SCHLUMBERGER

COMPUTED INTERPRETATION

Company: [illegible]
Well: [illegible]
Field: [illegible]
County: [illegible]
State: [illegible]

Company: [illegible]
Well: [illegible]
Field: [illegible]
County: [illegible]
State: [illegible]

Date: [illegible]
Run No.: [illegible]
Depth Driller: [illegible]
Depth Logger: [illegible]
Bottom Log Interval: [illegible]
Top Log Interval: [illegible]
Casing Driller: [illegible]
Casing Logger: [illegible]
Bit Size: [illegible]
Type Fluid in Hole: [illegible]
Density: [illegible]
Viscosity: [illegible]
Fluid Loss: [illegible]
Source of Sample: [illegible]
Rm at Meas. Temp.: [illegible]
Rmf at Meas. Temp.: [illegible]
Rmc at Meas. Temp.: [illegible]
Rm at BHT: [illegible]
Rmf at BHT: [illegible]
Rmc at BHT: [illegible]
Max. Rec. Temp.: [illegible]
Equipment Location: [illegible]
Recorded By: [illegible]
Witnessed By: [illegible]

Run No.	Date	Depth Driller	Depth Logger	Bottom Log Interval	Top Log Interval	Casing Driller	Casing Logger	Bit Size
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Run No.	Service Order	Depth	Type Fluid in Hole	Density	Viscosity	Fluid Loss	Source of Sample	Rm at Meas. Temp.	Rmf at Meas. Temp.	Rmc at Meas. Temp.	Rm at BHT	Rmf at BHT	Rmc at BHT	Max. Rec. Temp.
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Run No.	Bit Size	From	To	Size	Weight	Grade	Joints	From	To	Size	Weight	Grade	Joints
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Run No.	Equipment Location	Recorded By	Witnessed By
[illegible]	[illegible]	[illegible]	[illegible]

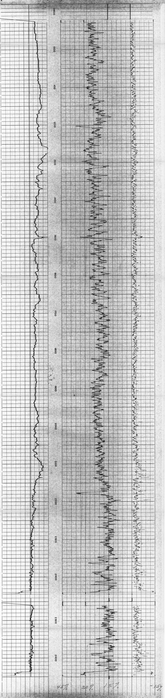
Remarks:

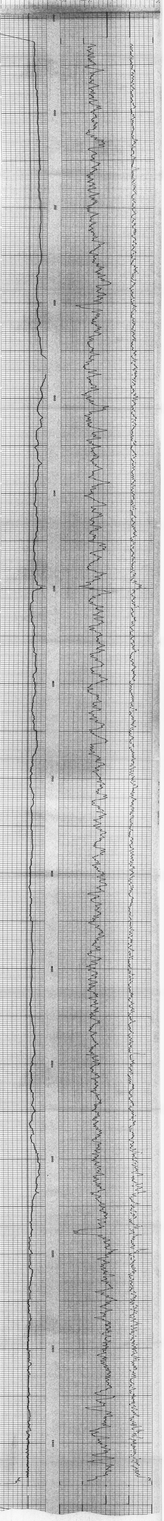
CALIPER
HOLE SIZE IN INCHES
6 16

CORRECTION
CORRECTION IN INCHES
-1 1

BULK DENSITY
DENSITY
1.95 3

GAMMA RAY
API UNITS
0 100





SCHLUMBERGER INDUCTION-ELECTRICAL LOG

COMPANY: EL PASO NATURAL GAS, MINING DIVISION
WELL: CHRISTMAS TREE #4
FIELD: WILDCAT
COUNTY: MOJAVE STATE: ARIZONA
LOCATION: Other Services:
Sec. 5 Twp. 22N Rge. 18W

Permanent Datum: GL Elev. 3306
Log Measured From: GL ___ Ft. Above Perm. Datum
Drilling Measured From: GL
Elev.: K.B. ___ D.F. ___ G.L. ___

Date	1-13-69			
Run No.	ONE			
Depth—Driller	2437			
Depth—Logger	2436			
Btm. Log Interval	2435			
Top Log Interval	150			
Casing—Driller	- @ -	@	@	@
Casing—Logger	-			
Bit Size	12 1/4			
Type Fluid in Hole	FGM			
Dens. / Visc.				
pH / Fluid Loss	ml	ml	ml	ml
Source of Sample	CIRC			
R_m @ Meas. Temp.	12.1 @ 56 °F	@ °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	7.0 @ 70 °F	@ °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F	@ °F	@ °F
Source: R_{mf} / R_{mc}	M / C			
R_m @ BHT	6.1 @ 120 °F	@ °F	@ °F	@ °F
Time Since Circ.	3 HR			
Max. Rec. Temp.	120 °F	°F	°F	°F
Equip. / Location	3781 / LB			
Recorded By	SPERLING			
Witnessed By	MR. MEAD			

FOLD HERE — The well name, location and borehole reference data were furnished by the customer.

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		
R_m @ Meas. Temp.	@ °F	@ °F
R_{mf} @ Meas. Temp.	@ °F	@ °F
R_{mc} @ Meas. Temp.	@ °F	@ °F
Source: R_{mf} / R_{mc}		
R_m @ BHT	@ °F	@ °F
R_{mf} @ BHT	@ °F	@ °F
R_{mc} @ BHT	@ °F	@ °F

Scale Changes

Type Log	Depth	Scale Up Hole	Scale Down Hole

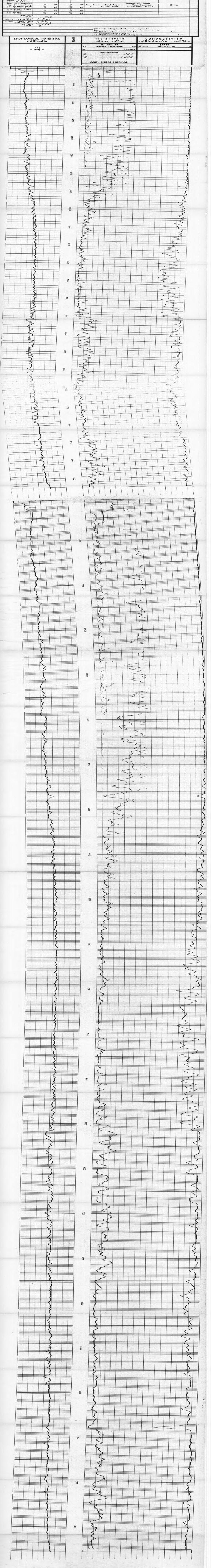
Equipment Data

Run No.	Tool Type	Tool Position	Other
1	6FF40	STAND OFF	

Run No.: 1
C.D.: USED
S.O.: 1.5
Equip. Used: PANEL No.: H481
CART. No.: F98
SONDE No.: M463
IAP No.: D309
S.B.R.: 2

Check one, filling in blanks where applicable:
☒ Surface determined sonde errors used for 6FF40.
☐ 6FF40 sonde error corrected for ___ inch borehole signal at Rm = ___
☐ 6FF40 zero set in hole at depth of ___ feet.

SPONTANEOUS POTENTIAL millivolts	DEPTHS	RESISTIVITY ohms - m²/m	CONDUCTIVITY millimhos/m = 1000 / ohms - m²/m
− 10 +		A - 16" - M SHORT NORMAL 0 — 100 / 0 — 1000; INDUCTION 0 — 100 / 0 — 1000; AMP. SHORT NORMAL	6FF40 INDUCTION 500 — 0



SCHLUMBERGER INDUCTION-ELECTRICAL LOG

COUNTY ____ FIELD or LOCATION ____ WELL ____

COMPANY EL PASO NATURAL GAS

WELL CHRISTMAS TREE MINING DIVISION #3

FIELD WILDCAT

COUNTY NAVAJO STATE ARIZONA

LOCATION Sec. 5 Twp. 24N Rge. 18W

Other Services: Gr-Sonic

Permanent Datum: Gr. Elev. 5338 Elev.: K.B. 5348 D.F. 5337 G.L. 5338

Log Measured from: 24N Feet Above Perm. Datum

Drilling Measured from: Gr

Date	10/1/68	10/1/68	10/2/68		
Run No.	ONE	TWO	THREE		
Depth-Driller	2106	2110	2270		
Depth-Logger	2108	2108	2268		
Bottom Log Interval	2103	2103	2266		
Top Log Interval	1400	2000	1400		
Casing-Driller	13 3/8 @ 35	— @ —	— @ —	@	@
Casing-Logger	—	—	—		
Bit Size	12 1/4	8 3/4	8 3/4		
Type Fluid in Hole	GEL	GEL	GEL		
Dens. / Visc.	—	—	—		
ph / Fluid Loss	— ml	— ml	— ml	ml	ml
Source of Sample	CIRC	CIRC	CIRC		
R_m @ Meas. Temp.	— @ — °F	— @ — °F	— @ — °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	3.36 @ 74 °F	— @ — °F	— @ — °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	— @ — °F	— @ — °F	— @ — °F	@ °F	@ °F
Source R_{mf} / R_{mc}	M / —	M / —	M / —		
R_m @ BHT	@ °F	@ °F	@ °F	@ °F	@ °F
R_{mf} @ BHT	@ °F	@ °F	@ °F	@ °F	@ °F
R_{mc} @ BHT	@ °F	@ °F	@ °F	@ °F	@ °F
Max. Rec. Temp.	74 °F	74 °F	74 °F	°F	°F
Equip. Location	5-4-7	5-4-7	5-4-7		
Recorded by	CARR	CARR	CARR		
Witnessed by	LEWIS	LEWIS	LEWIS		

FOLD HERE — The well name, location and borehole reference data were furnished by the customer.

REMARKS ____

Changes in Mud Type or Additional Samples				Scale Changes		
Date / Sample No.	10/1 / 5	10/1 / 5		Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth—Driller	2550	2270					
Type Fluid in Hole	GEL	FOAM					
Dens. / Visc.							
ph / Fluid Loss	ml	ml					
Source of Sample	CIRC	CIRC					
R_m @ Meas. Temp.	@ °F	@ °F					
R_{mf} @ Meas. Temp.	3.36 @ 74 °F	@ °F					
R_{mc} @ Meas. Temp.	— @ — °F	@ °F					
Source R_{mf} / R_{mc}	M / —	M / —					
R_m @ BHT	@ °F	@ °F					
R_{mf} @ BHT	@ °F	@ °F					
R_{mc} @ BHT	@ °F	@ °F					

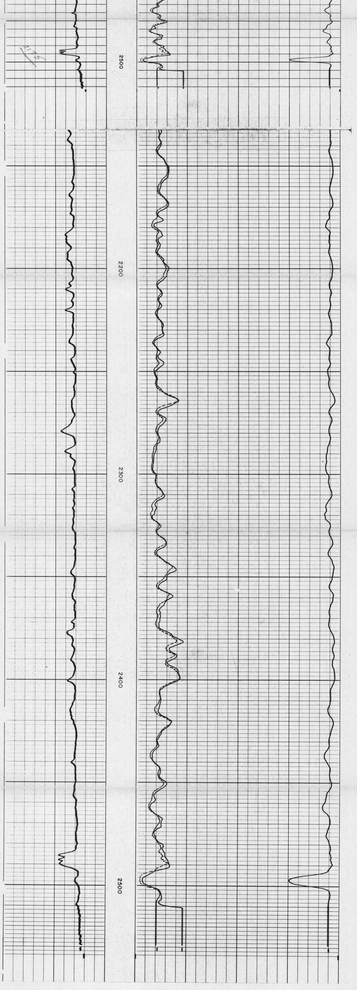
Equipment Data			
Run No.	Tool Type	Tool Position	Other
ONE	IES-E	STANDOFF	
TWO	IES-E	STANDOFF	
THREE	IES-E	STANDOFF	

Run No.: ONE TWO
CD: 8.5ED
SO: 14.5

Equip. PANEL No.: IES-E-482
Used: CART No.: IES-E-33
SONDE No.: IES-E-33
IAP No.: IAP-D-321
S.B.R.

Check one, filling in blanks where applicable:
- ☒ Surface determined sonde errors used for 6FF40.
- ☐ 6FF40 sonde error corrected for borehole signal at Rm = ____ inch
- ☐ 6FF40 zero set in hole at depth of ____ feet.

SPONTANEOUS POTENTIAL	GRAPHS	RESISTIVITY ohms-m²/m	CONDUCTIVITY millimhos/m = 1000 / ohms-m²/m
.100 millivolts		A-16"-M SHORT NORMAL 0 100 / 0 1000	6FF40 INDUCTION 500 0
10 / -+		INDUCTION 0 100 / 0 1000	
		AMP. SHORT NORMAL	



HOLLIS

SCHLUMBERGER INDUCTION-ELECTRICAL LOG

COUNTY
FIELD or LOCATION
WELL
COMPANY

COMPANY EL PASO NATURAL GAS CO. - MINING DIVISION

WELL CHRISTMAS TREE #2

FIELD WILDCAT

COUNTY MOJAVE STATE ARIZONA

LOCATION

Sec. 32 Twp. 23N Rge. 18W

Other Services: FDC-GR

Permanent Datum: G.L., Elev.
Log Measured From G.L., Ft. Above Perm. Datum
Drilling Measured From G.L.

Elev.: K.B.
D.F.
G.L. 3380±

Date	7-12-68	7-13-68		
Run No.	-1-	-2-		
Depth—Driller	2023	2132		
Depth—Logger	2021	2030		
Btm. Log Interval	2020	2029		
Top Log Interval	90	2020		
Casing—Driller	— @ —	— @ —	@	@
Casing—Logger	—	—		
Bit Size	5 1/8	5 1/8		
Type Fluid in Hole	FR NAT'L W/ SAME AS Run 2 GEL, SODA ASH, Q-BROXIN			
Dens. / Visc.	8.8 / 47			
pH / Fluid Loss	10 / — ml	ml	ml	ml
Source of Sample	CIRC	CIRC		
R_m @ Meas. Temp.	1.64 @ 84 °F	1.87 @ 87 °F	@ °F	@ °F
R_{mf} @ Meas. Temp.	1.07 @ 91 °F	1.21 @ 91 °F	@ °F	@ °F
R_{mc} @ Meas. Temp.	1.84 @ 84 °F	1.5 @ 114 °F	@ °F	@ °F
Source: R_{mf} / R_{mc}	M	M / C		
R_m @ BHT	1.31 @ 113 °F	1.45 @ 114 °F	@ °F	@ °F
Time Since Circ.	- HRS	2 HRS		
Max. Rec. Temp.	113 °F	114 °F	°F	°F
Equip. / Location	3871 / CLGA	3871 / CLGA		
Recorded By	LOGAR	LOGAR		
Witnessed By	MR. HOLLIS	MR HOLLIS		

SWS-1099-D

Hollis

SCHLUMBERGER INDUCTION-ELECTRICAL LOG

COMPANY	El Paso Natural Gas Co. - Mining Division
WELL	Christmas Tree #2
FIELD	Wildcat
COUNTY	Mojave
STATE	Arizona
LOCATION	
Sec.	32
Twp.	23N
Rge.	18W
Other Services:	FDC-GR

COUNTY ___ FIELD or LOCATION ___ WELL ___ COMPANY ___

Permanent Datum: G.L. ; Elev. ___
Log Measured From G.L. ___ Ft. Above Perm. Datum
Drilling Measured From G.L.
Elev.: K.B. ___ D.F. ___ G.L. 3380±

Date	7-12-68			
Run No.	-1-			
Depth—Driller	2023			
Depth—Logger	2021			
Btm. Log Interval	2020			
Top Log Interval	90			
Casing—Driller	— @ —	@	@	@
Casing—Logger	—			
Bit Size	5 1/8			
Type Fluid in Hole	Fresh wtr Gel, Soda Ash, Q. Broxin			
Dens. | Visc.	8.8 | 47			
pH | Fluid Loss	10 | — ml	ml	ml	ml
Source of Sample	Circ			
Rm @ Meas. Temp.	15.4 @ 84 °F	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	11.0 @ 97 °F	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	— @ — °F	@ °F	@ °F	@ °F
Source: Rmf | Rmc	M | —			
Rm @ BHT	11.1 @ 113 °F	@ °F	@ °F	@ °F
Time Since Circ.	2 hrs			
Max. Rec. Temp.	113 °F	°F	°F	°F
Equip. | Location	3871 | Cal.			
Recorded By	Logar			
Witnessed By	Mr. Hollis			

5WS-1099-D

FOLD HERE The well name, location and borehole reference data were furnished by the customer.

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 Hole

Equipment Data			
Run No.	Tool Type	Tool Position	Other
-1-	6FF40	FREE	

Run No.: -1-
C.D.: Not Used
S.O.: 0
Equip. PANEL No.: H-360
Used: CART. No.: F-82
SONDE No.: M-181
IAP No.: D-403
S.B.R.: 2

Check one, filling in blanks where applicable:
☑ Surface determined sonde errors used for 6FF40.
☐ 6FF40 sonde error corrected for ___ inch borehole signal at Rm = ___
☐ 6FF40 zero set in hole at depth of ___ feet.

SPONTANEOUS POTENTIAL millivolts	DEPTHS	RESISTIVITY ohms - m²/m	CONDUCTIVITY millimhos/m = 1000 / ohms-m²/m
10 (- +)		A - 16" - M SHORT NORMAL 0 — 100; 0 — 1000	6FF40 INDUCTION 500 — 0
		INDUCTION 0 — 100; 0 — 1000	

183' of sd + boulders in #90'