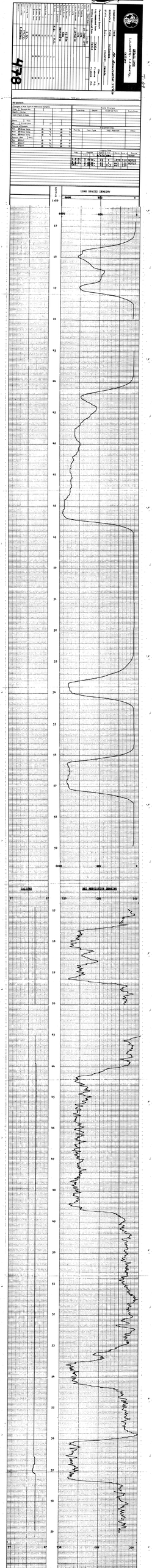

LONG SPACED DENSITY
6000
600
0
CALIPER
BED RESOLUTION DENSITY
6"
16"
700
600
500

Schlumberger

Well Services

Houston, Texas

Mail Point 3407

P.O. Box 2175

Houston, Texas 77001

Company	Texaco Inc.
Well	Texaco Inc. Fee #1
Field	Wildcat
County	Harris
State	Texas
Location	Other Services
Permanent Datum	Elev.
Log Measured From	Elev.
Drilling Measured From	Elev.

Run No.	One					
Date	8-8-72					
Depth-Driller	12,000					
Depth-Logger	12,000					
Bottom Logged Interval	12,000					
Top Logged Interval	11,000					
Type Fluid in Hole	Brine					
Salinity, PPM Cl	190,000					
Density	10.0					
Level	Full					
Max. Rec. Temp. Deg. F.	220					
Operating Rig Time	12 Hrs.					
Recorded By	Hall					
Witnessed By	Mr. Hall					

Run No.	Bit	From	To	Size	Wgt.	Visc.	Fluid Loss	Pipe Recorded	Time Since Circ.
One		Surface	12,000	9.625	47				

Run No.	Type Log	Depth-Driller	Depth-Logger	Bottom Logged Interval	Top Logged Interval	Scale Up/Down
One	DIL	12,000	12,000	12,000	11,000	1"/100'
	BHC	12,000	12,000	12,000	11,000	1"/100'
	FDC	12,000	12,000	12,000	11,000	1"/100'

SCHEMATIC

Equipment Data Used on Indicated Strings

Type	Serial No.	Run No.	Location
DIL	1	One	12,000
BHC	1	One	12,000
FDC	1	One	12,000

Auxiliary Equipment

Type	Serial No.	Run No.	Location
Dual Induction Laterolog	1	One	12,000
Borehole Compensated Sonic	1	One	12,000
Compensated Formation Density	1	One	12,000
Caliper	1	One	12,000
Gamma Ray	1	One	12,000

Logging Data

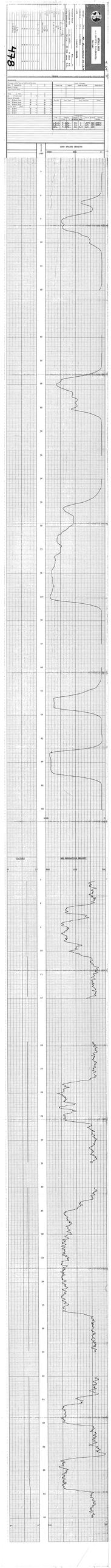
Run No.	Logging Speed	Time Constant	Gain Settings	Depth Scale
One	60			1"/100'

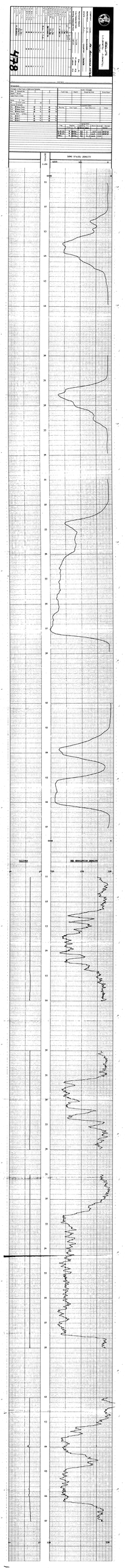
Recorded Data

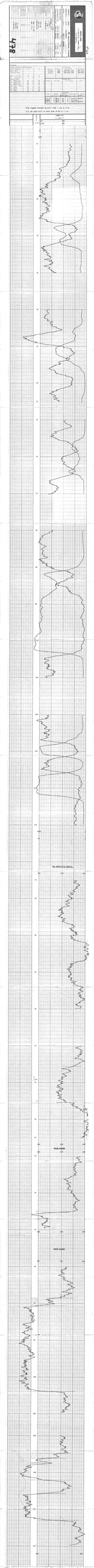
Run No.	Zero Check	Calibrator Check	Other
One			

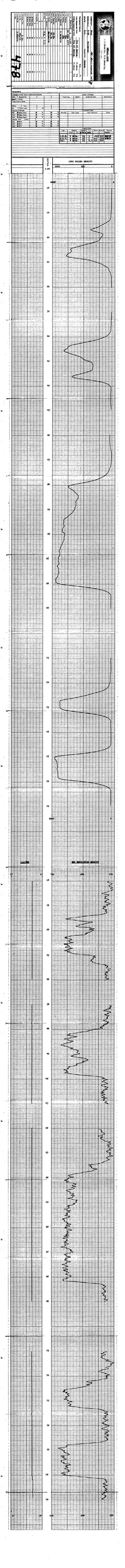
Remarks

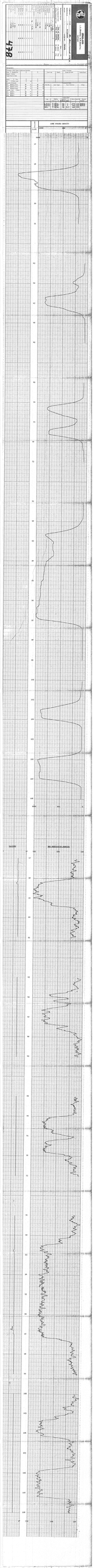
Run No.	Remarks
One	Logged with 1000 psi on casing.

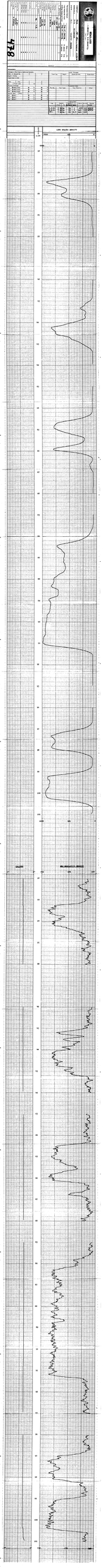


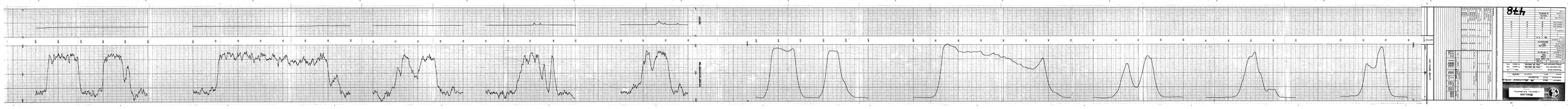

4728
SPHI 30 kHz - 2000 kHz
GAMMA RAY
SPHI
SPHI 30 kHz - 2000 kHz
GAMMA RAY
SPHI
SPHI 30 kHz - 2000 kHz
GAMMA RAY
SPHI








478
Schlumberger
Dual Induction Laterolog
Borehole Compensated Sonic Log
Gamma Ray
Caliper
Spontaneous Potential
Company
Well
Field
County
State
Location
Permanent Datum
Log Measured From
Drilling Measured From
Elevation
Date
Run No.
Depth-Driller
Depth-Logger
Bottom Logged Interval
Top Logged Interval
Type Fluid in Hole
Salinity
Density
Level
Max. Rec. Temp.
Equip. No.
Location
Recorded By
Witnessed By
RUN
BIT
CASING
TYPE FLUID IN HOLE
DENSITY
VISCOSITY
PH
FLUID LOSS
SOURCE OF SAMPLE
RM @ MEAS. TEMP.
RMF @ MEAS. TEMP.
RMC @ MEAS. TEMP.
SOURCE OF RMF
SOURCE OF RMC
RM @ BHT
TIME SINCE CIRC.
MAX. REC. TEMP.
EQUIP. LOCATION
RECORDED BY
WITNESSED BY
LOG SCALES (DEPTH)
SPONTANEOUS POTENTIAL (MILLIVOLTS)
RESISTIVITY (OHMS)
GAMMA RAY (API UNITS)
CALIPER (INCHES)
TRANSIT TIME (MICROSECONDS/FOOT)



SCHLUMBERGER WELL SERVICES
HOUSTON, TEXAS

COMPANY	SHELL OIL COMPANY
WELL	1
FIELD	WILDCAT
COUNTY	GRAND ISLE
STATE	LOUISIANA
LOCATION	1980' FSL & 1980' FEL
SEC. 16 TWP. 21S RGE. 29E	
PERMANENT DATUM	GROUND LEVEL
ELEV. 0 FT.	
LOG MEASURED FROM	KELLY BUSHING
8 FT. ABOVE PERM. DATUM	
DRILLING MEASURED FROM	KELLY BUSHING
DATE	10-15-71
RUN NO.	ONE
TYPE LOG	DUAL INDUCTION LATEROLOG
DEPTH-DRILLER	13,000
DEPTH-LOGGER	13,000
BTM. LOG INTERVAL	13,000
TOP LOG INTERVAL	10,000
CASING-DRILLER	13 3/8" @ 10,000
CASING-LOGGER	10,000
BIT SIZE	12 1/4"
TYPE FLUID IN HOLE	LIGNOSULFONATE
DENS.	12.5
VISC.	45
PH	10.5
FLUID LOSS	6.0
SOURCE OF SAMPLE	FLOWLINE
RM @ MEAS. TEMP.	.52 @ 160°
RMF @ MEAS. TEMP.	.45 @ 160°
RMC @ MEAS. TEMP.	.65 @ 160°
SOURCE OF RMF & RMC	MEASURED
RM @ BHT	.28 @ 220°
TIME SINCE CIRC.	12 HRS.
MAX. REC. TEMP.	220°
EQUIP. NO. & LOCATION	1111
RECORDED BY	J. SMITH
WITNESSED BY	T. JONES

RUN NO. ONE
TYPE LOG DUAL INDUCTION LATEROLOG
DEPTH-DRILLER 13,000
DEPTH-LOGGER 13,000
BTM. LOG INTERVAL 13,000
TOP LOG INTERVAL 10,000
CASING-DRILLER 13 3/8" @ 10,000
CASING-LOGGER 10,000
BIT SIZE 12 1/4"
TYPE FLUID IN HOLE LIGNOSULFONATE
DENS. 12.5
VISC. 45
PH 10.5
FLUID LOSS 6.0
SOURCE OF SAMPLE FLOWLINE
RM @ MEAS. TEMP. .52 @ 160°
RMF @ MEAS. TEMP. .45 @ 160°
RMC @ MEAS. TEMP. .65 @ 160°
SOURCE OF RMF & RMC MEASURED
RM @ BHT .28 @ 220°
TIME SINCE CIRC. 12 HRS.
MAX. REC. TEMP. 220°
EQUIP. NO. & LOCATION 1111
RECORDED BY J. SMITH
WITNESSED BY T. JONES

REMARKS

Run No. One Dual Induction Laterolog Runner
Depth Determined From Schlumberger Wireline Measurement
Type Log Driller
Type Log Logger
Bottom Logged Interval
Top Logged Interval
Type Fluid in Hole
Salinity, PPM Cl
Density
Level
Max. Rec. Temperature
Estimated Bottom Hole Temperature
Equipment Number
Location
Recorded By
Witnessed By

Run No.	Bit	From	To	Hole Size	Casing	Wgt.	Fluid in Hole	Max. Rec. Temp.	Equip. No. & Location	Recorded By	Witnessed By
ONE	12 1/4"	10,000	13,000	12 1/4"	13 3/8" @ 10,000	68	LIGNOSULFONATE	220°	1111	J. SMITH	T. JONES

Circulation Stopped
Time Logger on Bottom
Unit Number
Max. Rec. Temperature
Equipment Number
Location
Recorded By
Witnessed By

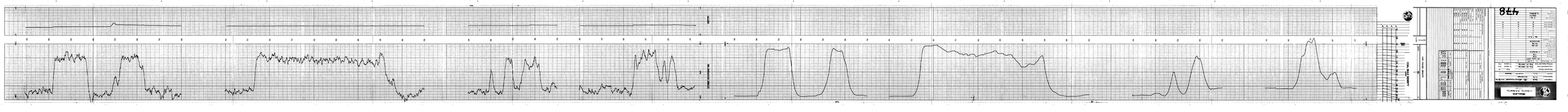
Run No.	Date	Time	Unit Number	Max. Rec. Temperature	Equipment Number	Location	Recorded By	Witnessed By
ONE	10-15-71	0600	1111	220°	1111	LAFAYETTE	J. SMITH	T. JONES

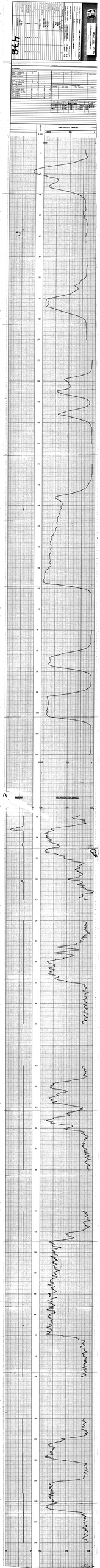
SCR Attach downhole - use Hot/Cal- detail incomplete, only big hat
LOG Wrinkle Fac

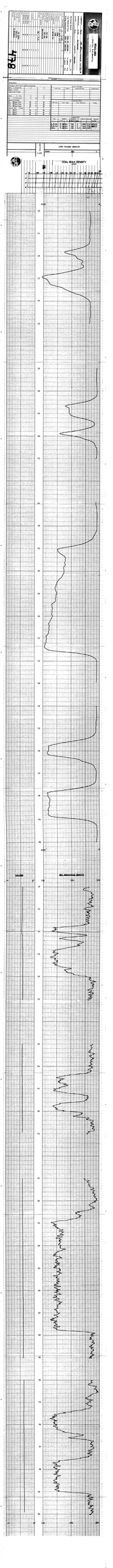
LONG SPACED DENSITY

CALIPER

BHC REGULATED DENSITY







Schlumberger

COMPANY: PEABODY COAL COMPANY
WELL: CHARLES LEAKE No. 1
FIELD: MADISONVILLE
COUNTY: HOPKINS
STATE: KENTUCKY
LOCATION: 1320' FSL & 1320' FEL
SEC. 2 TWP. 12S RGE. 7E
PERMANENT DATUM: GROUND LEVEL
ELEV.: 0
LOG MEASURED FROM: KELLY BUSHING
ELEV.: 0
DRILLING MEASURED FROM: KELLY BUSHING
ELEV.: 0

Date	2-15-82		
Run No.	ONE		
Depth-Driller	6000		
Depth-Logger	6000		
Bottom Logged Interval	6000		
Top Logged Interval	0		
Type Fluid in Hole	AIR		
Salinity, PPM Cl			
Density			
Level			
Max. Rec. Temp. Deg. F.			
Operating Rig Time			
Recorded By	J. SMITH		
Witnessed By			

Run No.	ONE		
Bit No.	1		
Type	7 7/8" STEEL		
Size	7 7/8"		
From	0		
To	6000		

Weight			
Viscosity			
pH			
Fluid Loss			
Source of Sample			
Rm @ Meas. Temp.	@	°F	@ °F
Rmf @ Meas. Temp.	@	°F	@ °F
Rmc @ Meas. Temp.	@	°F	@ °F
Source: Rmf / Rmc			
Rm @ BHT	@	°F	@ °F
Time Since Circ.			
Max. Rec. Temp. Deg. F.			
Equip. Location			
Recorded By			
Witnessed By			

REMARKS:
Changes in Mud Type or Additional Samples:
Date | Sample No. | Depth
Depth = Driller
Type Fluid in Hole

Zone | Elev.
pf = Flood Limit
Record of Samples

Rec. @ Meas. Temp.	@	°F	@	°F	Rm
Rmf @ Meas. Temp.	@	°F	@	°F	Rmf
Rmc @ Meas. Temp.	@	°F	@	°F	Rmc
Source: Rmf / Rmc					
Rm @ BHT	@	°F	@	°F	Rm
Rmf @ BHT	@	°F	@	°F	Rmf
Rmc @ BHT	@	°F	@	°F	Rmc

Tool Log | Depth | Scale Changes: Scale as Here | Scale Short

Equipment Data: Tool Type | Tool Position | Other

Logged Intervals

Log	Depths	Bore-hole	Casing	Mud	Source of Sample
	Log 1 — Log 2	Size — Wgt.	Size — Wgt.		Number
1	6000 — 2500	7 7/8		CNS	11 4083
2	2500 — 0	7 7/8		mst	11 4082
3	2 — 0	7 7/8	0-3	mst	1151

LOW SPACED DENSITY
6000 — SDL — 0

COAL BULK DENSITY
gm/cc
2 — 4 — 6 — 8
1.2 1.28 1.36 1.44 1.52 1.6 1.68 1.76 1.84 1.92 2.0 2.08

6000
22
23
24
25
26
27
28
29
30
33
34
35
36
37
38
39
40
6000

CALIPER
6" — 16"

MED RESOLUTION DENSITY
750 — 0.79 — 350

22
23
24
25
26
27
28
29
30
33
34
35
36
37
38
39
40

6" — 16"
750 — 0.79 — 350

4738

SCHLUMBERGER

WELL SURVEY SERVICE

Schlumberger Offshore Services

Houston, Texas

COMPANY	SHELL OIL COMPANY
WELL	SHELL A-1
FIELD	WILDCAT
COUNTY	ST. MARY PARISH
STATE	LOUISIANA
LOCATION	OTHER SERVICES:
SEC. 16 TWP. 16S RGE. 15E	
PERMANENT DATUM: SEA LEVEL	ELEV.: K.B. 0
LOG MEASURED FROM: K.B. 0 FT. ABOVE PERM. DATUM	D.F.
DRILLING MEASURED FROM: K.B.	G.L.

DATE: 7-11-61

RUN NO.: ONE

DEPTH-DRILLER: 9999

DEPTH-LOGGER: 9999

BTM. LOG INTERVAL: 9999

TOP LOG INTERVAL: 4000

CASING-DRILLER: 13 3/8 @ 4000

CASING-LOGGER: 4000

BIT SIZE: 12 1/4

TYPE FLUID IN HOLE: SALT WATER

DENS.: 10.0

VISC.: 40

PH: 10

FLUID LOSS: 8

SOURCE OF SAMPLE: FLOWLINE

RM @ MEAS. TEMP.: .75 @ 70°F

RMF @ MEAS. TEMP.: .65 @ 70°F

RMC @ MEAS. TEMP.: .85 @ 70°F

SOURCE: RMF: MEAS. RMC: MEAS.

RM @ BHT: .45 @ 160°F

TIME SINCE CIRC.: 12 HRS.

MAX. REC. TEMP.: 160°F

EQUIP. NO.: 1

LOCATION: 1 MILE SOUTH

RECORDED BY: J. SMITH

WITNESSED BY: T. JONES

RUN NO.	BIT	FROM	TO	FEET	HOURS
ONE	12 1/4	4000	9999	5999	12

REMARKS: RUN ONE: Induction-Electrical Survey, Sonic Log, Gamma Ray-Neutron, Coal Bulk Density, Caliper Log

EQUIPMENT: 1 Std. Unit, 1 Sonic Unit, 1 Coal Bulk Density Unit, 1 Caliper Unit, 1 Gamma Ray-Neutron Unit

LONG SPACING SONIC

COAL BULK DENSITY

CALIPER

BIT RESOLUTION CURVE

GAMMA RAY-NEUTRON

DETAIL LOGS
L.S.Density, B.R.Density, Caliper

COMPANY	Teck PR-Bullmoose 77(3)A
BOREHOLE	T-81 Bullmoose
STATE	B.C.
COUNTRY	Canada
Permanent Datum	Elev ___ Ft.
Log measured from	Top of Casing Ft. above P.D.
Drilling measured from	Top of Casing Ft. above P.D.

Run No.	1		
Depth Scale	1:20		
Date	14 July 1977		
First Reading	46m		
Last Reading	8m		
Interval Measured	3 Details		
Casing BPB			
Casing Driller			
Depth Reached	48.7m		
Bottom Driller	48.8m		
Mud Nature	Bentonite		
S.G. / Viscosity			
Bit Size 1	HQ to T.D.	to	to
2	to	to	to
3	to	to	to
Casing Size 1	to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	1 hr.		
Truck No.	V21/35		
Recorded By	R.Bishop		
Witness			

478

fold here

REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens. / Visc.				
ph. / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source: Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
L.S.D.	3 Dets.		2½	1	.665	110	M5852
B.R.D.	3 Dets.		2½	1	out	110	M5852
Cal.	3 Dets.		2½	0.3	out	110	

DEPTHS 1:20

LONG SPACED DENSITY

6000 SDU 0

8th

Date	7-7-78
Run No.	7
Depth-Driller	7120
Depth-Logger	7118
Bottom Log Interval	7116
Top Log Interval	6800
Casing-Driller	13 3/8 @ 1010
Casing-Logger	13 3/8 @ 1010
Bit Size	12 1/4
Type Fluid in Hole	Dispersed Lime
Dens.	9.7
Visc.	45
pH	10.5
Fluid Loss	4.0
Source of Sample	Flowline
Rm @ Meas. Temp.	0.45 @ 75
Rmf @ Meas. Temp.	0.35 @ 75
Rmc @ Meas. Temp.	
Source: Rmf / Rmc	M / M
Rm @ BHT	0.25 @ 150
Time Since Circ.	8 hrs
Max. Rec. Temp.	150
Equipment Number	1
Location	Lafayette
Recorded By	Hoffman
Witnessed By	Mr. Bartholomew

COMPANY: TEXAS OIL & GAS CORPORATION
WELL: Bergstrom #1
FIELD: Wildcat
COUNTY: Lafayette
STATE: Louisiana

REMARKS

Changes in Mud Type or Additional Additives

Date	7-7-78		
Time	2:00		
Type Fluid in Hole	Dispersed Lime		
Dens.	9.7	Visc.	45
Fluid Loss	4.0	pH	10.5

Changes in Circulating Material

Type Fluid in Hole	Dispersed Lime		
Dens.	9.7	Visc.	45
Fluid Loss	4.0	pH	10.5

Equipment Data

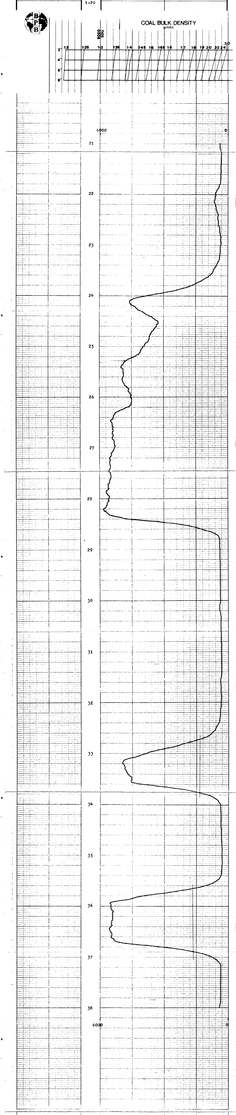
	Type Log	Run Number	Logging Speed	Time
Dens.	6	1	30	1
Dual Induction Focused	6	1	30	1
Dual Induction Spherically Focused	6	1	30	1
Sonic	6	1	30	1
Gamma Ray	6	1	30	1
Caliper	6	1	30	1
Temp.	6	1	30	1
Other				

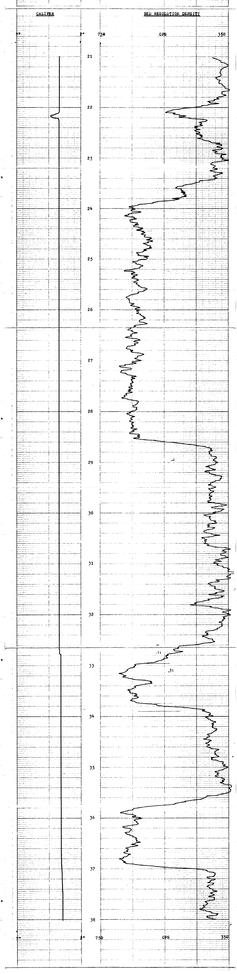
Casing Data

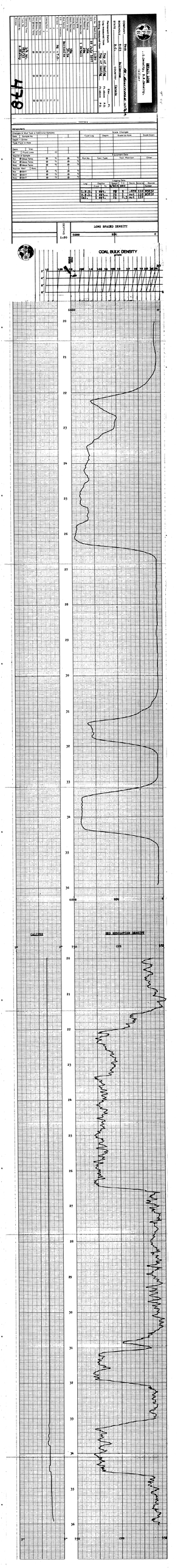
	Size	Weight	Grade	Thread	Depth	Hole Size	Cement
Surface	13 3/8	48	H-40	ST&C	1010	17 1/2	1000 SACKS
Intermediate							
Production	7	26	N-80	LT&C	6800	8 3/4	1000 SACKS
Liner	5	18	N-80	LT&C	6800-7120	6 1/8	1000 SACKS

Equipment Number	Serial Number	Type
1	1120	LONG SPACED DENSITY

COAL BULK DENSITY







COMPANY: Texaco Inc. Mt. Pleasant Unit
WELL: Unit 1-3
FIELD: Mt. Pleasant
COUNTY: Brazoria
STATE: Texas
Other Services: Dip, Caliper, Gamma Ray, Neutron, Density
Permanent Datum: Ground Level
Elev.: 0 Ft.
Log Measured From: Rig Floor
Drilling Measured From: Rig Floor
Elev.: 0 Ft.

DENSILOG
- Gamma Ray
- Caliper

Run No. 1
Date 2-8-78
Depth-Driller 6000
Depth-Logger 6000
Bottom Log Interval 6000
Top Log Interval 0
Casing-Driller 13 3/8 @ 1000
Casing-Logger 13 3/8 @ 1000
Bit Size 12 1/4
Type Fluid in Hole Brine
Dens. 9.8
Visc. 40
pH 7
Fluid Loss 8.0
Source of Sample Flowline
Rm @ Meas. Temp. .85 @ 74 °F
Rmf @ Meas. Temp. .75 @ 74 °F
Rmc @ Meas. Temp. .9 @ 74 °F
Source: Rmf Rmc Flowline
Rm @ BHT .85 @ 74 °F
Rmf @ BHT .75 @ 74 °F
Rmc @ BHT .9 @ 74 °F
Time Since Circ. 3 Hrs.
Max. Rec. Temp. 74 °F
Equipment No. 1-3
Location Brazoria, Texas
Recorded By Bob Bailey
Witnessed By Mr. Lee

Field Name

RESERVOIR
Changes in Mud Type or Additional Stimulation
Depth of Stimulation
Type Completion
Production Stimulation
Fluid Used
Gas Rate
Oil Rate
Water Rate
Gas-Oil Ratio
Gravity
Gas Gravity
Tubing Size
Tubing Depth
Tubing Type
Packer Type
Bottom Hole Temp.
Fluid Level
Wellhead Pressure

Log Interval
Scale Changes
Run No. | Scale Log | Depth | Scale Log Interval | Scale Sonic Interval

Equipment Data
Run No. | Tool Type | Type Recorder | Other

Length Data
Log | Depths From | Depths To | Length Run | Recorded By | Witnessed By
L-1 | 1000. | 6000. | 5000 | Bob | Lee
S-1 | 1000. | 6000. | 5000 | Bob | Lee
G-1 | 1000. | 6000. | 5000 | Bob | Lee

Depths 1:240
LONG SPACED DENSITY
6000 500 0

COAL BULK DENSITY
g/cm³
2.0 2.1 2.2 2.3 2.4 2.5 2.6 2.7 2.8 2.9 3.0 3.1 3.2 3.3 3.4 3.5 3.6

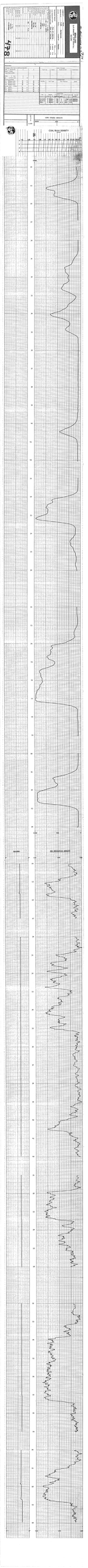
6000 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 6000 500 0

CALIPER
6" 16"

NEG ABSORPTION DENSITY
750 GAM 550

20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36

6" 16" 750 GAM 550


COAL SEAM DENSITY

DETAIL LOGS
L.S.Density, B.R.Density, Caliber

T-85

478

COMPANY	Teck
BOREHOLE	T-85 Bullmoose
STATE	B.C.
COUNTRY	Canada
Permanent Datum	Elev ___ Ft.
Log measured from	Top of Casing — Ft.above P.D.
Drilling measured from	Top of Casing — Ft.above P.D.

Run No.	1		
Depth Scale	1:20		
Date	8 July 1977		
First Reading	38m		
Last Reading	20m		
Interval Measured	2 Details		
Casing BPB			
Casing Driller			
Depth Reached	46.5m		
Bottom Driller			
Mud Nature	Bentonite		
SG / Viscosity			
Bit Size 1	HQ to T.D.	to	to
2	to	to	to
3	to	to	to
Casing Size 1	to	to	to
2	to	to	to
3	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time	½ hr.		
Truck No.	V21/35		
Recorded By	R.Bishop		
Witness			

REMARKS

Changes in Mud Type or Additional Samples

Date / Sample No.			
Depth — Driller			
Type Fluid in Hole			
Dens. / Visc.			
ph. / Fluid Loss	ml		
Source of Sample			
Rm @ Meas Temp.	@ °F	@ °F	
Rmf @ Meas Temp.	@ °F	@ °F	
Rmc @ Meas Temp.	@ °F	@ °F	
Source: Rmf / Rmc			
Rm @ BHT	@ °F	@ °F	
Rmf @ BHT	@ °F	@ °F	
Rmc @ BHT	@ °F	@ °F	

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
L.S.D.	2 Dets.		2½	1	.670	110	M5852
B.R.D.	2 Dets.		2½	1	out	110	M5852
Cal.	2 Dets.		2½	0.3	out	110	

DEPTHS 1:20

LONG SPACED DENSITY

6000 SDU 0

DETAIL LOGS

Gamma Ray, L.S.Density,

B R Density

BPB

COMPANY Teck

BOREHOLE T-86 Bullmoose

STATE B.C. COUNTRY Canada

Permanent Datum Top of Casing Elev ___ Ft.

Log measured from Datum 1.75 m below P.D.

Drilling measured from Top of Casing Ft. above P.D.

Bullmoose 77 (3) A. T-86

Run No.	1		
Depth Scale	1:20		
Date	17 Aug. 1977		
First Reading	47m		
Last Reading	32m		
Interval Measured	1 detail		
Casing BPB			
Casing Driller			
Depth Reached			
Bottom Driller			
Mud Nature	Bentonite		
S.G. / Viscosity			
Bit Size 1	HQ to T.D.	to	to
2	to	to	to
3	to	to	to
Casing Size 1	to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
BHT			
Operating Time			
Truck No.			
Recorded By	P.Waters		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth – Driller				
Type Fluid in Hole				
Dens. / Visc.				
ph. / Fluid Loss		ml		
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source: Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
L.S.D.	1 det.		2½	1	out	119	
Gamma	1 det.		2½	2	out	119	
B.R.D.	1 det.		2½	2	out	119	

N.B. Depths are measured from 1.75m below top of casing

Logs replayed from tape made by BP Coal logging engineer

Hole logged through drill rods

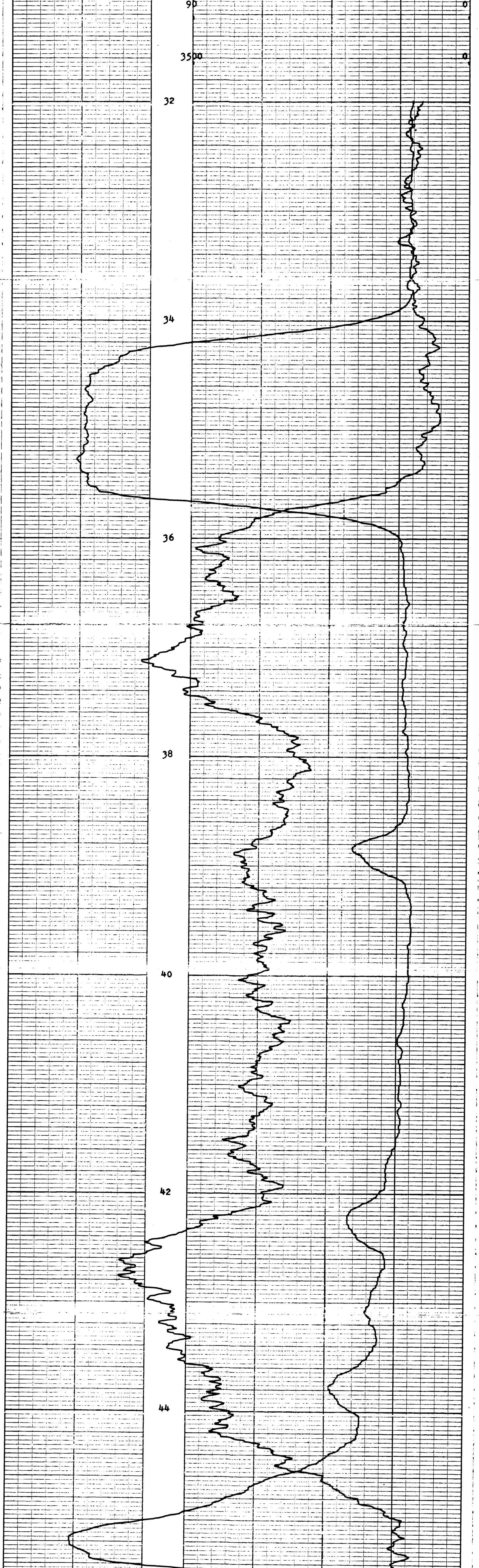
GAMMA RAY

L.S.DENSITY

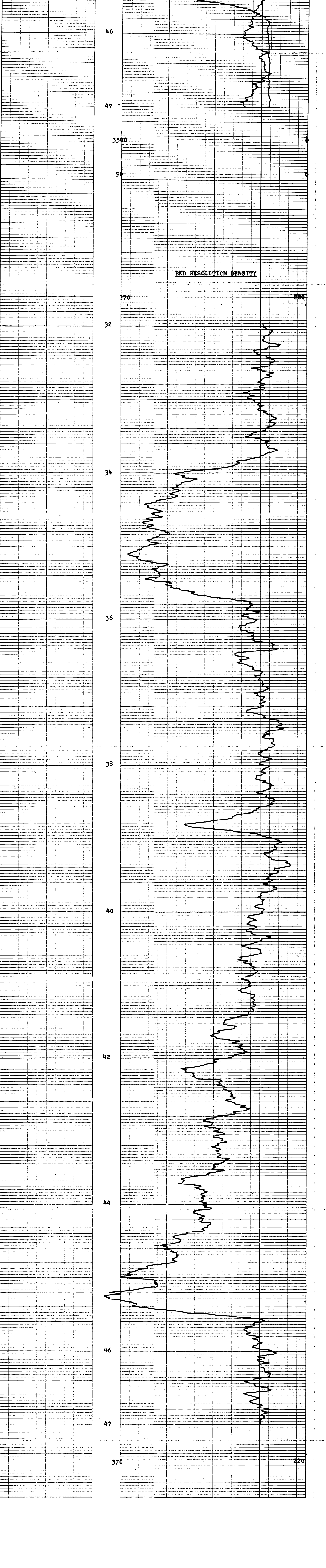
DEPTHS 1:20

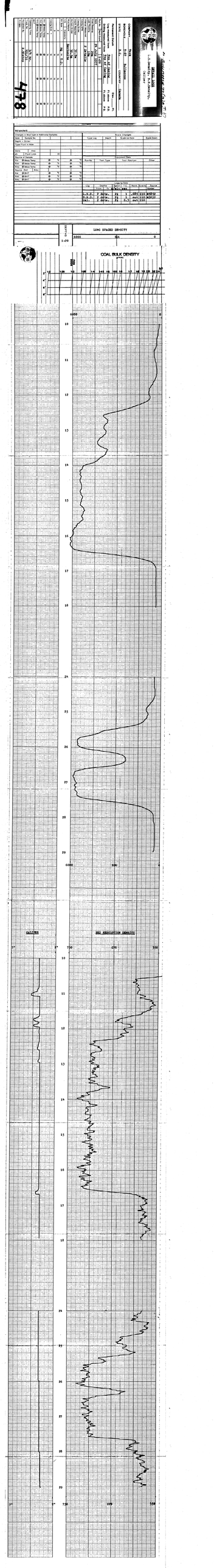
90 CPS 0

3500 CPS 0



BED RESOLUTION DENSITY





COMPANY: Texaco
WELL: Hillsboro
FIELD: Coal Creek
COUNTY: Fremont
STATE: Colorado
Permanent Datum: Elev.
Log Measured from: 7.5' AGL
Drilling Measured from: KB
Elev.: K.B. 7.5'
Date: 2-16-77
Run No.: One
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Log Interval: 6000
Top Log Interval: 0
Casing-Driller: 8 5/8 @ 1200
Casing-Logger: None
Bit Size: 7 7/8
Type Fluid in Hole: Water
Density: 8.8
Viscosity: 35
Fluid Loss: N.C.
pH: 7.5
Source of Sample: Flowline
Rm @ Meas. Temp.: .75 @ 75°F
Rmf @ Meas. Temp.: .75 @ 75°F
Rmc @ Meas. Temp.: .75 @ 75°F
Rm @ BHT: .75 @ 75°F
Time Since Circulation: 6 hrs.
Max. Rec. Temp.: 75°F
Equipment Number: 2025
Location: Fremont Co., Colorado
Recorded By: Hoffman
Witnessed By: Mr. Hoffman
LONG SPACED DENSITY
COAL BULK DENSITY
GAMMA RAY
RED RESOLUTION DENSITY
478

SCHLUMBERGER WELL SERVICES
HOUSTON, TEXAS

COMPANY SHELL
WELL BOSCOVICH 2 DEEP
FIELD WILDCAT
COUNTY GALVESTON STATE TEXAS
Location: Other Services
Permanent Datum: SEA LEVEL Elev.: 0
Log Measured From: KELLY BUSHING 7 Ft. Above Perm. Datum
Drilling Measured From: KELLY BUSHING
Elev.: K.B. 7 D.F. G.L.

Date	1-11-72		
Run No.	ONE		
Depth-Driller	6000		
Depth-Logger	6000		
Bottom Logged Interval	6000		
Top Logged Interval	5700		
Type Fluid in Hole	SALT GEL		
Salinity, PPM Cl	190000		
Density	10.0		
Level	FULL		
Max. Rec. Temp. Deg. F.	220		
Operating Rig Time	12 HRS		
Recorded By	R. STEVENS		
Witnessed By	MR. S. T. S.		

Run No.	ONE		
Tool Type	LSD		
Tool Number	1220		
Tool Position			
Max. Rec. Temp. Deg. F.	220		
Equipment No.	1220		
Location			
Recorded By	R. STEVENS		
Witnessed By	MR. S. T. S.		

Third Name

REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.			
Depth	Driller			
Type Fluid in Hole				
Gels	Visc.			
pH	Fluid Loss			ml
Source of Sample				
Rm @ Meas. Temp.		@		°F
Rmf @ Meas. Temp.		@		°F
Rmc @ Meas. Temp.		@		°F
Source: Rmf	Rmc			
Rm @ BHT		@		°F
Rmf @ BHT		@		°F
Rmc @ BHT		@		°F

Truck Charges

Type Log	Depth	Scale as Hole	Scale Down

Equipment Data

Run No.	Tool Type	Tool Number	Other

Logging Data

Log	Depths Logger	Depths Driller	Feet	Speed	Density Sensitivity
1st Log	6000 ft.	6000 ft.	5700	20 ft./min.	1.0
2nd Log	6000 ft.	6000 ft.	5700	20 ft./min.	1.0
3rd Log	6000 ft.	6000 ft.	5700	20 ft./min.	1.0

Note : Long Spaced Density run with 0.1 second time constant.

LONG SPACED DENSITY

6000 | 5700 | 0

1"=5"/100

1"=20'

COAL BULK DENSITY
gm/cc

2.5 2.28 2.0 1.86 1.6 1.44 1.28 1.12 1.0 .88 .72 .56 .4 .24 .08

2" 4" 6" 8"

6000 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 35 | 36 | 37 | 38 | 39 | 40 | 6000

CALIPER

6" 16"

MED RESOLUTION DENSITY

2.75 2.25 1.75

22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 35 | 36 | 37 | 38 | 39 | 40

6" 16" | 2.75 2.25 1.75

COMPANY: SHELL OIL COMPANY
WELL: 1-A.L. Schlueter
FIELD: Shields
COUNTY: Finney
STATE: Kansas
LOCATION: 1980' FSL & 1980' FEL
Sec. 1 Twp. 24S Rng. 31W
Other Services: DIL, BHC, CDL, CNL, GR
Permanent Datum: Ground Elevation
Elevations: K.B. 2956, D.F. 2955, G.L. 2946
Log Measured From: K.B. 10 Ft. Above Perm. Datum
Drilling Measured From: K.B.
Date: 1-5-83
Run No.: ONE
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Logged Interval: 6000
Top Logged Interval: 2500
Type Fluid in Hole: Chem
Salinity: 9.4
Density: 9.0
Viscosity: 40
Fluid Loss: 6.4
Source of Sample: Flowline
Rm @ Meas Temp: .84 @ 70°F
Rmf @ Meas Temp: .63 @ 70°F
Rmc @ Meas Temp: 1.25 @ 70°F
Source of Rmf & Rmc: Calc. Calc.
Rm @ BHT: .37 @ 140°F
Time Since Circ.: 6 HRS.
Max. Rec. Temp. Deg. F: 140°F
Equipment No. & Location: 1356 - 1357
Recorded By: J. Hall
Witnessed By: Mr. Schlueter

RUN: ONE
Date: 1-5-83
Type Log: DIL
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Logged Interval: 6000
Top Logged Interval: 2500
Casing-Driller: 8 5/8 @ 2500
Casing-Logger: 2500
Bit Size: 7 7/8
Type Fluid in Hole: Chem
Salinity: 9.4
Density: 9.0
Viscosity: 40
Fluid Loss: 6.4
Source of Sample: Flowline
Rm @ Meas Temp: .84 @ 70°F
Rmf @ Meas Temp: .63 @ 70°F
Rmc @ Meas Temp: 1.25 @ 70°F
Source of Rmf & Rmc: Calc. Calc.
Rm @ BHT: .37 @ 140°F
Time Since Circ.: 6 HRS.
Max. Rec. Temp. Deg. F: 140°F
Equipment No. & Location: 1356 - 1357
Recorded By: J. Hall
Witnessed By: Mr. Schlueter

RUN: TWO
Date: 1-6-83
Type Log: BHC
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Logged Interval: 6000
Top Logged Interval: 2500
Casing-Driller: 8 5/8 @ 2500
Casing-Logger: 2500
Bit Size: 7 7/8
Type Fluid in Hole: Chem
Salinity: 9.4
Density: 9.0
Viscosity: 40
Fluid Loss: 6.4
Source of Sample: Flowline
Rm @ Meas Temp: .84 @ 70°F
Rmf @ Meas Temp: .63 @ 70°F
Rmc @ Meas Temp: 1.25 @ 70°F
Source of Rmf & Rmc: Calc. Calc.
Rm @ BHT: .37 @ 140°F
Time Since Circ.: 6 HRS.
Max. Rec. Temp. Deg. F: 140°F
Equipment No. & Location: 1356 - 1357
Recorded By: J. Hall
Witnessed By: Mr. Schlueter

RUN: THREE
Date: 1-6-83
Type Log: CDL
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Logged Interval: 6000
Top Logged Interval: 2500
Casing-Driller: 8 5/8 @ 2500
Casing-Logger: 2500
Bit Size: 7 7/8
Type Fluid in Hole: Chem
Salinity: 9.4
Density: 9.0
Viscosity: 40
Fluid Loss: 6.4
Source of Sample: Flowline
Rm @ Meas Temp: .84 @ 70°F
Rmf @ Meas Temp: .63 @ 70°F
Rmc @ Meas Temp: 1.25 @ 70°F
Source of Rmf & Rmc: Calc. Calc.
Rm @ BHT: .37 @ 140°F
Time Since Circ.: 6 HRS.
Max. Rec. Temp. Deg. F: 140°F
Equipment No. & Location: 1356 - 1357
Recorded By: J. Hall
Witnessed By: Mr. Schlueter

RUN: FOUR
Date: 1-6-83
Type Log: CNL
Depth-Driller: 6000
Depth-Logger: 6000
Bottom Logged Interval: 6000
Top Logged Interval: 2500
Casing-Driller: 8 5/8 @ 2500
Casing-Logger: 2500
Bit Size: 7 7/8
Type Fluid in Hole: Chem
Salinity: 9.4
Density: 9.0
Viscosity: 40
Fluid Loss: 6.4
Source of Sample: Flowline
Rm @ Meas Temp: .84 @ 70°F
Rmf @ Meas Temp: .63 @ 70°F
Rmc @ Meas Temp: 1.25 @ 70°F
Source of Rmf & Rmc: Calc. Calc.
Rm @ BHT: .37 @ 140°F
Time Since Circ.: 6 HRS.
Max. Rec. Temp. Deg. F: 140°F
Equipment No. & Location: 1356 - 1357
Recorded By: J. Hall
Witnessed By: Mr. Schlueter

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REMARKS
Changes in Mud, Type or Additional Gelations
Run 1: Details No.
Run 2: Details No.
Type Fluid in Hole

Hours: Since
Recorded Temperatures
Max. @ Meas. Temp. @ °F
Max. @ Meas. Temp. @ °F
Max. @ Meas. Temp. @ °F
Max. @ BHT @ °F
Max. @ BHT @ °F
Max. @ BHT @ °F

Hole logged with rig on site

Scale Changes
Type Log | Depth | Scale up Hole | Scale Down

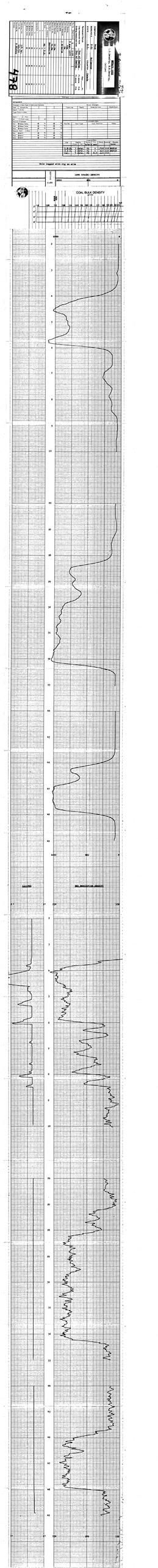
Equipment Data
Run No. | Tool Type | Recr. Precision | Other

Logging Data
Log | Depth Driller | Depth Logger | Btm. Logged Interval | Top Logged Interval | Casing Driller | Casing Logger | Bit Size
1-D-D | 6000 | 6000 | 6000 | 2500 | 8 5/8 @ 2500 | 2500 | 7 7/8
1-D-C | 6000 | 6000 | 6000 | 2500 | 8 5/8 @ 2500 | 2500 | 7 7/8
Cal | 6000 | 6000 | 6000 | 2500 | 8 5/8 @ 2500 | 2500 | 7 7/8

LONG SPACED DENSITY
6000 2500

COAL BULK DENSITY
GR/CC

DELTA-T
MICRO RESISTIVITY NORMAL



PR-BULLMOOSE 77(3)A T-93

DETAIL LOGS
L.S.Density, B.R.Density

COMPANY	Teck
BOREHOLE	T-93 Bullmoose
STATE	B.C.
COUNTRY	Canada
Permanent Datum	Elev ___ Ft.
Log measured from	Top of Casing Ft. above P.D.
Drilling measured from	Top of Casing Ft. above P.D.

Run No.	1		
Depth Scale	1:20		
Date	30 July 1977		
First Reading	54m		
Last Reading	37m		
Interval Measured	2 details		
Casing BPB			
Casing Driller			
Depth Reached	59.1m		
Bottom Driller	59.7m		
Mud Nature	Bentonite		
Viscosity			
S.G.			
Bit Size 1	HQ to T D	to	to
2	to	to	to
3	to	to	to
Casing Size 1	to	to	to
2	to	to	to
Rm @ Meas Temp.	@	@	@
Rmf @ Meas Temp.	@	@	@
Rmc @ Meas Temp.	@	@	@
SHT			
Operating Time	1 hr.		
Truck No.	V21/35		
Recorded By	R.Bishop		
Witness			

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REMARKS

Changes in Mud Type or Additional Samples				
Date / Sample No.				
Depth — Driller				
Type Fluid in Hole				
Dens. / Visc.				
ph. / Fluid Loss			ml	
Source of Sample				
Rm @ Meas Temp.	@	°F	@	°F
Rmf @ Meas Temp.	@	°F	@	°F
Rmc @ Meas Temp.	@	°F	@	°F
Source: Rmf / Rmc				
Rm @ BHT	@	°F	@	°F
Rmf @ BHT	@	°F	@	°F
Rmc @ BHT	@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

Equipment Data

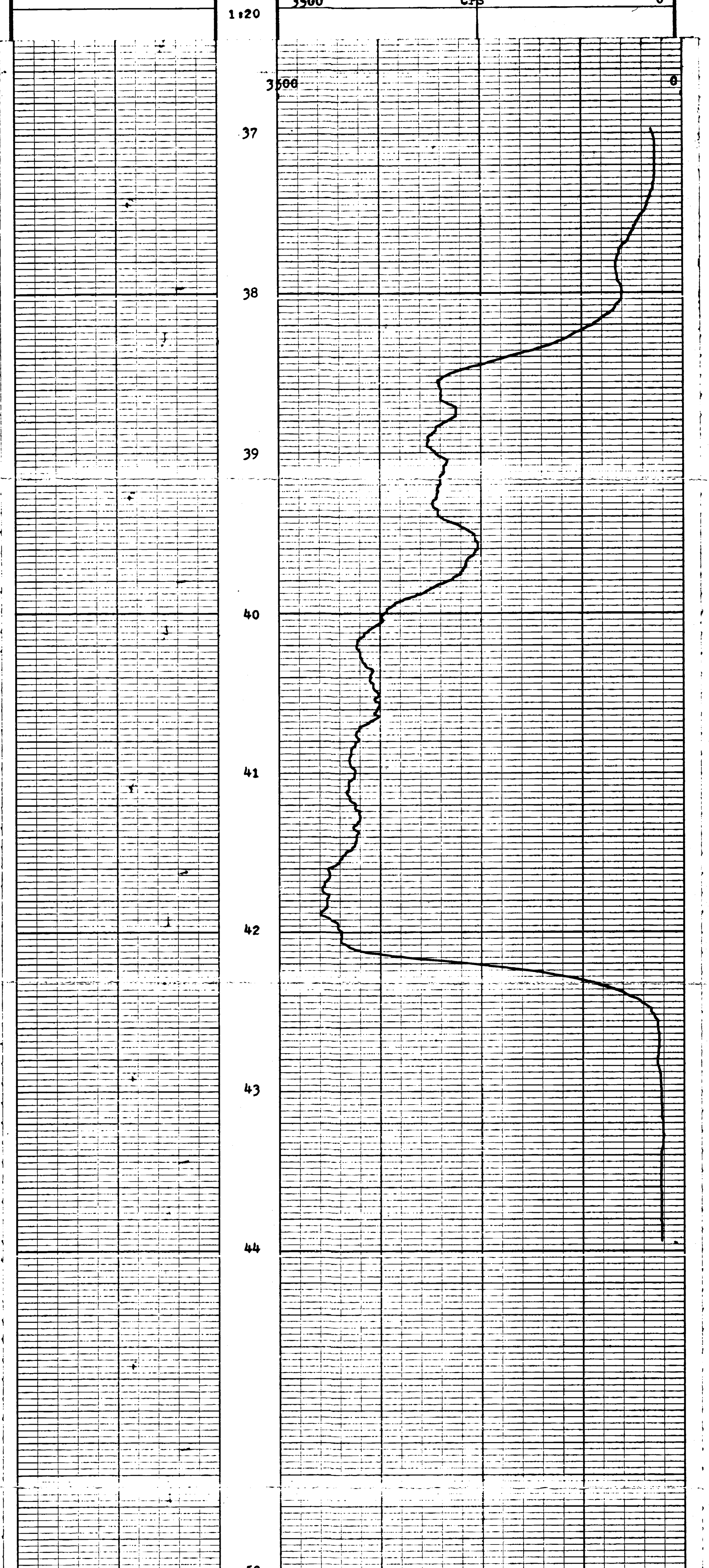
Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	To	Speed	T.C.	Norm.	Sonde No.	Source Number
L.S.D.	2 dets.		2½	1	out	110	M5852
B.R.D.	2 dets.		2½	2	out	110	M5852

Hole logged through drill rods

DEPTHS 1:20 — LONG SPACED DENSITY — 3500 CPS 0



COMPANY Teck
BOREHOLE Red Mountain
STATE B.C. COUNTRY Canada

Permanent Datum ____ Elev. ____ Ft.
Log measured from Top of Casing Ft. above P.D.
Drilling measured from Top of Casing Ft. above P.D.

Run No.	Depth Scale	Date	Time
1	1:20	21 Aug. 1977	

Date 24m
First Reading
Last Reading
Recorded by 19m
Witnessed 1 detail

Casing Size 1 / 2 / 3 — To 10 / 10 / 10
Casing Weight 1 / 2 / 3 — To 10 / 10 / 10
Casing Grade 1 / 2 / 3 — To 10 / 10 / 10
Casing Driller — To 10
Depth Reached 26.3m
Bottom Driller 26.0m
Bottom Logger
Type Fluid in Hole Bentonite
S.G. Viscosity
Bit Size 1 HQ To T.D. 10
2 To 10
3 To 10

Rm @ Meas. Temp. @ °F
Rmf @ Meas. Temp. @ °F
Rmc @ Meas. Temp. @ °F
Source: Rmf Rmc
Rm @ BHT @ °F @ °F
Rmf @ BHT @ °F @ °F
Rmc @ BHT @ °F @ °F

Operating Time
Truck No. V21/35
Recorded By R.Bishop
Witness

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DETAIL LOGS

U.S.Density, B.R.Density

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.					
Depth – Driller						
Type Fluid in Hole						
Dens.	Visc.					
ph	Fluid Loss	ml				
Source of Sample						
Rm @ Meas. Temp.	@ °F	@ °F				
Rmf @ Meas. Temp.	@ °F	@ °F				
Rmc @ Meas. Temp.	@ °F	@ °F				
Source: Rmf Rmc						
Rm @ BHT	@ °F	@ °F				
Rmf @ BHT	@ °F	@ °F				
Rmc @ BHT	@ °F	@ °F				

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

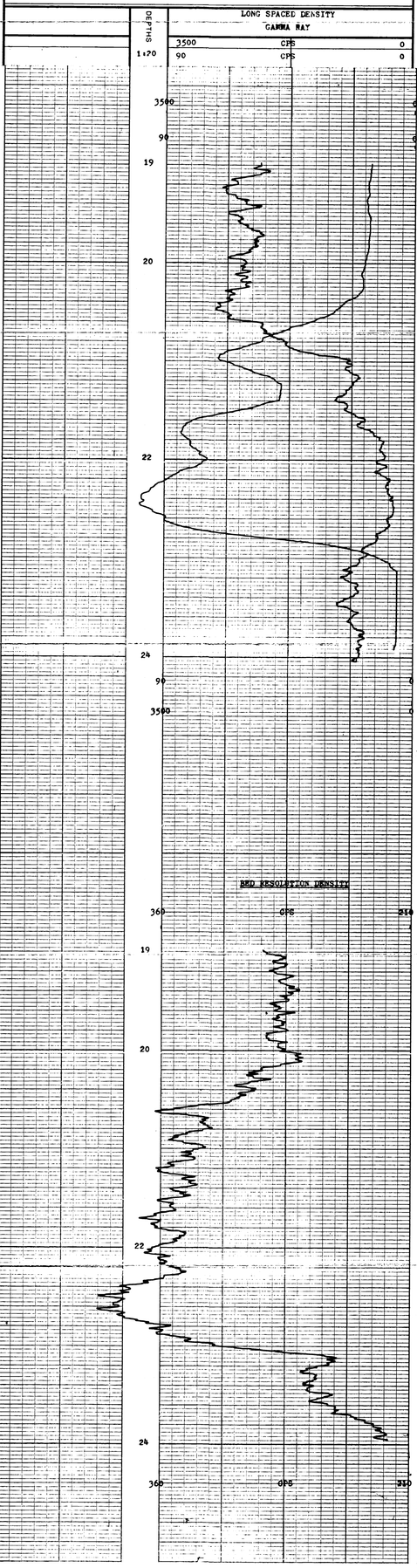
Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	To	Speed M/min	T.C.	Norm.	Source Number
Gamma	1 det.		22	2	out 110	
L.S.D.	1 det.		22	1	out 110	M5852
B.R.D.	1 det.		21	2	out 110	M5852

Hole logged through rods - rig on site



COMPANY — Shell Canada Limited
WELL — Bellshaw et al Hz Sarnia
FIELD — Sarnia
STATE — Ontario
COUNTY — Lambton
Permanent Datum — Elev. — Ft.
Log Measured from — Ft. Above P.D.
Drilling Measured from — Ft. Above P.D.

Date: 3-12-
Run No.: One
Depth-Driller: 2384.0
Depth-Logger: 2384.0
Bottom Logged Interval: 2384.0
Top Logged Interval: 1077.0
Type Fluid in Hole: Gel Chem
Salinity, PPM Cl: 3000
Density: 9.2 lbs/gal
Viscosity: 54 sec
Fluid Loss: 5 cc
Source of Sample: Flowline
Rm @ Meas. Temp.: 0.70 @ 70 °F
Rmf @ Meas. Temp.: @ °F
Rmc @ Meas. Temp.: @ °F
Source of Rmf / Rmc: M / M
Rm @ BHT: @ °F
Rmf @ BHT: @ °F
Rmc @ BHT: @ °F
Circulation Stopped: 1:30
Logger on Bottom: 3:45
Max. Rec. Temperature: 70 °F
Equipment No. & Location: 2 Sarnia
Recorded By: R. Hall
Witnessed By: Mr. Doherty

SCHLUMBERGER
DUAL INDUCTION-LATEROLOG
SPHERICALLY FOCUSED LOG
BOREHOLE COMPENSATED SONIC LOG
GAMMA RAY-NEUTRON

Mr. Doherty 3-12-87

4478

Field Print

REMARKS:

Changes in Mud Type or Additional Samples
Date | Sample No.
Depth — Driller
Type Fluid in Hole
Dens. | Visc.
pH | Fluid Loss
Source of Sample
Rm @ Meas. Temp. | @ °F | @ °F
Rmf @ Meas. Temp. | @ °F | @ °F
Rmc @ Meas. Temp. | @ °F | @ °F
Source: Rmf | Rmc
Rm @ BHT | @ °F | @ °F
Rmf @ BHT | @ °F | @ °F
Rmc @ BHT | @ °F | @ °F

Scale Changes
Type Log | Depth | Scale Up Hole | Scale Down

Equipment Data
Run No. | Tool Type | Tool Position | Other

Casing Data
Log | Depths (Logger) | Bit Size | Depths (Driller) | Weight | Strength | Source
G.R.S.N. | 2.0414 | 7.88 | 2.0414 | 23 | J | New | API 5CT
Dens. | 2.0414 | 7.88 | 2.0414 | 23 | J | New | API 5CT
D.F.L. | 2.0414 | 7.88 | 2.0414 | 23 | J | New | API 5CT

Hole logged through drill rods - rig on site

GAMMA RAY
L.S.DENSITY

CPS 90 0
CPS 3500 0

HRD RESOLUTION DENSITY

1420
90
3500
17
18
20
22
24
31
32
34
36
90
3500
17
18
20
22
24
31
32
34
36
340
340
210
210

T-98
Pr. Bullmoose 77(3)A

DETAIL LOGS
L.S.Density, Gamma Ray,
B.R.Density

COMPANY Teck
BOREHOLE T-98 Bullmoose
STATE B.C. COUNTRY Canada

Permanent Datum _____ Elev ____ Ft.
Log measured from Top of Casing Ft. above P.D.
Drilling measured from Top of Casing Ft. above P.D.

Run No.	Depth Scale	1	1:20
Date		25 Aug. 1977	
First Reading		13m	
Last Reading		9m	
Interval Measured		1 detail	
Casing BPB			
Casing Driller			
Depth Reached		15.5m	
Bottom Driller		15.2m	
Mud Nature		Bentonite	
S.G.	Viscosity		
Bit Size 1		HQ to T.D.	to
2		to	to
3		to	to
Casing Size 1		to	to
2		to	to
Rm @ Meas Temp.		@	@
Rmf @ Meas Temp.		@	@
Rmc @ Meas Temp.		@	@
Rmf @ BHT		@	@
Operating Time		8 hr.	
Truck No.		V21/35	
Recorded By		R.Bishop	
Witness			

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REMARKS

Changes in Mud Type or Additional Samples

Date	Sample No.				
Depth — Driller					
Type Fluid in Hole					
Dens.	Visc.				
ph.	Fluid Loss		ml		
Source of Sample					
Rm @ Meas Temp.		@	°F	@	°F
Rmf @ Meas Temp.		@	°F	@	°F
Rmc @ Meas Temp.		@	°F	@	°F
Source: Rmf	Rmc				
Rm @ BHT		@	°F	@	°F
Rmf @ BHT		@	°F	@	°F
Rmc @ BHT		@	°F	@	°F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down

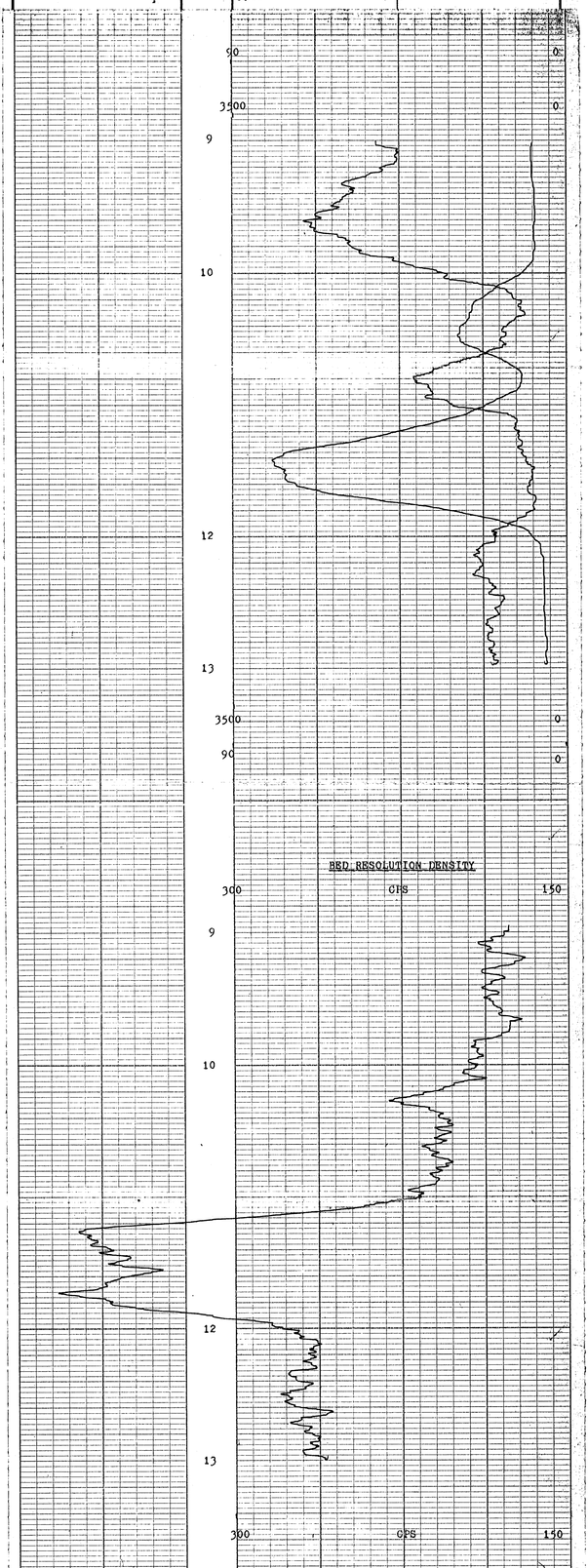
Equipment Data

Run No.	Tool Type	Tool Position	Other

Logging Data

Log	Depths From	Depths To	Speed m/min	T.C. sec	Norm.	Sonde No.	Source Number
Gamma	1	det.	2¼	2	out	110	
L.S.D.	1	det.	2¼	1	out	110	M5852
B.R.D.	1	det.	2¼	2	out	110	M5852

Hole logged through rods - rig on site



COMPANY TECK CORPORATION
WELL Mt. Mackenzie #478
FIELD Bullmoose
STATE British Columbia COUNTY Omineca
Permanent Datum Ground Level Elev. ft.
Log Measured from 25 ft. above P.D. Elev. ft.
Drilling Measured from Rotary Table P.D. Elev. ft.

Run No.	Date	Depth Driller	Depth Logger	Bottom Logged Interval	Top Logged Interval	Type Fluid in Hole	Salinity ppm	Density lb/gal	Viscosity sec	Fluid Loss cc/30min	Source of Sample	Rm @ Meas. Temp.	Rmf @ Meas. Temp.	Rmc @ Meas. Temp.	Source of Rmf and Rmc	Rm @ BHT	Rmf @ BHT	Rmc @ BHT	Max. Rec. Temp. Deg. F.	Equipment Number	Location	Recorded By	Witnessed By
1	7-Jul-84	1100	1100	1100	SURF	WATER		8.3	26	15.0		@	@	@		@	@	@					
												@	@	@		@	@	@					
												@	@	@		@	@	@					

Type Log | Depth | Scale Up Hole | Scale Down

Scale Changes

Run No. | Pass Type | Tool Position | Other

Electrode Set

Log	Depths Logged From	To	Feet Logged	Bore-hole Record	Casing Record	Bit Size
Caliper & Details	23	1100	-	11"		
GRAD & Details	23	1	-	11"	K5565	

REMARKS

Changes in Mud Type or Additional Samples
Date | Sample No. | Depth | Depth = Driller
Type Fluid in Hole
Density | Viscosity
pH | Fluid Loss | cc

Source of Sample
Rm @ Meas. Temp. @ °F = @ °C
Rmf @ Meas. Temp. @ °F = @ °C
Rmc @ Meas. Temp. @ °F = @ °C
Source: Rmf | Rmc
Rm @ BHT @ °F = @ °C
Rmf @ BHT @ °F = @ °C
Rmc @ BHT @ °F = @ °C

CALIPER | 6 INCH | S. P. | S. P. DENSITY

6"	0	360	
6"	0	360	

CALIPER | SP | S. P. DENSITY

COMPANY TECK CORPORATION
BOREHOLE Log Bullmoore
FIELD Bullmoose
COUNTY BC Canada STATE BC