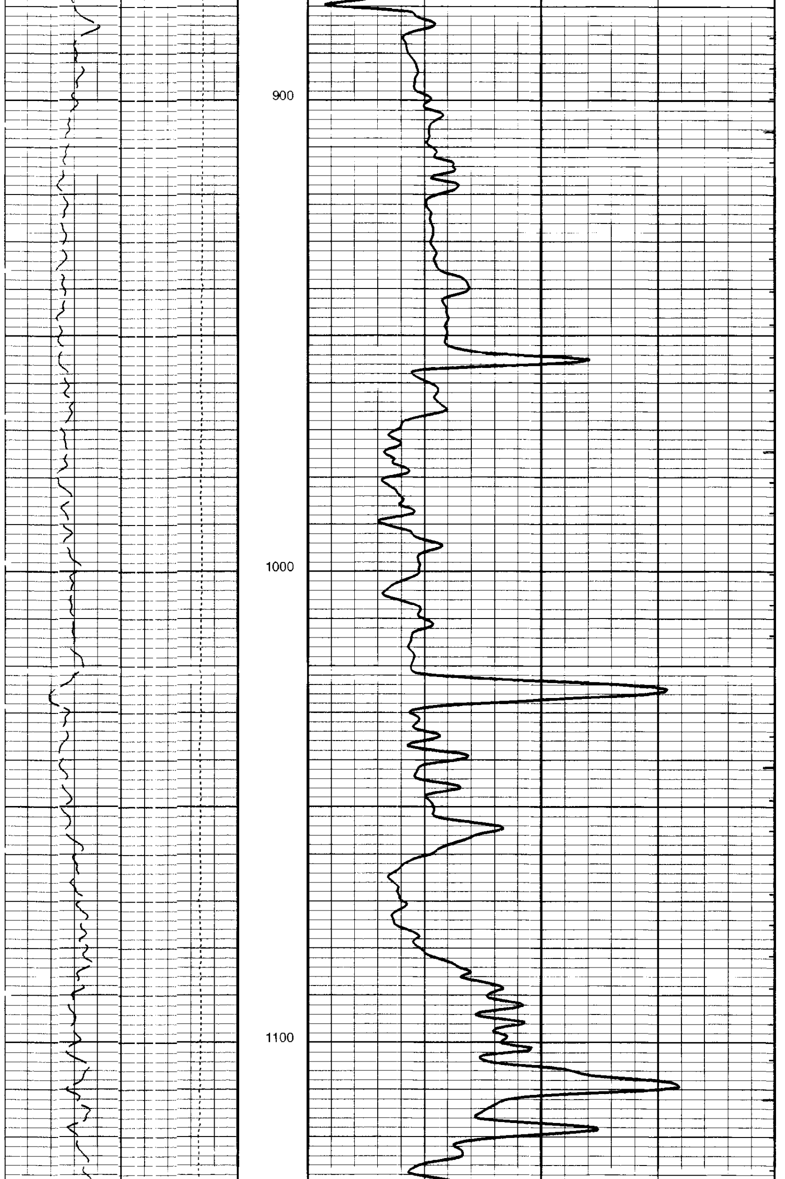
Gamma Ray (GR)
0 (GAPI) 150

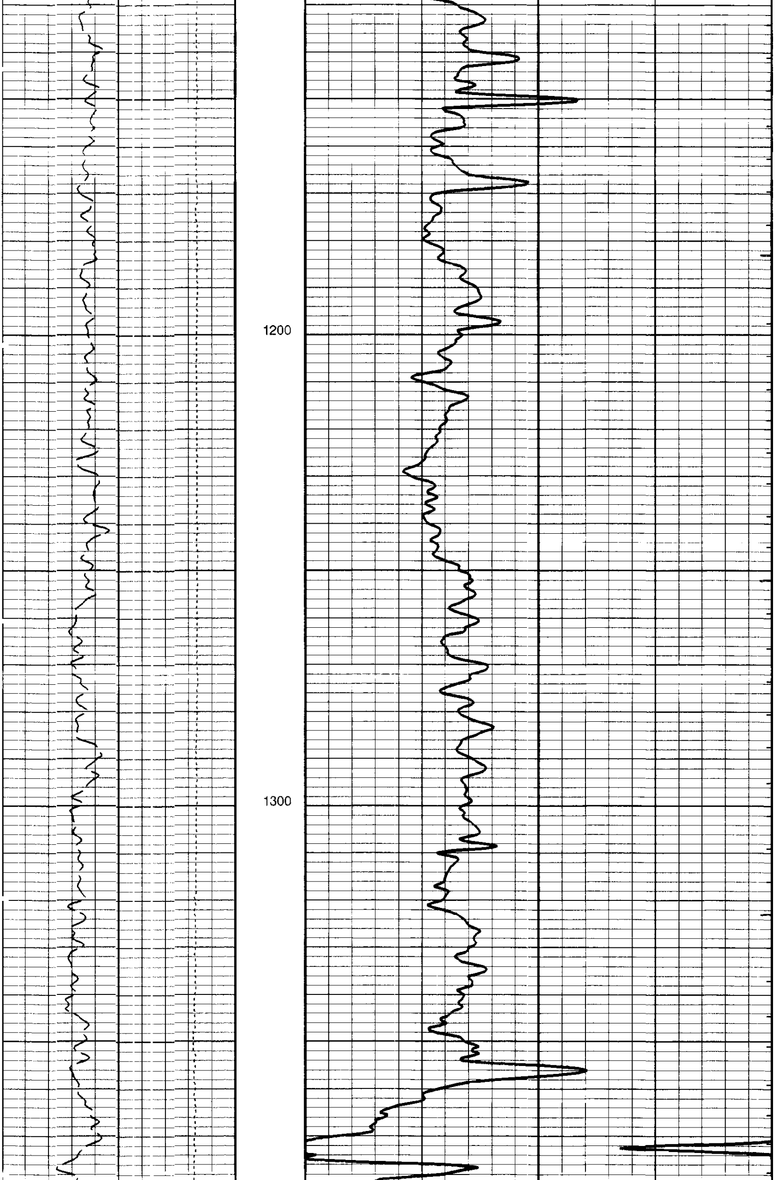
Delta-T (DT)
175 (US/F) 75

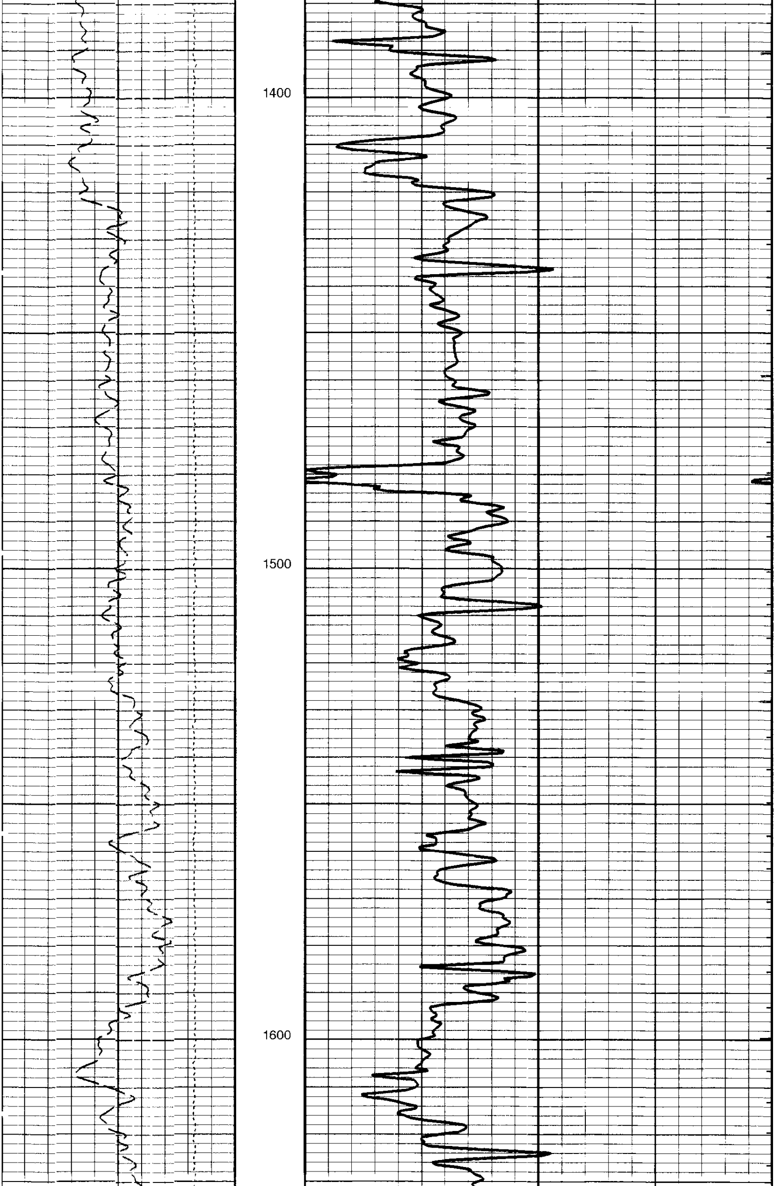


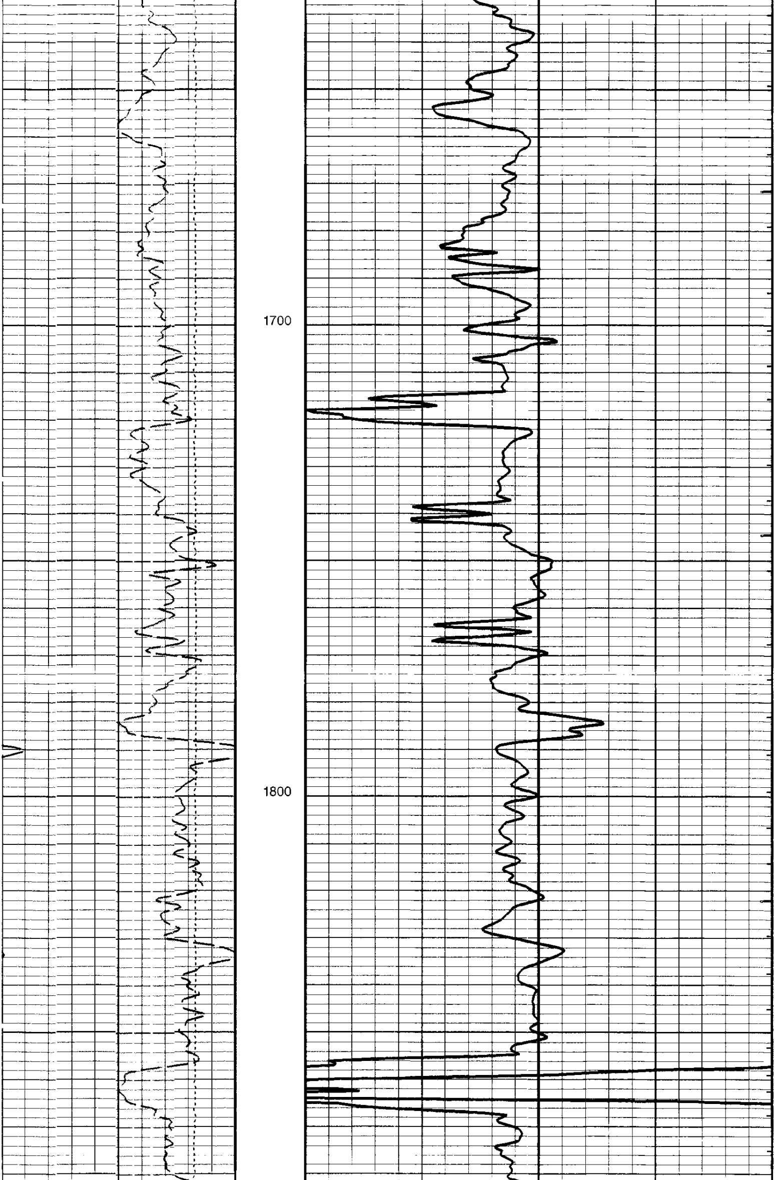


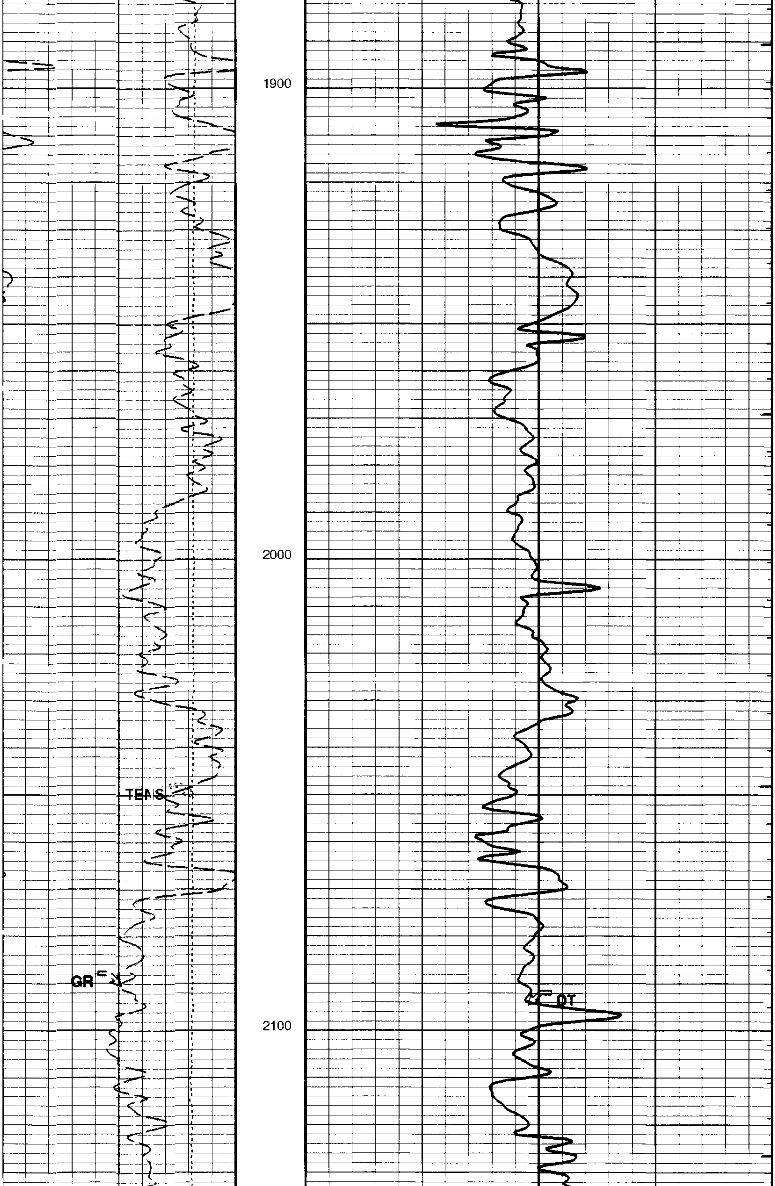


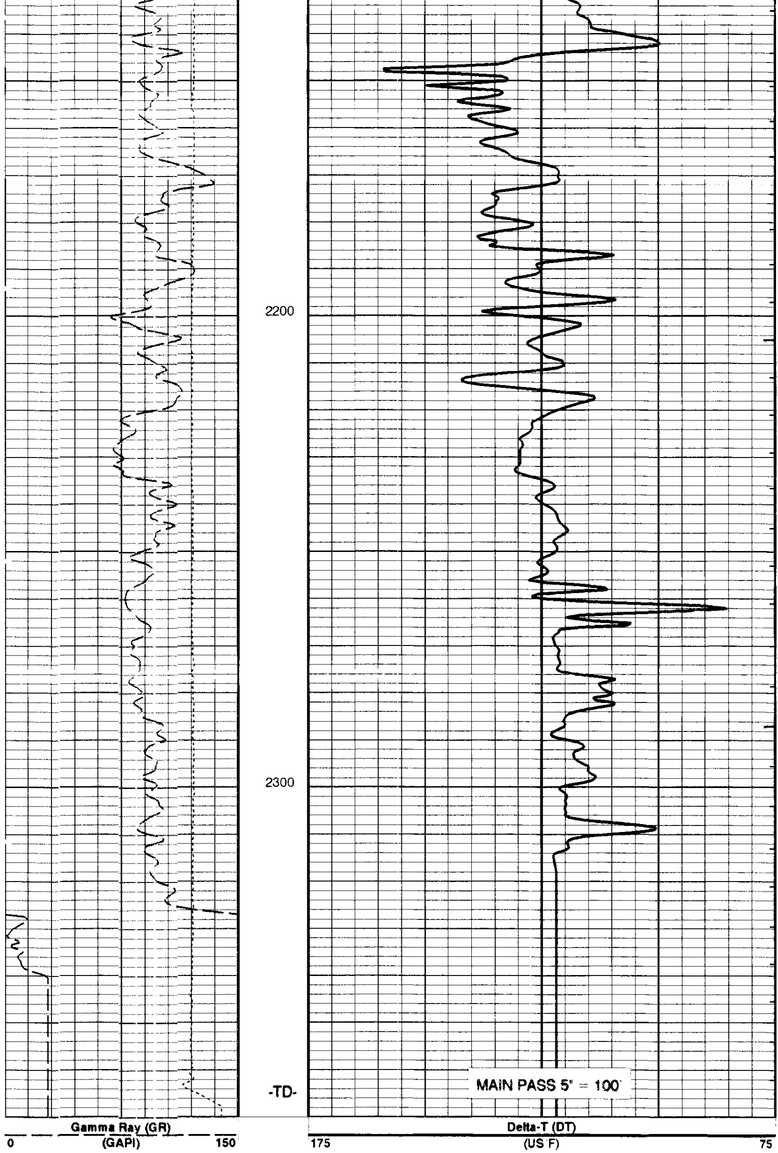












Tension (TENS)
10000 (LBF) 0

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS

Time Mark Every 60 S

Format: SSONIC Vertical Scale: 5" per 100' Graphics File Created: 22-Jul-1998 13:19

OP System Version: 8C1-205

MCM

HILTB-DTB	APCW-98Q1	DSLT-TCC	8C1-205
TCC-B	APCW-98Q1		

Input DLIS Files

DEFAULT	HILTB .037	FN:1	FIELD	22-Jul-1998 12:54	2370.0 FT	249.7 FT

Output DLIS Files

DEFAULT	HILTB .038	FN:31	FIELD	22-Jul-1998 13:19

Input DLIS Files

DEFAULT	HILTB .003	FN:2	FIELD	22-Jul-1998 05:33	2376.0 FT	1939.2 FT

Output DLIS Files

DEFAULT	HILTB .004	FN:3	FIELD	22-Jul-1998 05:52

OP System Version: 8C1-205

MCM

HILTB-DTB	APCW-98Q1	DSLT-TCC	8C1-205
TCC-B	APCW-98Q1		

PIP SUMMARY

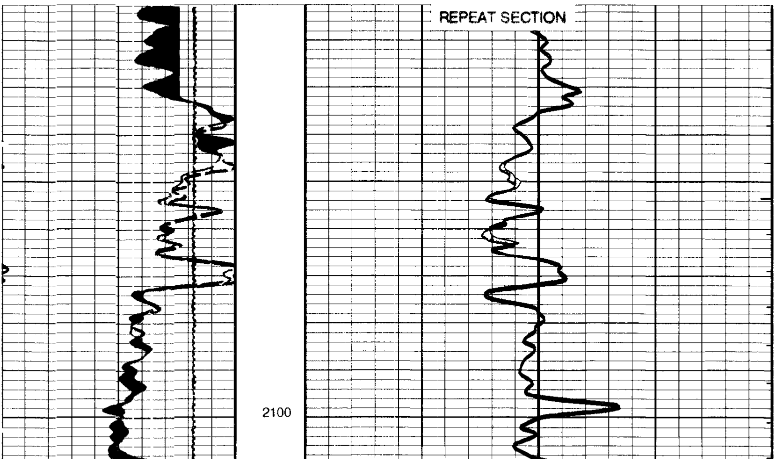
Integrated Transit Time Minor Pip Every 1 MS
Integrated Transit Time Major Pip Every 10 MS

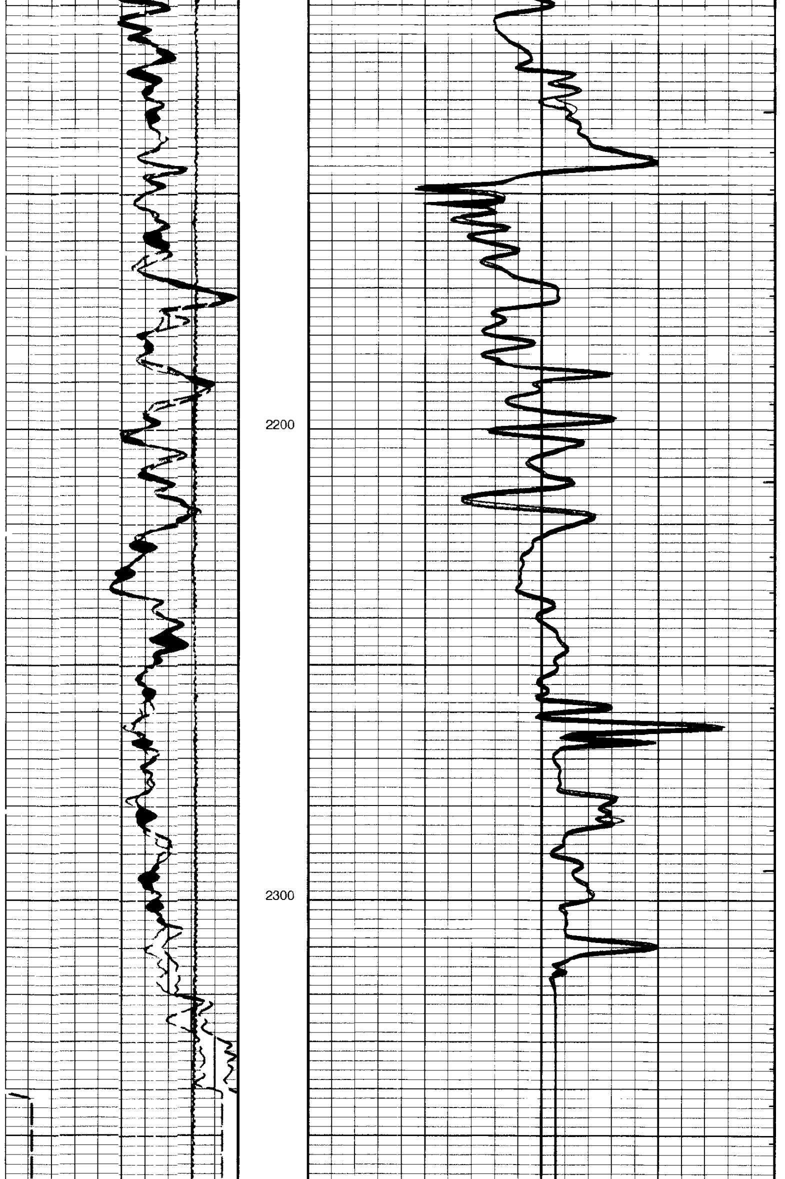
Time Mark Every 60 S

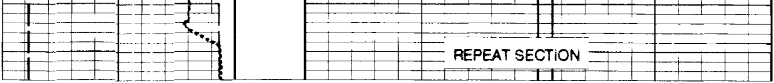
TENS_REP Curve (TENS_REP)
10000 (LBF) 0

GR_REP Curve (GR_REP)
0 (GAPI) 150

DT_REP Curve (DT_REP)
175 (US/F) 75







GR_REP Curve (GR_REP)
0 (GAPI) 150

TENS_REP Curve (TENS_REP)
10000 (LBF) 0

DT_REP Curve (DT_REP)
175 (US/F) 75

PIP SUMMARY

Integrated Transit Time Minor Pip Every 1 MS ⊣
Integrated Transit Time Major Pip Every 10 MS ⊣

■ Time Mark Every 60 S

Format: SSONIC_REP Vertical Scale: 5" per 100' Graphics File Created: 22-Jul-1998 05:52

OP System Version: 8C1-205

MCM

HILTB-DTB	APCW-98Q1	DSLT-TCC	8C1-205
TCC-B	APCW-98Q1		

Input DLIS Files

DEFAULT	HILTB .003	FN:2	FIELD	22-Jul-1998 05:33	2376.0 FT	1939.2 FT

Output DLIS Files

DEFAULT	HILTB .004	FN:3	FIELD	22-Jul-1998 05:52

COMPANY: NORTHWEST NATURAL GAS

WELL: OM-32-22-65
FIELD: CALVIN CREEK GAS STORAGE
COUNTY: COLUMBIA
STATE: OREGON

BOTTOM LOG INTERVAL	2357 F
SCHLUMBERGER DEPTH	2365 F
DEPTH DRILLER	2365 F
KELLY BUSHING	762 F
DRILL FLOOR	
GROUND LEVEL	753 F

Schlumberger

PLATFORM EXPRESS
BHC SONIC /SP/ GR
5" = 100'