COMPANY: Enerfin Resources Northwest

WELL: C.C. 14-22-75 (Raptor)

FIELD: Mist Gas

COUNTY: Columbia **STATE:** Oregon

COUNTY: Columbia
Field: Mist Gas
Location: 1126.89' N & 123.58' E of SW c
Well: C.C. 14-22-75 (Raptor)
Company: Enerfin Resources Northwest

Schlumberger

Platform Express
Array Induction/SP/ML/GR
Neutron/Densiyt/GR

LOCATION			
1126.89' N & 123.58' E of SW corner of Section 22		Elev.:	K.B. 1339.79 ft G.L. 1329.79 ft D.F.
Permanent Datum:	Ground Level	Elev.:	1329.79 ft
Log Measured From:	Kelly Bushing	10.0 ft	above Perm. Datum
Drilling Measured From:	Kelly Bushing		

API Serial No.	SECTION	TOWNSHIP	RANGE
	22	7N	5W

Logging Date		23-JUL-1999			
Run Number		1			
Depth Driller		2976 ft			
Schlumberger Depth		2900 ft			
Bottom Log Interval		2892 ft			
Top Log Interval		472 ft			
Casing Driller Size @ Depth		7.000 in @ 476 ft		@	
Casing Schlumberger		476 ft			
Bit Size		6.250 in			
Type Fluid In Hole		Accu-gauge			
MUD Density	Viscosity	9.1 lbm/gal	35 s		
Fluid Loss	PH	5.6 cm3	9.5		
Source Of Sample		Flowline			
RM @ Measured Temperature		0.720 ohm.m @ 89 degF		@	
RMF @ Measured Temperature		0.870 ohm.m @ 72 degF		@	
RMC @ Measured Temperature		0.940 ohm.m @ 68 degF		@	
Source RMF	RMC	Press	Press		
RM @ MRT	RMF @ MRT	0.634 @ 102	0.630 @ 102	@	@
Maximum Recorded Temperatures		102 degF			
Circulation Stopped	Time	23-JUL-1999	10:00		
Logger On Bottom	Time	23-JUL-1999			
Unit Number	Location	3152	Sacramento		
Recorded By		Clayton Campbell			
Witnessed By		Dave Huggins			

		Run 1	Run 2	Run 3
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			
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 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	REMARKS: RUN NUMBER 2
2 centralizers used on sonic sonde	
0.5 inch standoffs used on array induction tool	
Rig: Taylor Drilling #7	

RUN 1		RUN 2	
SERVICE ORDER #:	6075771	SERVICE ORDER #:	
PROGRAM VERSION:	9C0-413	PROGRAM VERSION:	
FLUID LEVEL:		FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1	RUN 2

Input DLIS Files

DEFAULT HILTB .006 FN:5 PRODUCER 06-Aug-1999 09:22 2904.0 FT 348.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 546.85 ft3

Cement Volume = 437.38 ft3 (assuming 2.88 in casing O.D.)

Computed from 2903.5 ft to 476.0 ft

OP System Version: 9C0-413

MCM

HILTB	OP9-KP1	DSLT-BA	OP9-KP1
TCCBF	9C0-413		

PIP SUMMARY

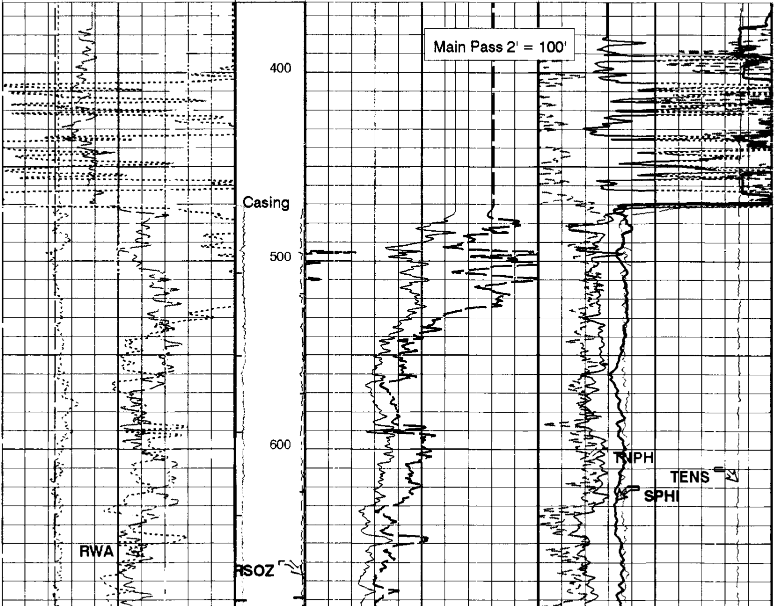
⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

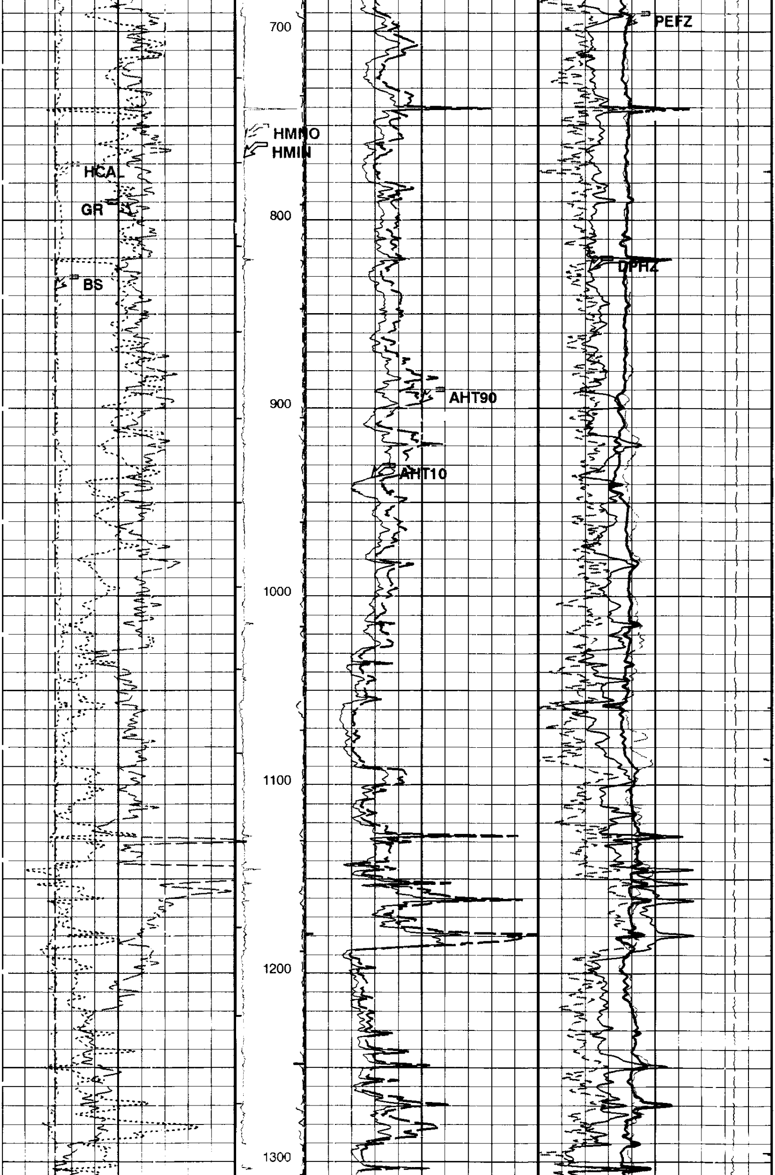
■ Time Mark Every 60 S

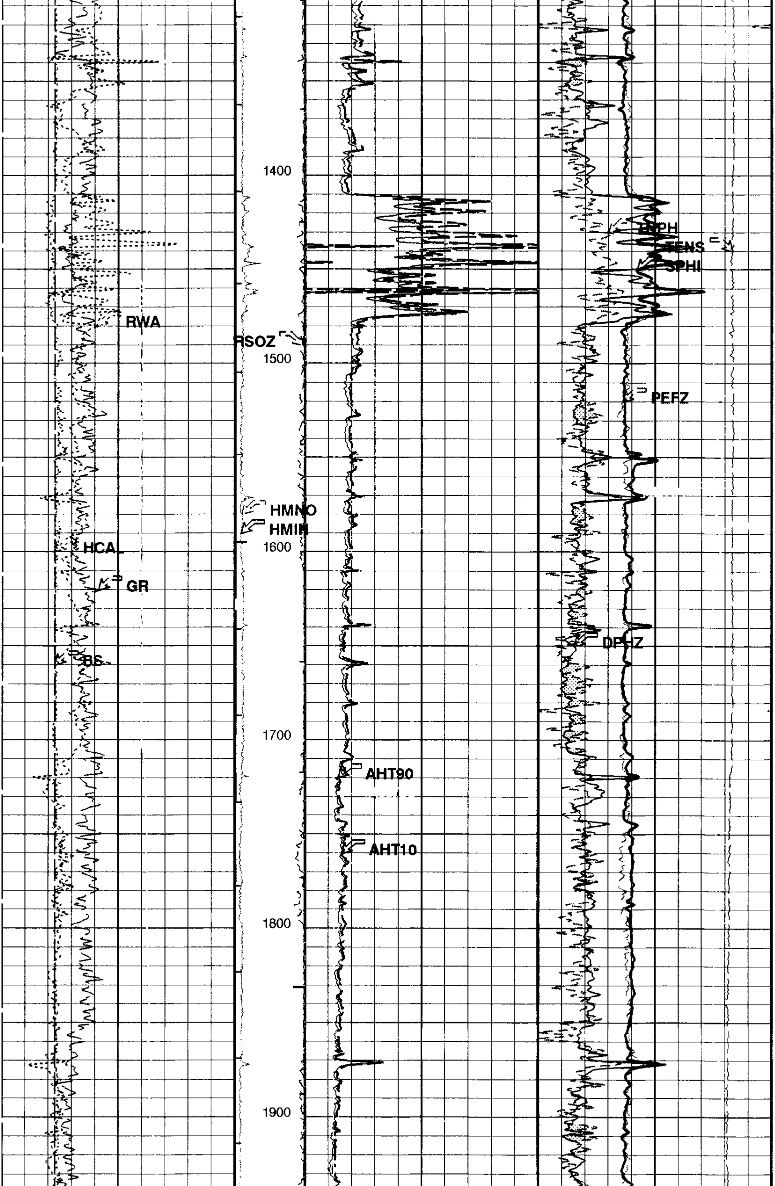
Env.Corr.Thermal Neutron Porosity (TNPH)		
1.2	(V/V)	0.6
Env.Corr.Thermal Neutron Porosity (TNPH)		
0.6	(V/V)	0
Crossover		

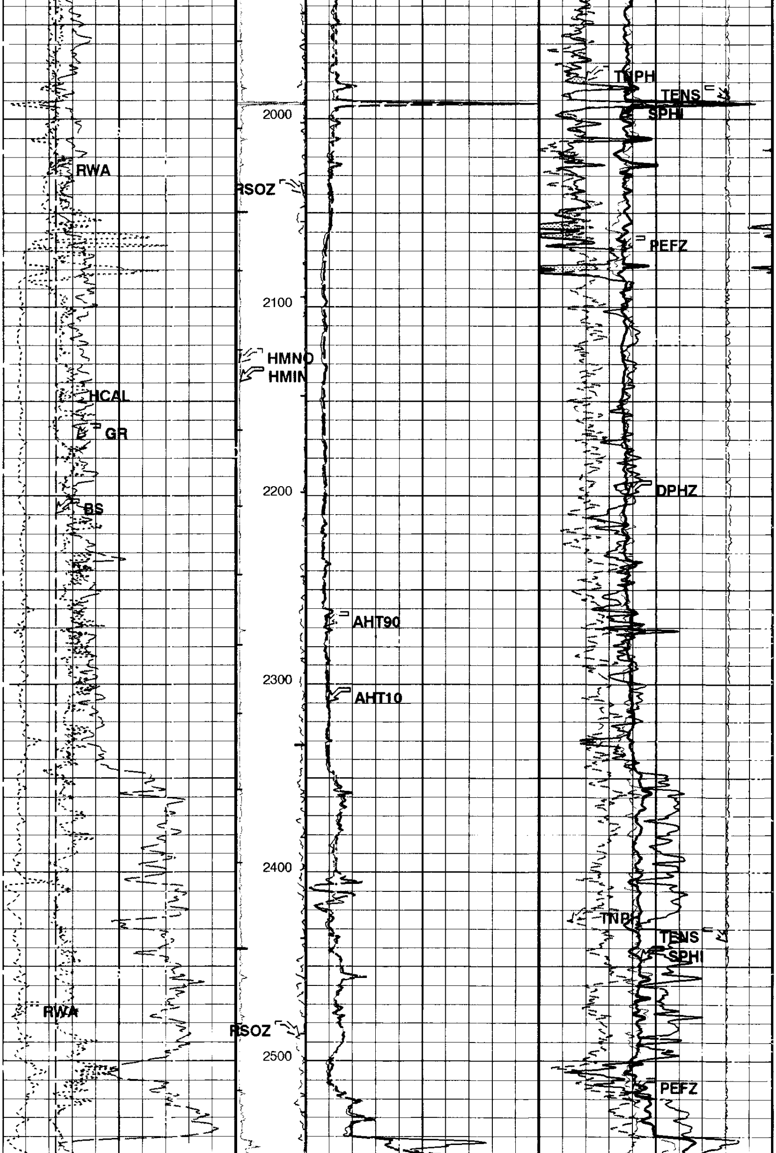
Micro

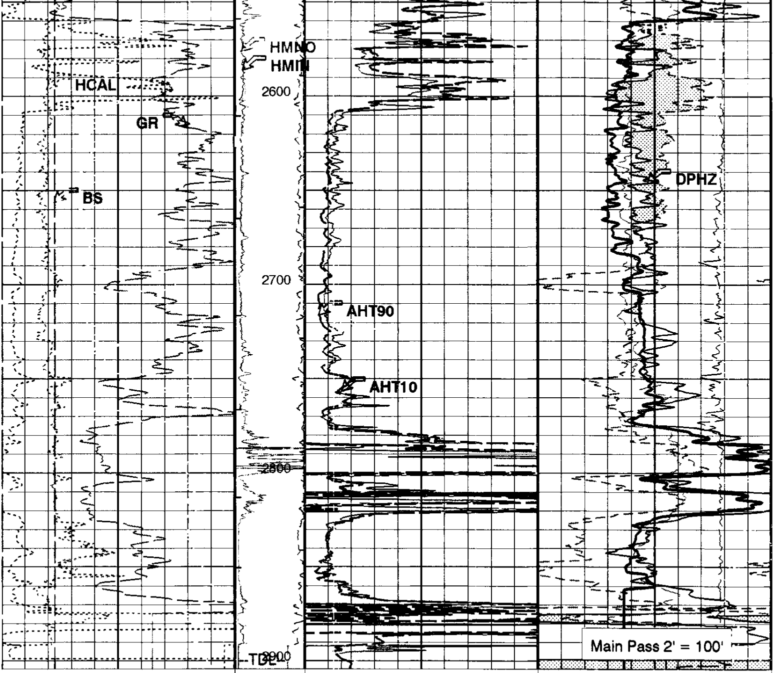
	Normal Resistivity (HMNO) (OHMM) 0 30		Tension (TENS) (LBF) 10000 0
RWA (RWA) (OHMM) 0 3	Micro Inverse Resistivity (HMIN) (OHMM) 0 30		Sonic Porosity (SPHI) (V/V) 0.6 0
Caliper (HCAL) (IN) 4 14	Resistivity standoff (RSOZ) (IN) 2 0	AIT-H 90 Inch Investigation (AHT90) (OHMM) 0 20	Formation Pe (PEFZ) (----) -1 9
Bit Size (BS) (IN) 4 14			Std Res Density Porosity (DPHZ) (V/V) 1.2 0.6
Gamma Ray (GR) (GAPI) 0 150	Perm Indicator	AIT-H 10 Inch Investigation (AHT10) (OHMM) 0 20	Std Res Density Porosity (DPHZ) (V/V) 0.6 0











Gamma Ray (GR)
0 (GAPI) 150

Bit Size (BS)
4 (IN) 14

Caliper (HCAL)
4 (IN) 14

RWA (RWA)
0 (OHMM) 3

Perm Indicator

Resistivity standoff (RSOZ)
2 (IN) 0

Micro Inverse Resistivity (HMIN) (OHMM)
0 30

Micro Normal Resistivity (HMNO) (OHMM)
0 30

AIT-H 10 Inch Investigation (AHT10)
0 (OHMM) 20

AIT-H 90 Inch Investigation (AHT90)
0 (OHMM) 20

Std Res Density Porosity (DPHZ)
0.6 (V/V) 0

Std Res Density Porosity (DPHZ)
1.2 (V/V) 0.6

Formation Pe (PEFZ)
-1 (----) 9

Sonic Porosity (SPHI)
0.6 (V/V) 0

Tension (TENS)
10000 (LBF) 0

Crossover

Env.Corr.Thermal Neutron Porosity (TNPH)
0.6 (V/V) 0

Env.Corr.Thermal Neutron Porosity (TNPH)
1.2 (V/V) 0.6

PIP SUMMARY

⊢ Integrated Hole Volume Minor Pip Every 10 F3
⊢ Integrated Hole Volume Major Pip Every 100 F3
⊣ Integrated Cement Volume Minor Pip Every 10 F3
⊣ Integrated Cement Volume Major Pip Every 100 F3

■ Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AHBHM	AIT-H Bhole Correction Mode	0_COMPUTEMUDRESISTIVITY	
AHBLM	AIT-H Basic Logs Mode	6_ONE_TWO_AND_FOUR	
AHBPO	AIT-H Basic Logs Processing Option	STANDARD_PROCESSING	
AHCDE	AIT-H Casing Detection Enable	YES	
AHCEN	AIT-H Tool Centering Flag (in Borehole)	ECCENTERED	
AHMRF	AIT-H Mud Resistivity Factor	1.000	
AHSAP	AIT-H Suspend Answer Product Processing	0_NOSUSPENSION	
AHSTA	AIT-H Tool Standoff	0.500	in
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BHFL	Borehole Fluid Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	101.0	degF
BS	Bit Size	6.250	in
BSAL	Borehole Salinity	3600.0	ppm
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
CDTS	C-Delta-T Shale	100.0	us/ft
CSIZ	Current Casing Size	7.000	in
CWEI	Casing Weight	0.000	lbm/ft
DFD	Drilling Fluid Density	9.100	lbm/gal
DHC	Density Hole Correction	BS	
DTF	Delta-T Fluid	189.0	us/ft
DTM	Delta-T Matrix	56.000	us/ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FPHI	Form Factor Porosity Source	DPHZ	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
HSCM	HILT Speed Correction Mode	NO_SC	
HSCO	Hole Size Correction Option	YES	
HSTI	STI Uses HILT Acceleration	YES	
MATR	Rock Matrix Type	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
MST	Mud Sample Temperature	89.000	degF
MWCO	Mud Weight Correction Option	NO	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
RMFS	Resistivity of Mud Filtrate Sample	0.870	ohm.m
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.000	ohm.m
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
SPDR	SP Drift	0.008	mV/ft
SPFS	Sonic Porosity Formula	R-H	
SPNV	SP Next Value	-10.000	mV
SPSO	Sonic Porosity Source	DT	
TD	Total Depth	2976.0	ft
TDL	Total Depth - Logger	2976.0	ft
TWS	Temperature of Connate Water Sample	100.0	degF

Format: S2 Vertical Scale: 2" per 100' Graphics File Created: 06-Aug-1999 09:33

OP System Version: 9C0-413

MCM

HILTB	OP9-KP1	DSLT-BA	OP9-KP1
TCCBF	9C0-413		

Input DLIS Files

DEFAULT	HILTB .006	FN:5	PRODUCER	06-Aug-1999 09:22	2904.0 FT	348.0 FT

Input DLIS Files

DEFAULT	HILTB .006	FN:5	PRODUCER	06-Aug-1999 09:22	2904.0 FT	348.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 546.85 ft3

Cement Volume = 437.38 ft3 (assuming 2.88 in casing O.D.)

Computed from 2903.5 ft to 476.0 ft

OP System Version: 9C0-413

MCM

HILTB	OP9-KP1	DSLT-BA	OP9-KP1
TCCBF	9C0-413		

PIP SUMMARY

⊢ Integrated Hole Volume Minor Pip Every 10 F3

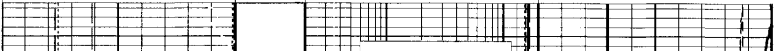
⊢ Integrated Hole Volume Major Pip Every 100 F3

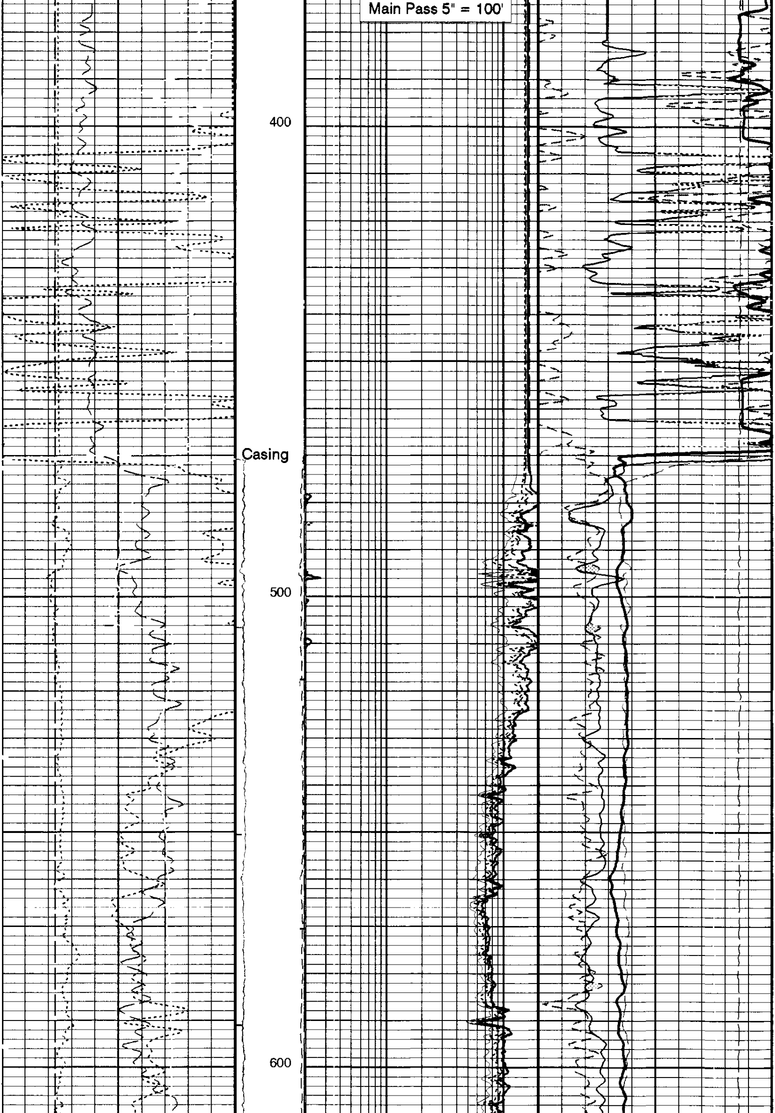
⊣ Integrated Cement Volume Minor Pip Every 10 F3

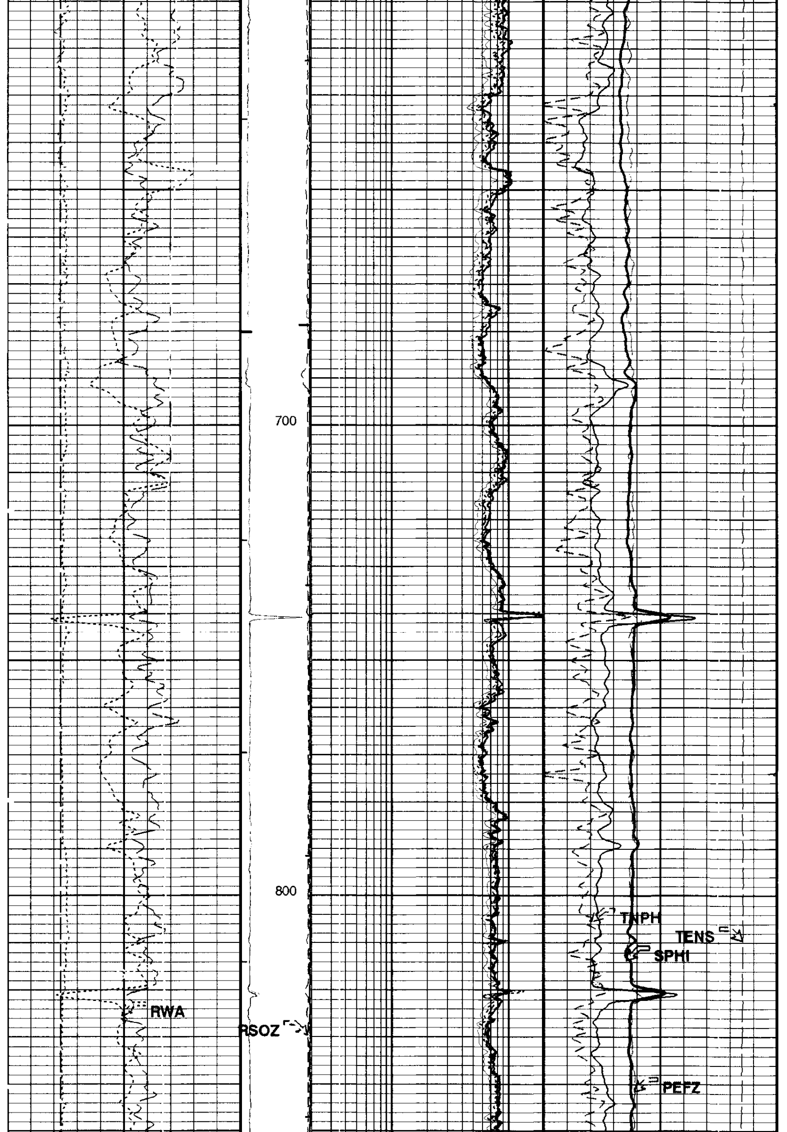
⊣ Integrated Cement Volume Major Pip Every 100 F3

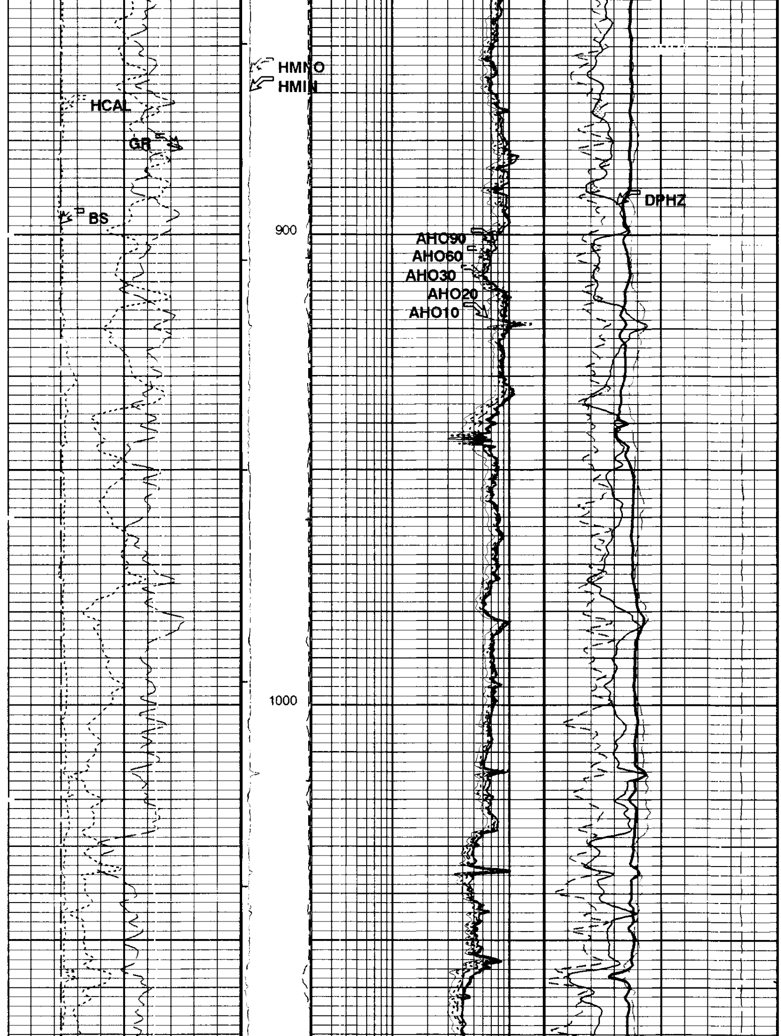
■ Time Mark Every 60 S

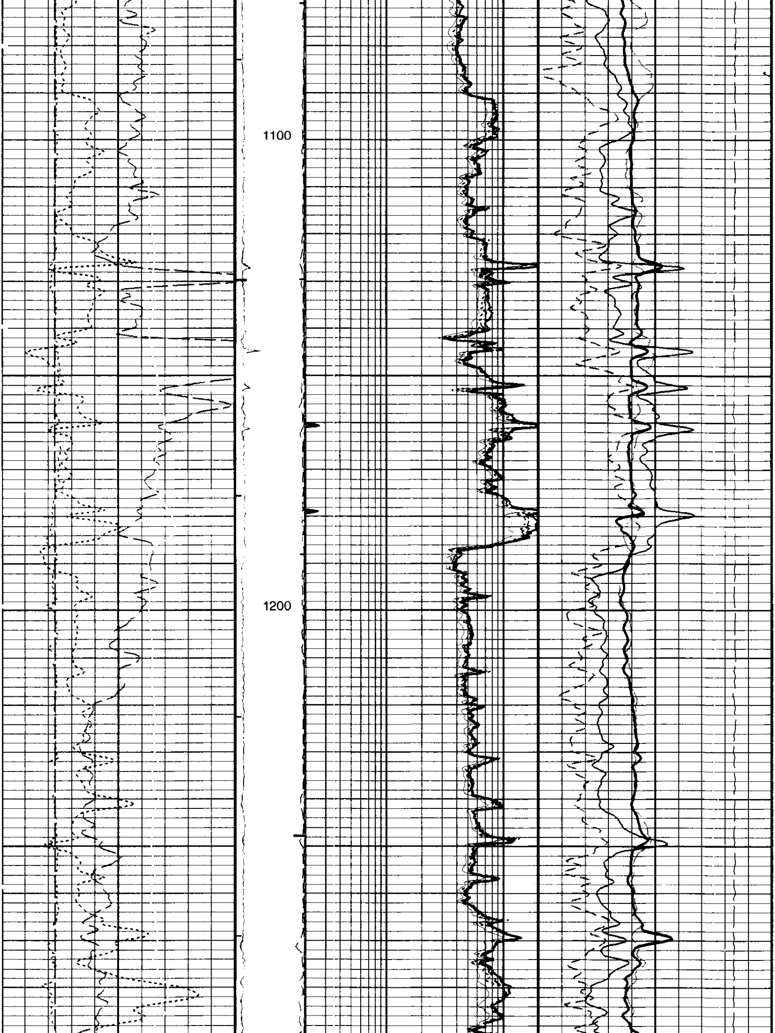
			Env.Corr.Thermal Neutron Porosity (TNPH) 1.2 (V/V) 0.6
			Env.Corr.Thermal Neutron Porosity (TNPH) 0.6 (V/V) 0
			▨ Crossover
	Micro Normal Resistivity (HMNO) (OHMM) 0 30	AIT-H 90 Inch Investigation (AHO90) 0.2 (OHMM) 20	Tension (TENS) 10000 (LBF) 0
RWA (RWA) 0 (OHMM) 3	Micro Inverse Resistivity (HMIN) (OHMM) 0 30	AIT-H 60 Inch Investigation (AHO60) 0.2 (OHMM) 20	Sonic Porosity (SPHI) 0.6 (V/V) 0
Caliper (HCAL) 4 (IN) 14	Resistivity standoff (RSOZ) 2 (IN) 0	AIT-H 30 Inch Investigation (AHO30) 0.2 (OHMM) 20	Formation Pe (PEFZ) -1 (----) 9
Bit Size (BS) 4 (IN) 14		AIT-H 20 Inch Investigation (AHO20) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 1.2 (V/V) 0.6
Gamma Ray (GR) 0 (GAPI) 150	Perm Indicator	AIT-H 10 Inch Investigation (AHO10) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 0.6 (V/V) 0

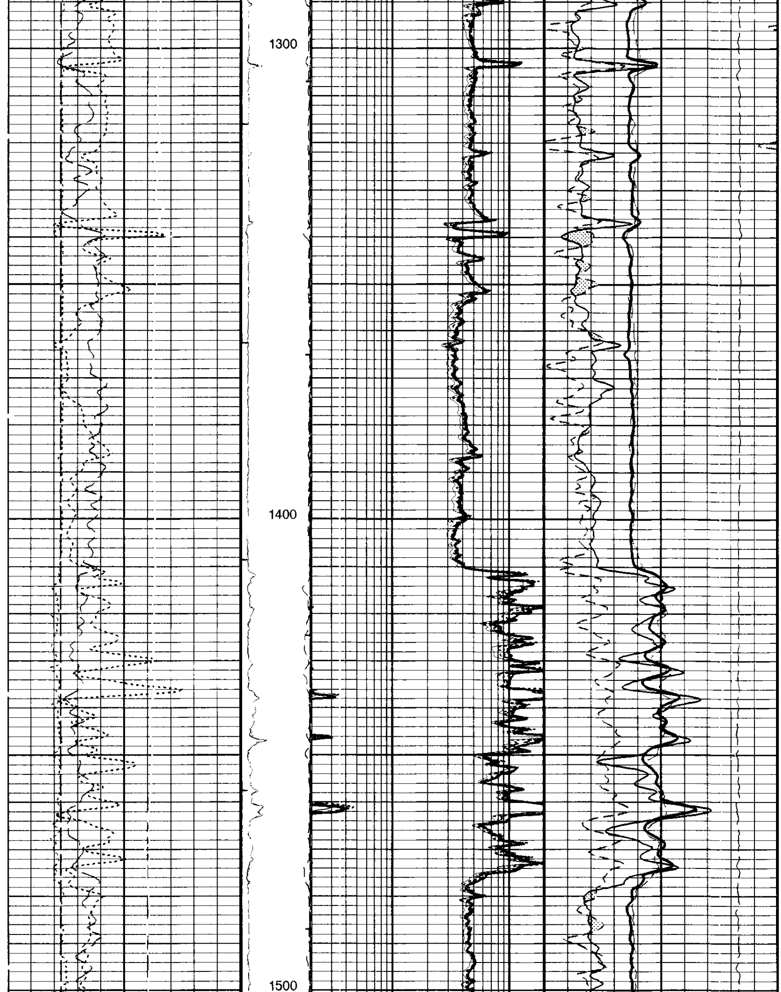


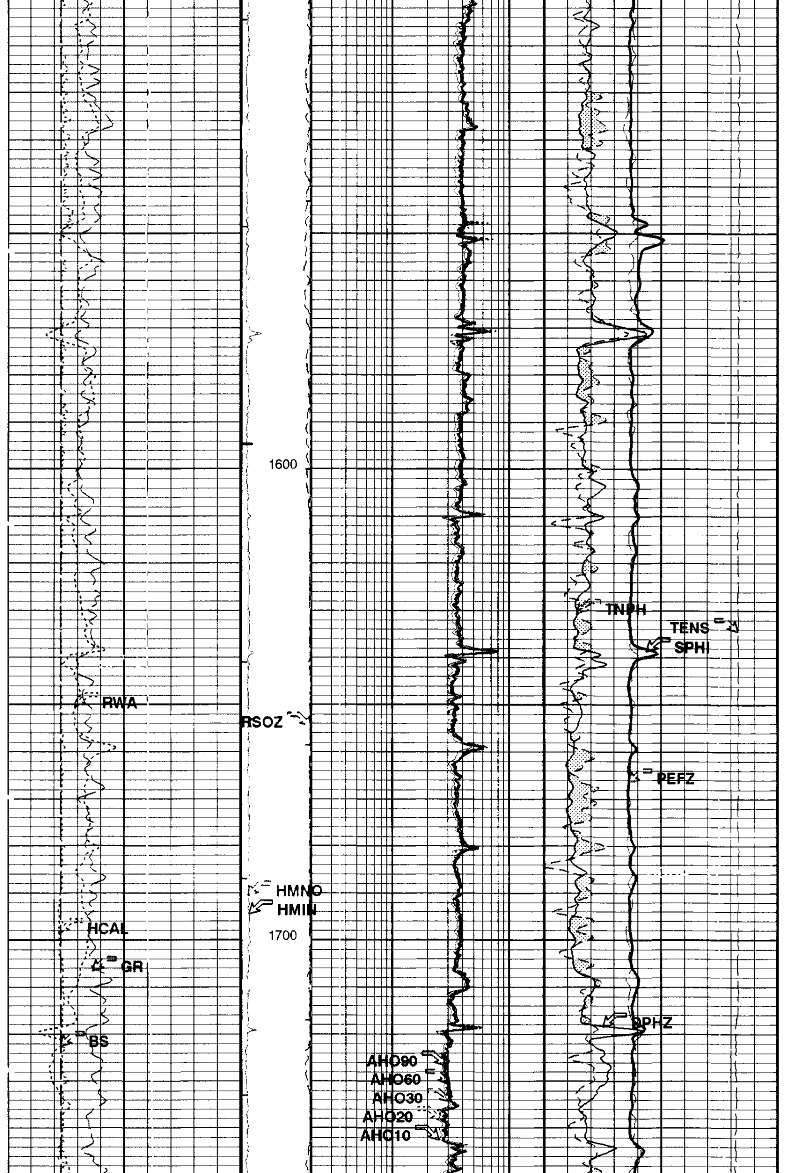


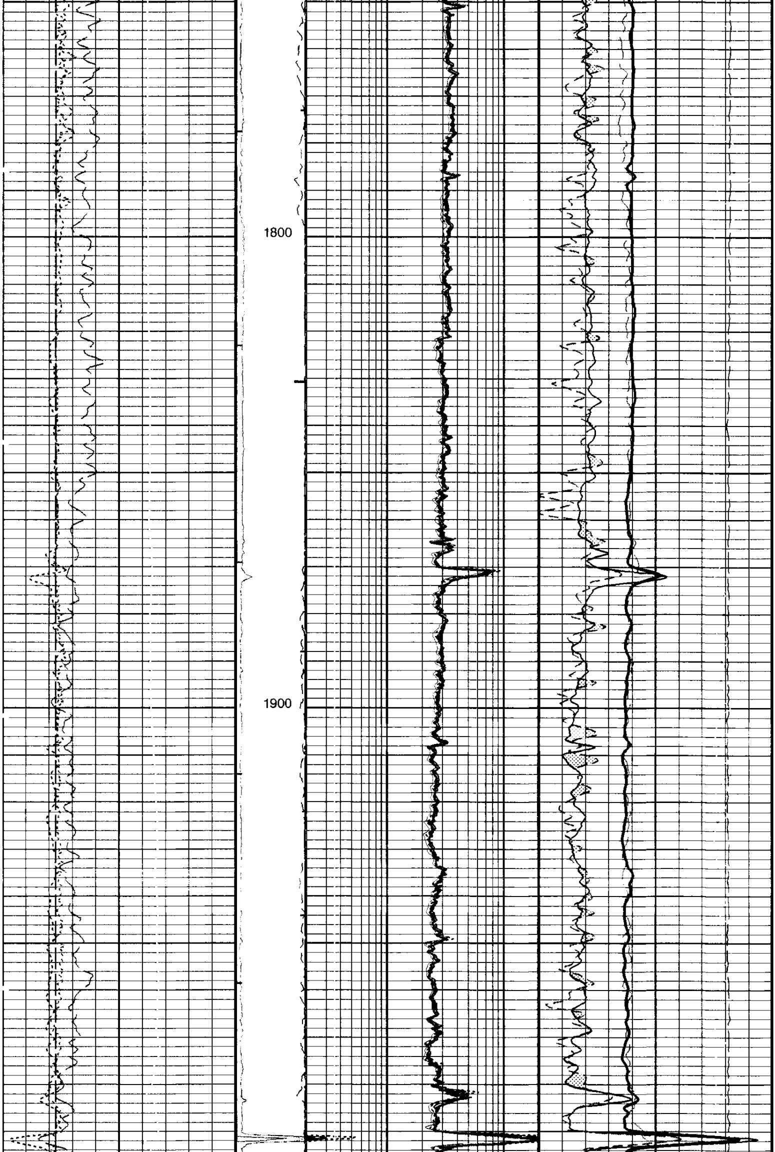


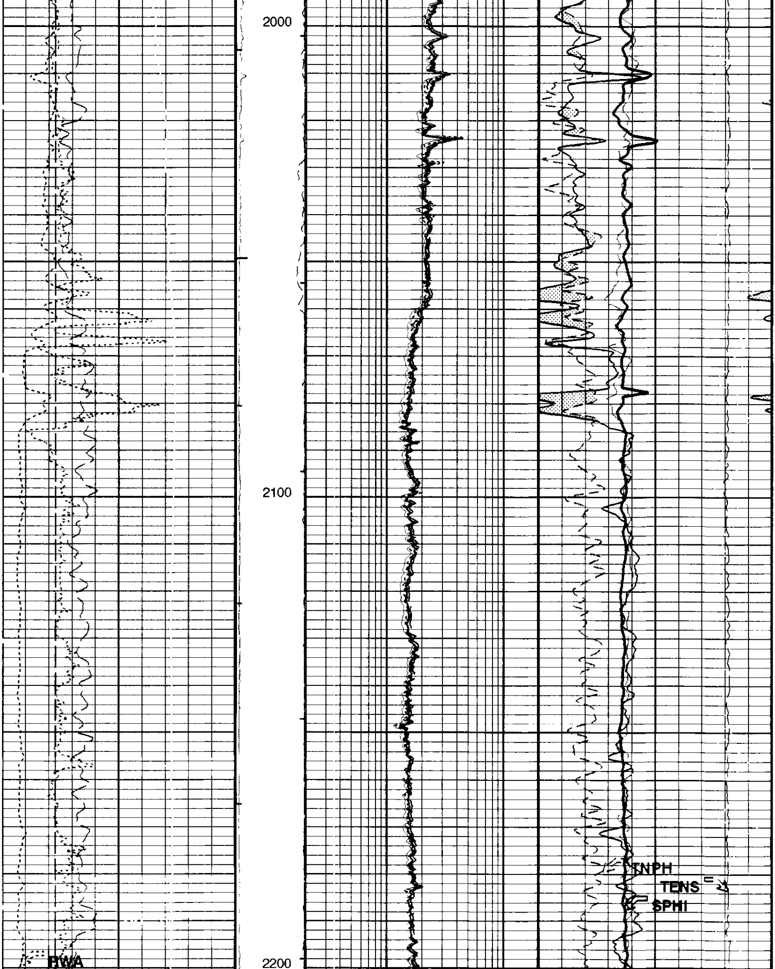


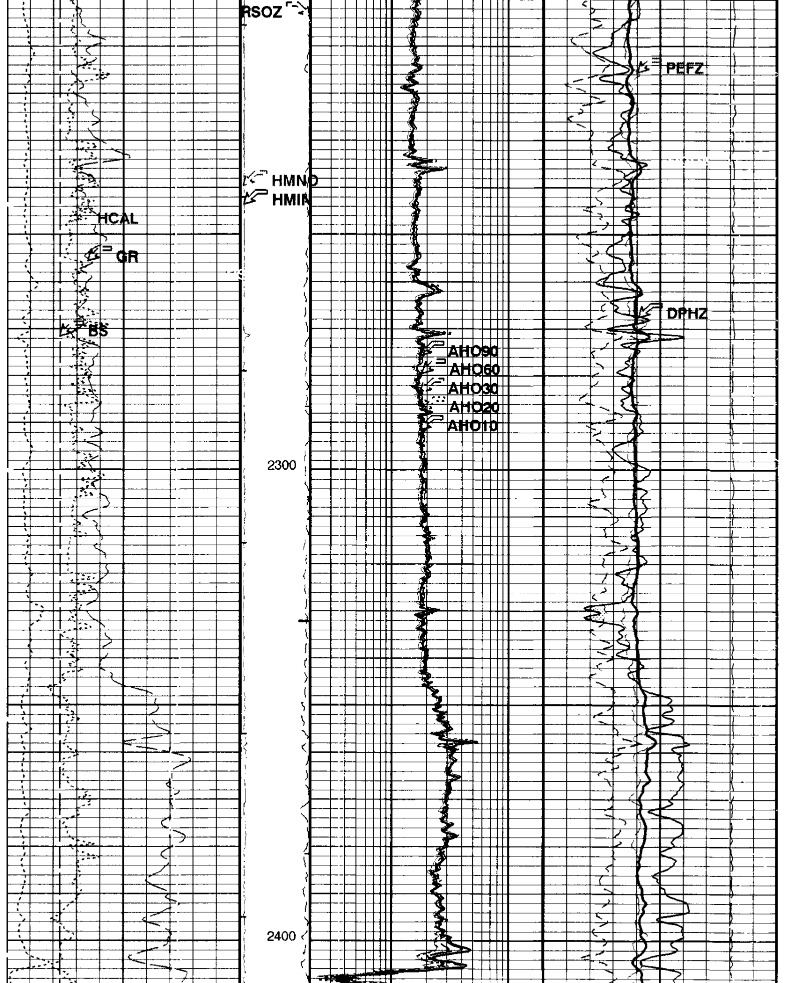


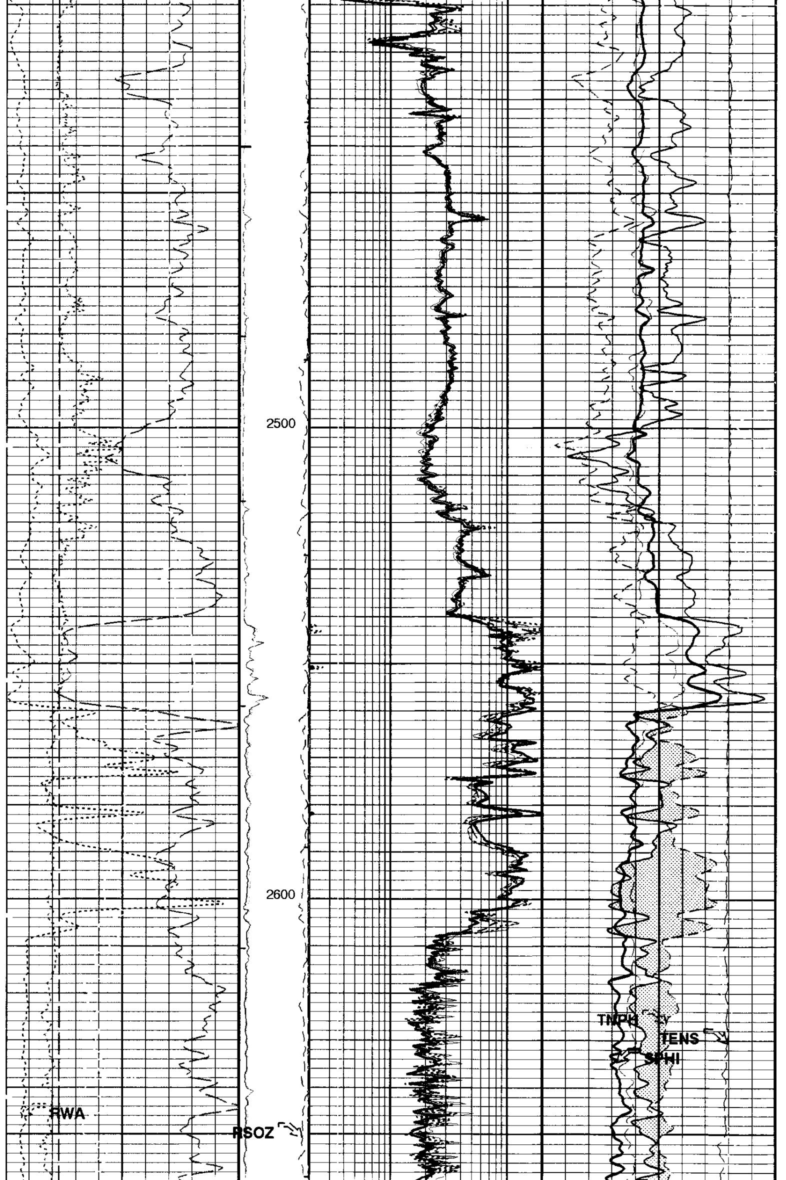


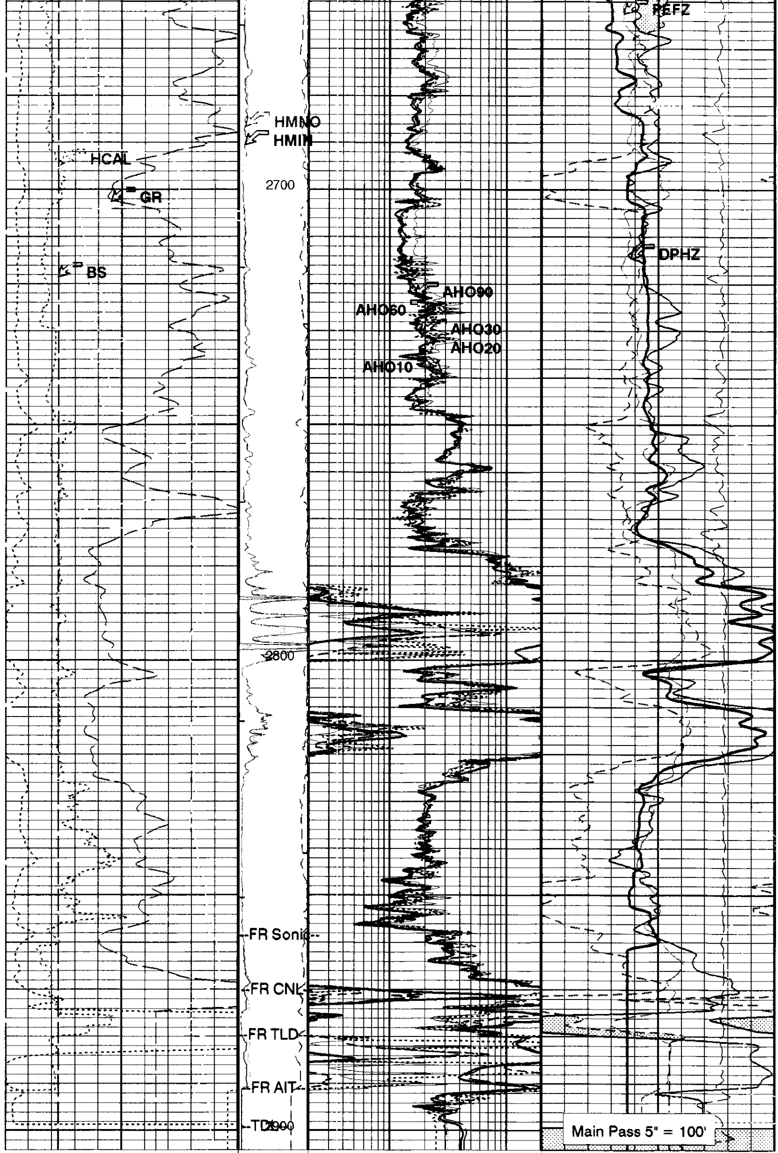












Gamma Ray (GR) 0 (GAPI) 150	Perm Indicator	AIT-H 10 Inch Investigation (AHO10) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 0.6 (V/V) 0
Bit Size (BS) 4 (IN) 14		AIT-H 20 Inch Investigation (AHO20) 0.2 (OHMM) 20	Std Res Density Porosity (DPHZ) 1.2 (V/V) 0.6
Caliper (HCAL) 4 (IN) 14	Resistivity standoff (RSOZ) 2 (IN) 0	AIT-H 30 Inch Investigation (AHO30) 0.2 (OHMM) 20	Formation Pe (PEFZ) -1 (----) 9
RWA (RWA) 0 (OHMM) 3	Micro Inverse Resistivity (HMIN) (OHMM) 0 30	AIT-H 60 Inch Investigation (AHO60) 0.2 (OHMM) 20	Sonic Porosity (SPHI) 0.6 (V/V) 0
	Micro Normal Resistivity (HMNO) (OHMM) 0 30	AIT-H 90 Inch Investigation (AHO90) 0.2 (OHMM) 20	Tension (TENS) 10000 (LBF) 0
			Crossover Env.Corr.Thermal Neutron Porosity (TNPH) 0.6 (V/V) 0 Env.Corr.Thermal Neutron Porosity (TNPH) 1.2 (V/V) 0.6

PIP SUMMARY

├ Integrated Hole Volume Minor Pip Every 10 F3
├─ Integrated Hole Volume Major Pip Every 100 F3
┤ Integrated Cement Volume Minor Pip Every 10 F3
─┤ Integrated Cement Volume Major Pip Every 100 F3

▮ Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
AHBHM	AIT-H Bhole Correction Mode	0_COMPUTEMUDRESISTIVITY	
AHBLM	AIT-H Basic Logs Mode	6_ONE_TWO_AND_FOUR	
AHBPO	AIT-H Basic Logs Processing Option	STANDARD_PROCESSING	
AHCDE	AIT-H Casing Detection Enable	YES	
AHCEN	AIT-H Tool Centering Flag (in Borehole)	ECCENTERED	
AHMRF	AIT-H Mud Resistivity Factor	1.000	
AHSAP	AIT-H Suspend Answer Product Processing	0_NOSUSPENSION	
AHSTA	AIT-H Tool Standoff	0.500	in
ARTS	AIT Rt Selection (for ALLRES computation)	13_AHT90	
BHFL	Borehole Fluid Type	WATER	
BHS	Bore Hole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	101.0	degF
BS	Bit Size	6.250	in
BSAL	Borehole Salinity	3600.0	ppm
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
CDTS	C-Delta-T Shale	100.0	us/ft
CSIZ	Current Casing Size	7.000	in
CWEI	Casing Weight	0.000	lbm/ft
DFD	Drilling Fluid Density	9.100	lbm/gal
DHC	Density Hole Correction	BS	

DTF	Delta-T Fluid	189.0	us/ft
DTM	Delta-T Matrix	56.000	us/ft
FD	Fluid Density	1.000	g/cm3
FEXP	Form Factor Exponent	2.000	
FNUM	Form Factor Numerator	1.000	
FPHI	Form Factor Porosity Source	DPHZ	
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	HCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0.000	deg
GGRD	Geothermal Gradient	0.010	degF/ft
GRSE	Generalized Mud Resistivity Selection	GEN9	
GTSE	Generalized Temperature Selection	TEMP	
HSCM	HILT Speed Correction Mode	NO_SC	
HSCO	Hole Size Correction Option	YES	
HSTI	STI Uses HILT Acceleration	YES	
MATR	Rock Matrix Type	SAND	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MDEN	Matrix Density	2.650	g/cm3
MPOF	MCFL Processing Operation Mode	ON	
MST	Mud Sample Temperature	89.000	degF
MWCO	Mud Weight Correction Option	NO	
NMT	HILT Nuclear Mud Type	NOBARITE	
NPRM	HRDD Processing Mode	STDRES	
NSAR	HRDD Depth Sampling Rate	1.000	in
PTCO	Pressure/Temperature Correction Option	NO	
RMFS	Resistivity of Mud Filtrate Sample	0.870	ohm.m
RTCO	RTCO - Rt Invasion Correction	YES	
RW	Resistivity of Connate Water	1.000	ohm.m
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68.000	degF
SOCN	Standoff Distance	0.125	in
SOCO	Standoff Correction Option	YES	
SPDR	SP Drift	0.008	mV/ft
SPFS	Sonic Porosity Formula	R-H	
SPNV	SP Next Value	-10.000	mV
SPSO	Sonic Porosity Source	DT	
TD	Total Depth	2976.0	ft
TDL	Total Depth - Logger	2976.0	ft
TWS	Temperature of Connate Water Sample	100.0	degF

Format: S5 Vertical Scale: 5" per 100' Graphics File Created: 06-Aug-1999 09:33

OP System Version: 9C0-413

MCM

HILTB	OP9-KP1	DSLT-BA	OP9-KP1
TCCBF	9C0-413		

Input DLIS Files

DEFAULT	HILTB .006	FN:5	PRODUCER	06-Aug-1999 09:22	2904.0 FT	348.0 FT

COMPANY:	**Enerfin Resources Northwest**
WELL:	**C.C. 14-22-75 (Raptor)**
FIELD:	**Mist Gas**
COUNTY:	**Columbia**
STATE:	**Oregon**

BOTTOM LOG INTERVAL	2892 ft
SCHLUMBERGER DEPTH	2900 ft
DEPTH DRILLER	2976 ft
KELLY BUSHING	1339.79 ft
DRILL FLOOR	
GROUND LEVEL	1329.79 ft

Schlumberger

Platform Express
Array Induction/SP/ML/GR
Neutron/Densiyt/GR