SCHLUMBERGER

# INDUCTION-ELECTRICAL LOG

SCHLUMBERGER WELL SURVEYING CORPORATION
Houston, Texas

COUNTY MESA, COLORADO
LOCATION 1043' FNL - 1600' FEL NW NE
WELL EAST BUZZARD CREEK # 31-2
COMPANY PACIFIC NAT. GAS

COMPANY PACIFIC NATURAL GAS EXPLORATION
WELL EAST BUZZARD CREEK # 31-2
FIELD WILDCAT
COUNTY MESA STATE COLORADO
LOCATION 1043' FNL - 1600' FEL NW NE
Sec. 2 Twp. 9S Rge. 92W

Other Services: SL-C, GR-N

Elev.: K.B. 7729
D.F. -
G.L. 7717

Permanent Datum: G.L. Elev. 7717
Log Measured From K.B. 12 Ft. Above Perm. Datum
Drilling Measured From K.B.

| | | | |
|---|---|---|---|
| Date | 8-13-63 | | |
| Run No. | ONE | TWO | |
| Depth—Driller | 5700 | 8450 | |
| Depth—Logger | 5701 | 8446 | |
| Btm. Log Interval | 5700 | 8445 | |
| Top Log Interval | 266 | 5700 | |
| Casing—Driller | 10 3/4 @ 265 | 7 5/8 @ 5700 | @ |
| Casing—Logger | 266 | 5700 | |
| Bit Size | 9 7/8" | 6 3/4" | |
| Type Fluid in Hole | GEL-CHEMICAL | CONTROL-X MUD | |
| Dens. / Visc. | 9.5 / 65 | 9.3 / 120 | |
| pH / Fluid Loss | 8.5 / 8.2 ml | 9.0 / 5.6 ml | ml |
| Source of Sample | PITS | CIRC. | |
| $R_m$ @ Meas. Temp. | 5.0 @ 70°F | 2.5 @ 75°F | @ °F |
| $R_{mf}$ @ Meas. Temp. | 4.8 @ 70°F | 1.9 @ 75°F | @ °F |
| $R_{mc}$ @ Meas. Temp. | 2.4 @ 124°F | 2.2 @ 75°F | @ °F |
| Source: $R_{mf}$ / $R_{mc}$ | FP / C | PRESS / PRESS | |
| $R_m$ @ BHT | 2.8 @ 124°F | 1.0 @ 200°F | @ °F |
| Time Since Circ. | 3 HOURS | 4 HOURS | |
| Max. Rec. Temp. | 124 °F | 200 °F | °F |
| Equip. / Location | 2598 / GJ | 2598 / GJ | / |
| Recorded By | MONTGOMERY | WARNER | |
| Witnessed By | CLUTTER | CLUTTER | |

OIL & GAS CONSERVATION COMMISSION
OCT 28 1964
DENVER, COLORADO

FOLD HERE

REMARKS RUN # 2 S.P. TRACED FROM DOWN RUN 8212' TO T.D.

**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 | RUN # 1 | RUN # 2 | |
| $R_m$ @ 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 | 1.0 @ 200°F | |
| $R_{mf}$ @ BHT | 2.7 @ 124°F | 0.7 @ 200°F | |
| $R_{mc}$ @ BHT | @ °F | 0.8 @ 200°F | |

**Scale Changes**

| Type Log | Depth | Scale Up Hole | Scale Down Hole |
|---|---|---|---|
| RUN # 1 | | NONE | |
| RUN # 2 | | NONE | |

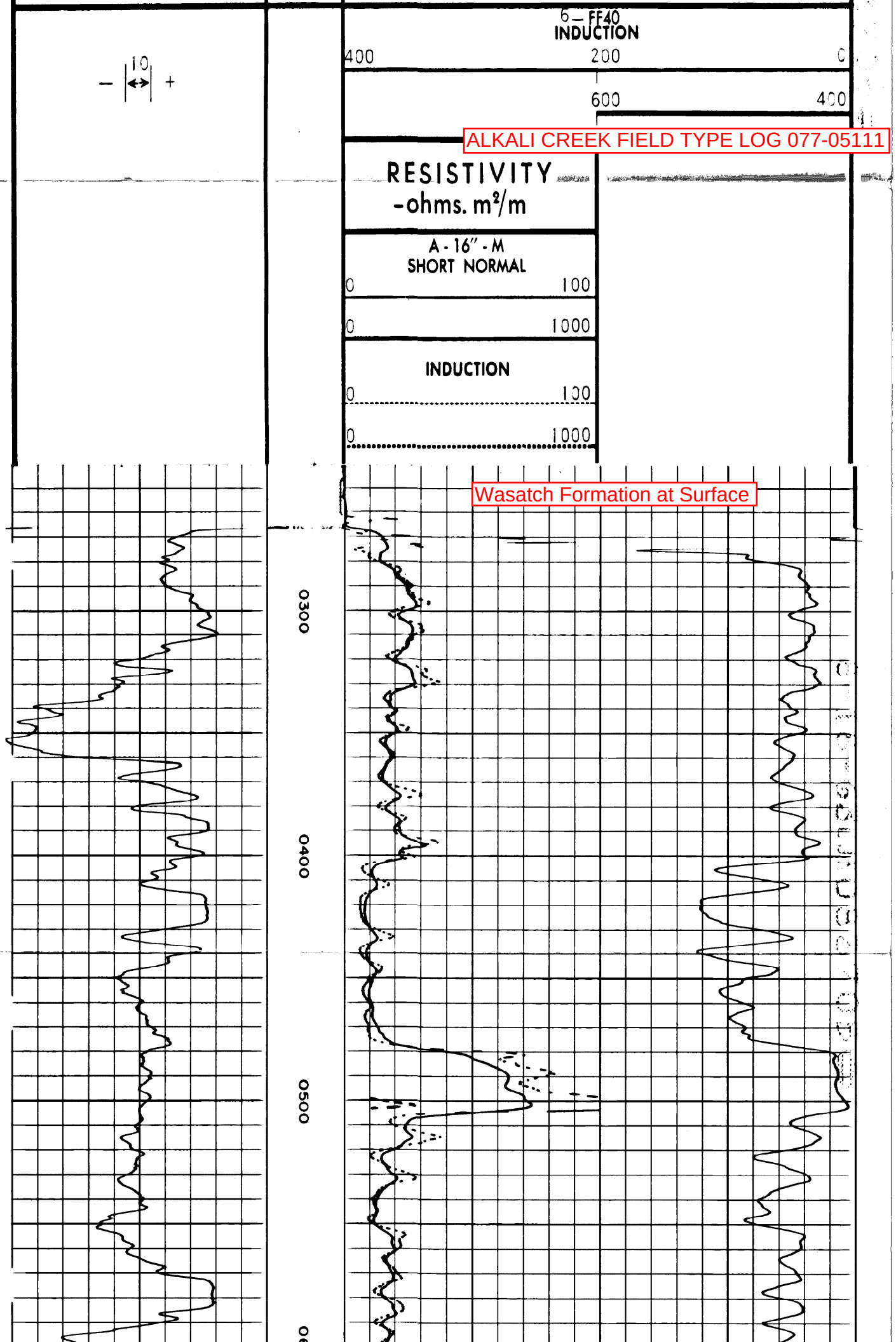
**Equipment Data**

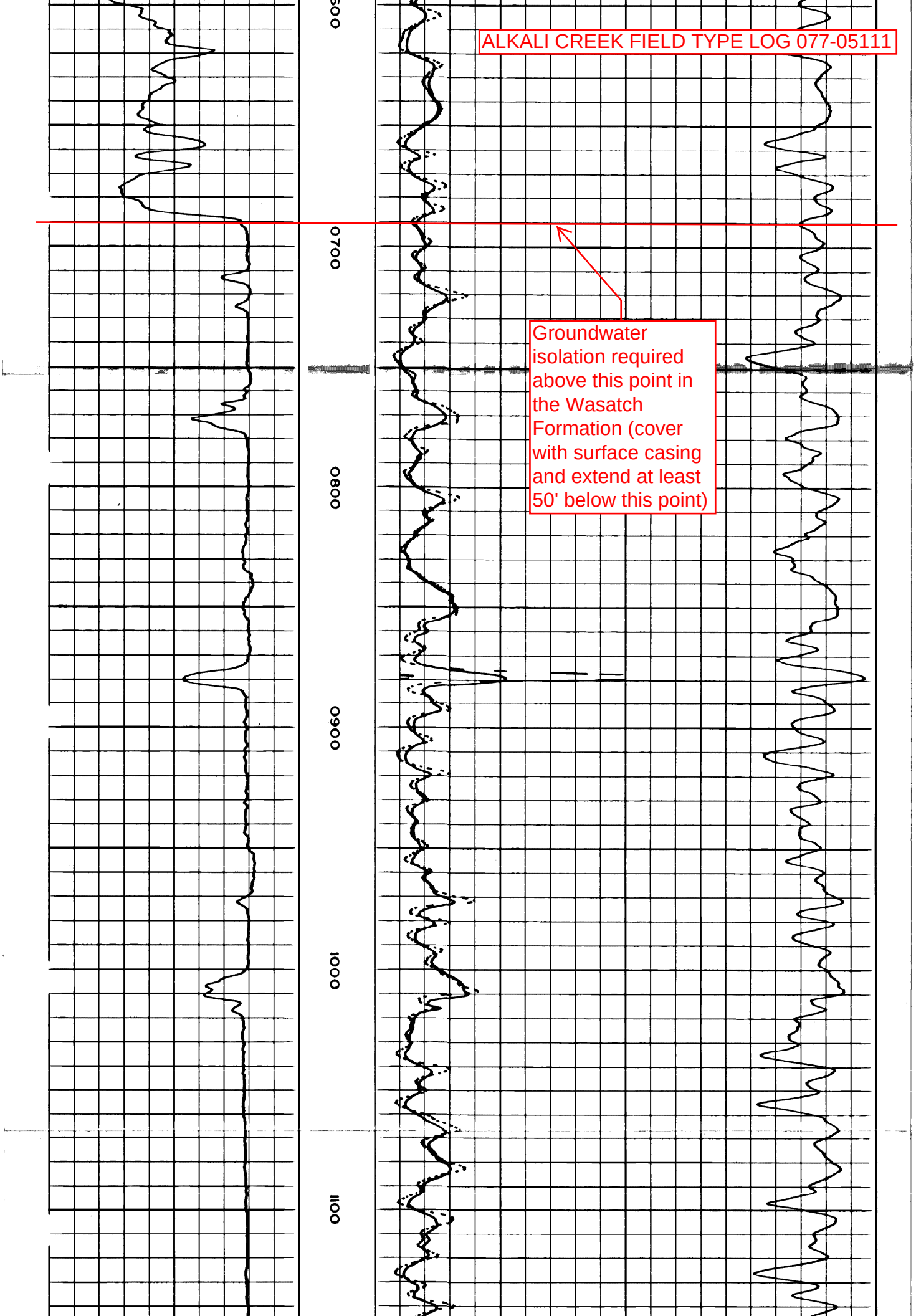
| Run No. | Tool Type | Tool Position | Other |
|---|---|---|---|
| ONE | 6FF40 | CENTERED | |
| TWO | 6FF40 | CENTERED | |

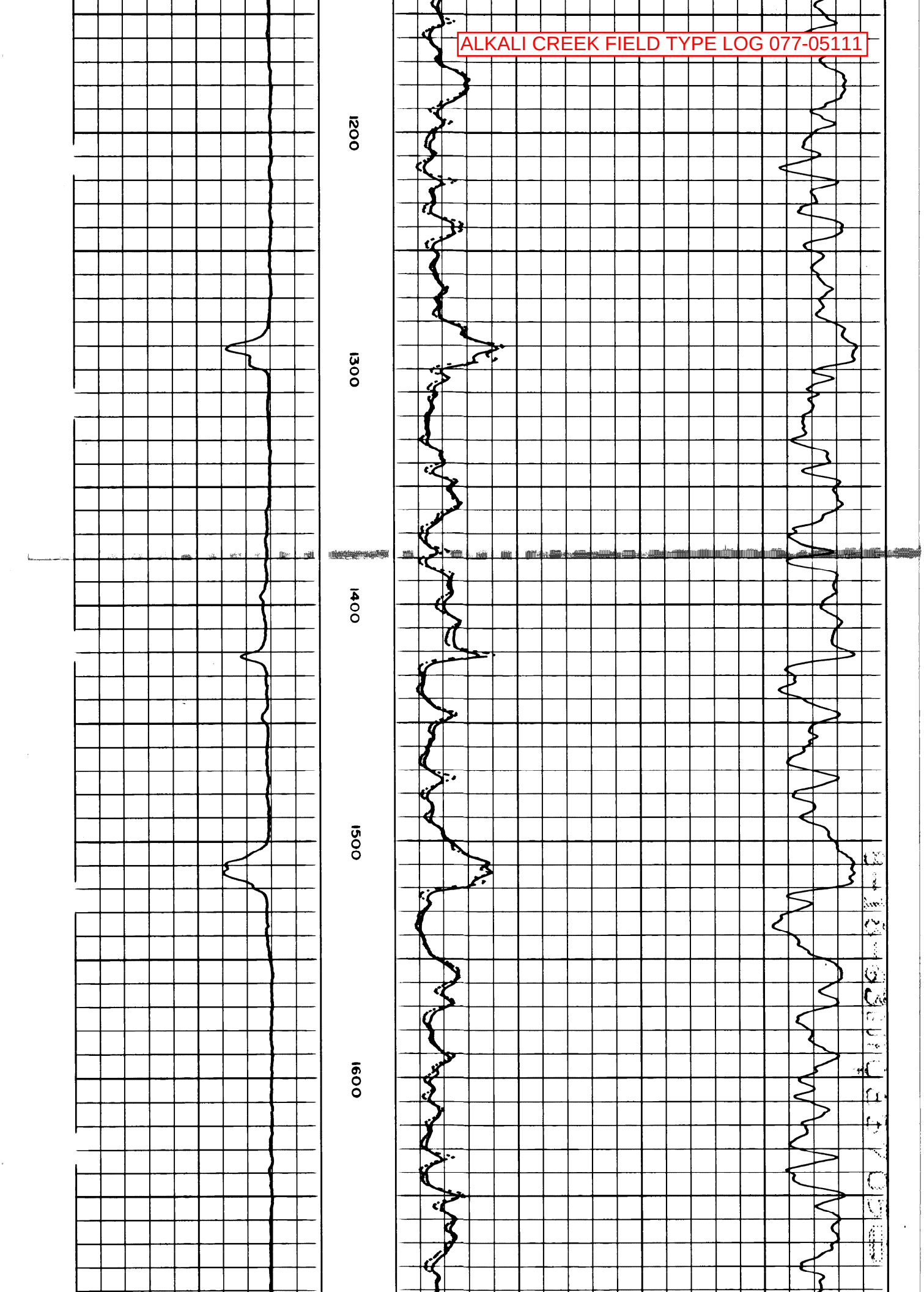
C.D.: USED S.O.: = 1 1/2" RUN # 1 & 2 RUN # 2 WHIPSTOCK @ 6020

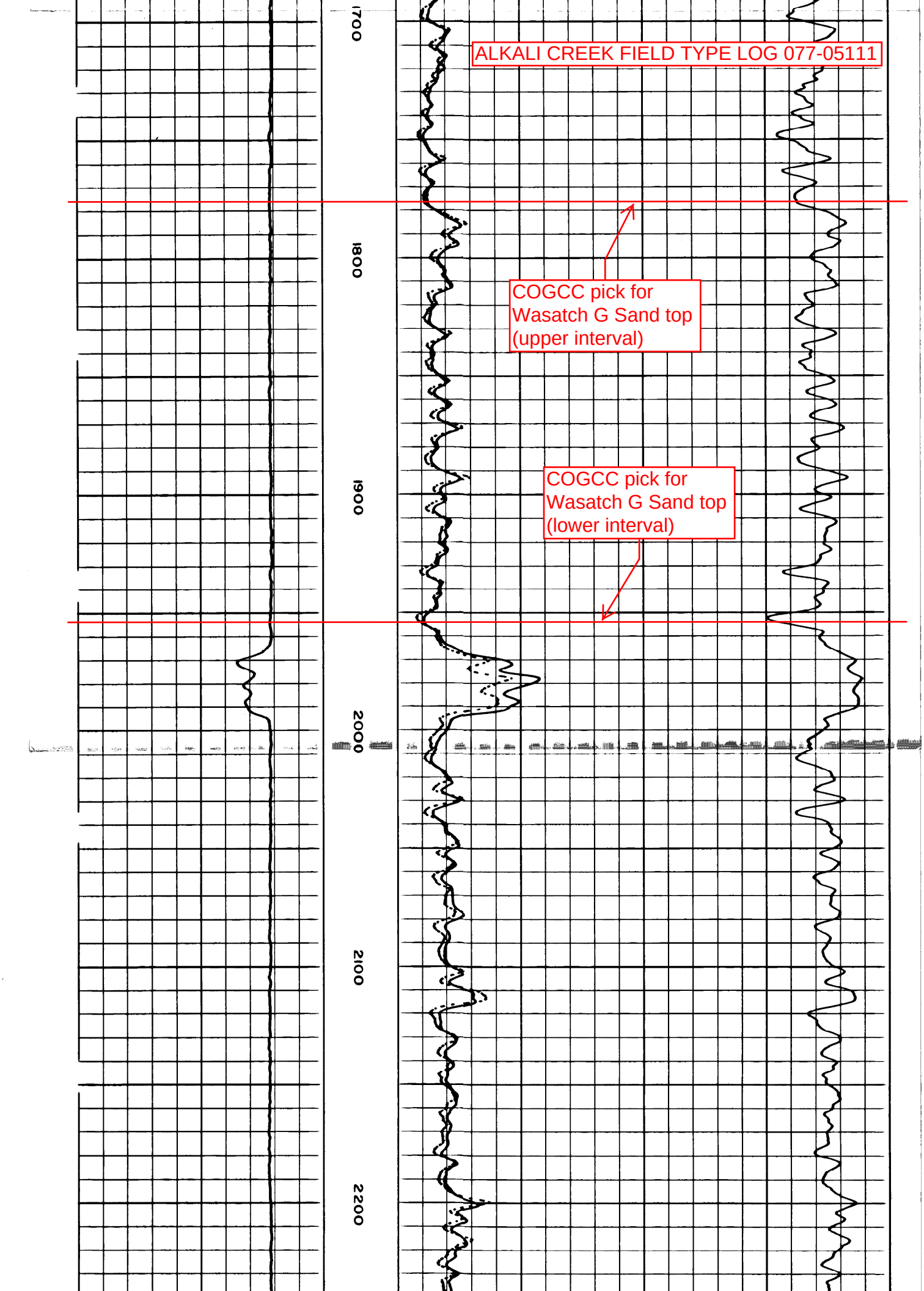
Equip. Used: CART. No. RUN # 1&2 534 D
PANEL No. 124 E
SONDE No. 216 K
SBR 4

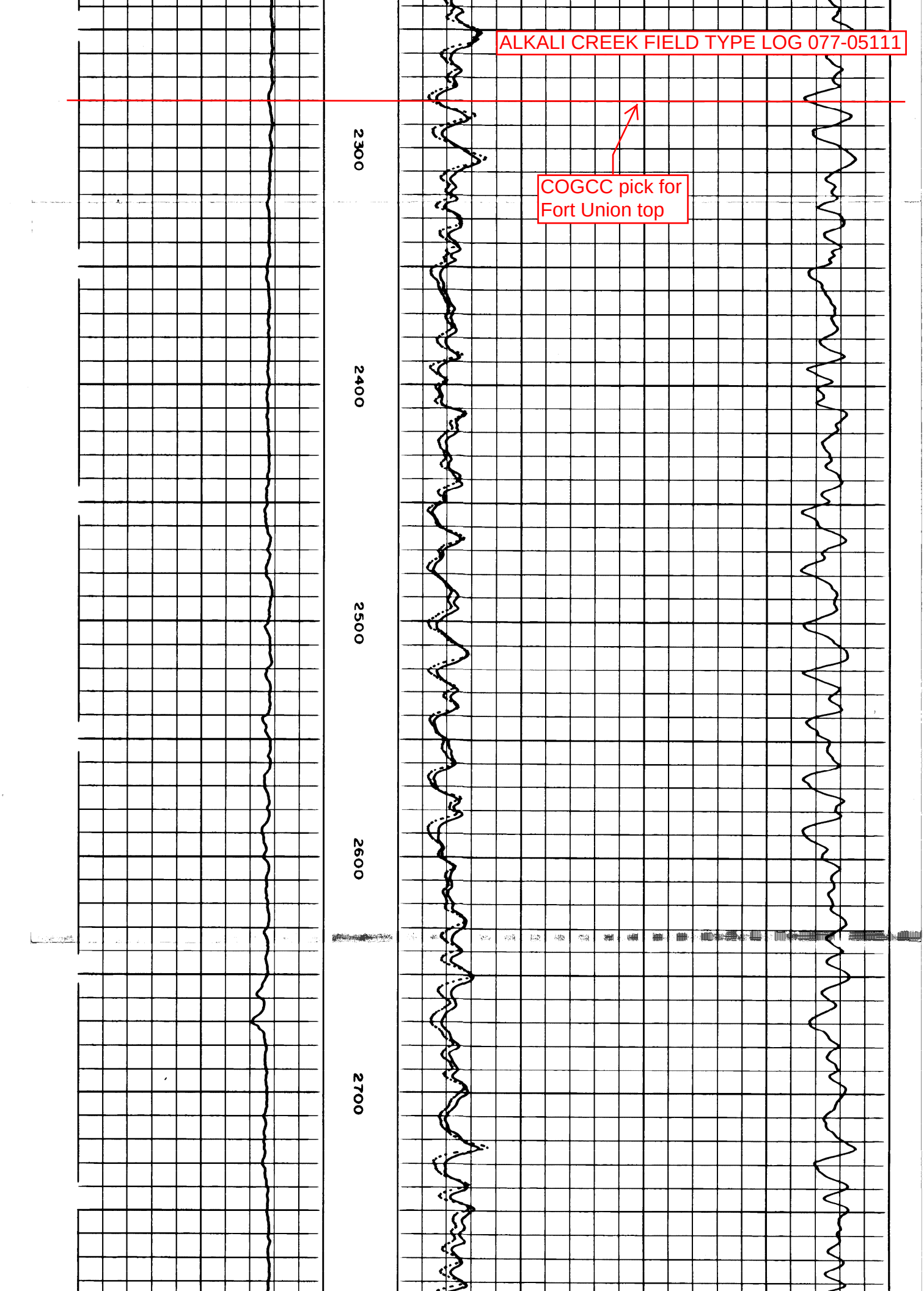
| SPONTANEOUS-POTENTIAL millivolts | DEPTHS | CONDUCTIVITY millimhos/m = 1000 / ohms. m²/m |
|---|---|---|

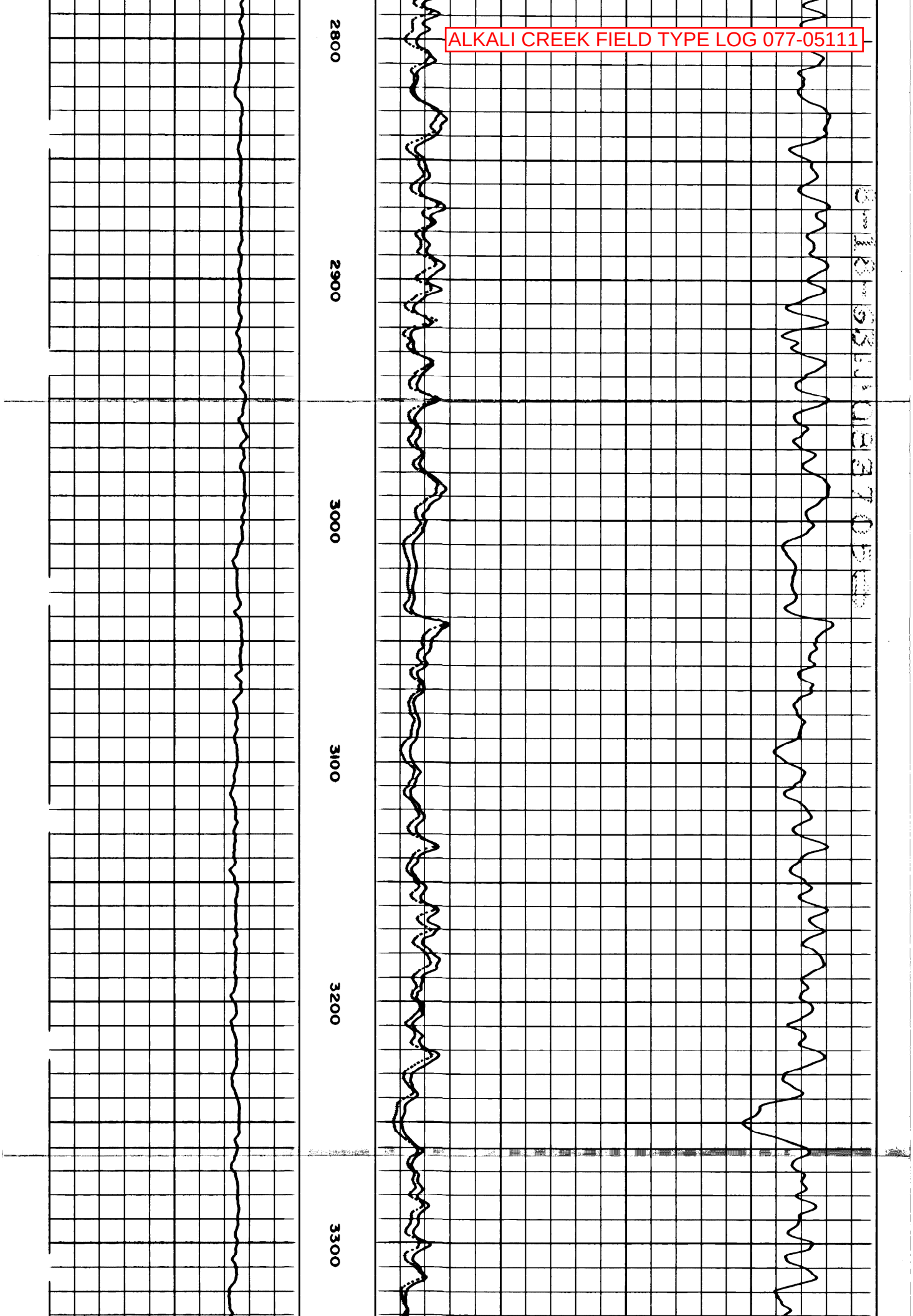

6 — FF40
INDUCTION
400
200
0
600
400
ALKALI CREEK FIELD TYPE LOG 077-05111
10
RESISTIVITY
-ohms. m²/m
A - 16" - M
SHORT NORMAL
0
100
0
1000
INDUCTION
0
100
0
1000
Wasatch Formation at Surface
0300
0400
0500

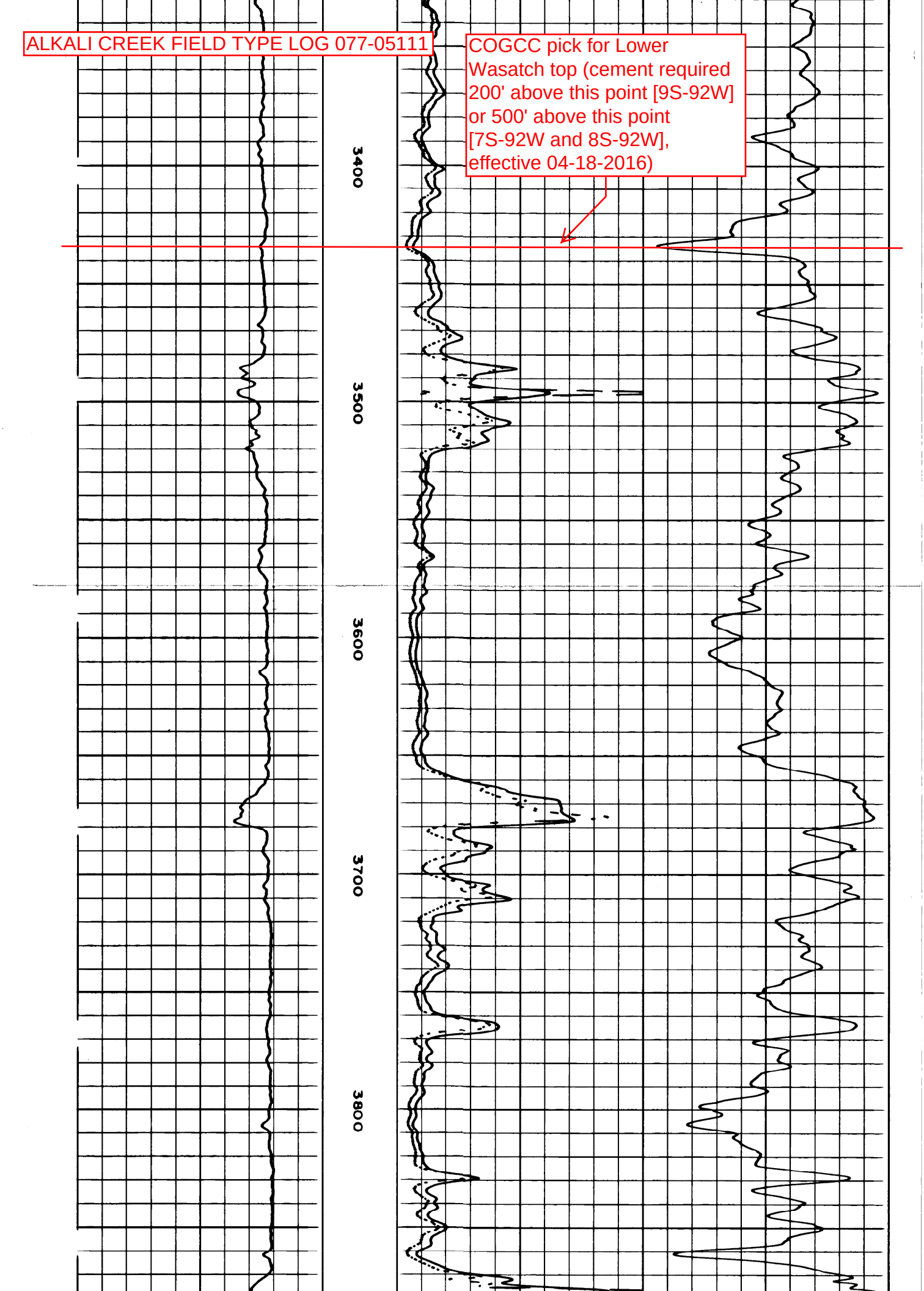

ALKALI CREEK FIELD TYPE LOG 077-05111
Groundwater isolation required above this point in the Wasatch Formation (cover with surface casing and extend at least 50' below this point)
0700
0800
0900
1000
1100

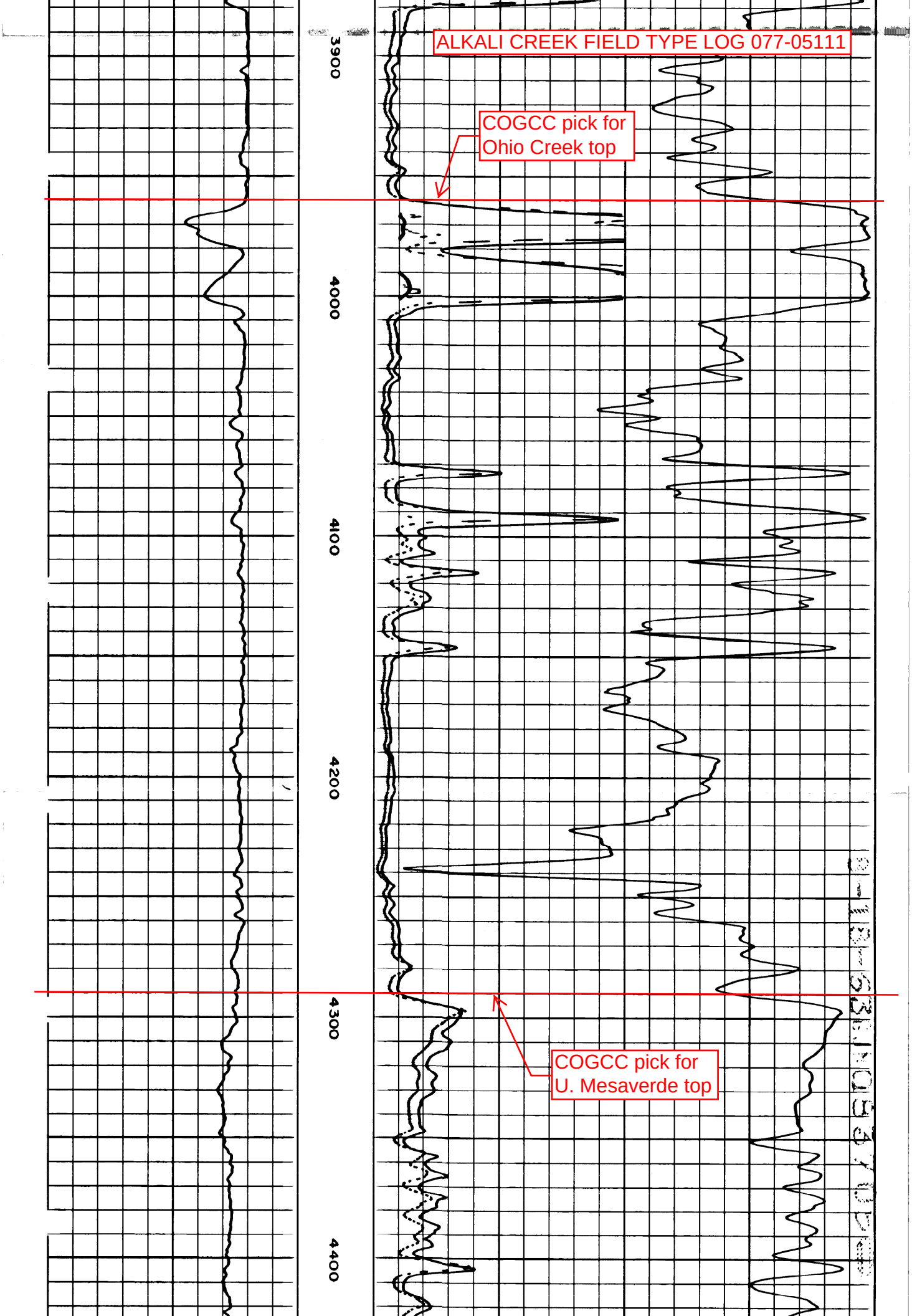

ALKALI CREEK FIELD TYPE LOG 077-05111
1200
1300
1400
1500
1600

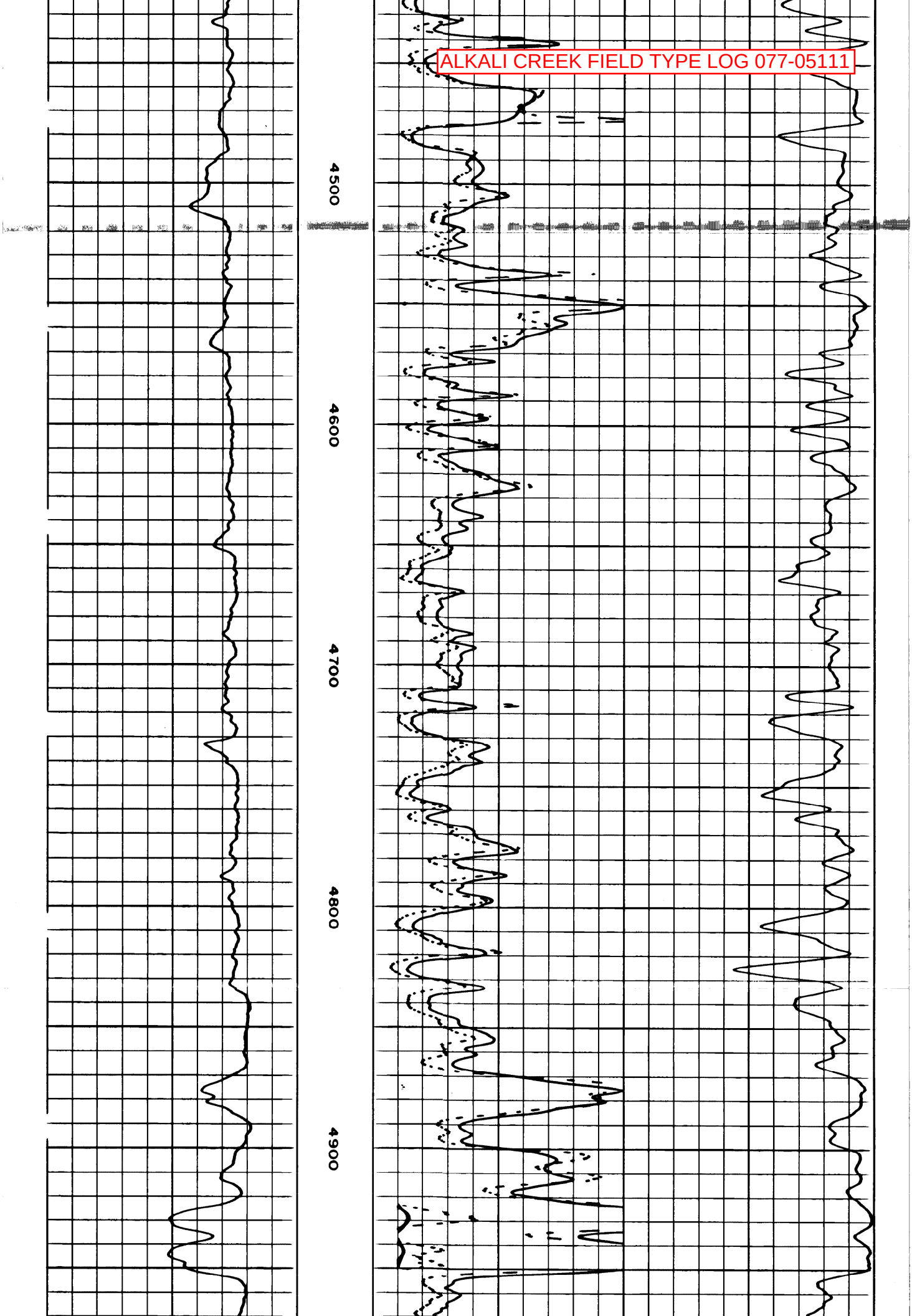

ALKALI CREEK FIELD TYPE LOG 077-05111
COGCC pick for Wasatch G Sand top (upper interval)
COGCC pick for Wasatch G Sand top (lower interval)
1700
1800
1900
2000
2100
2200

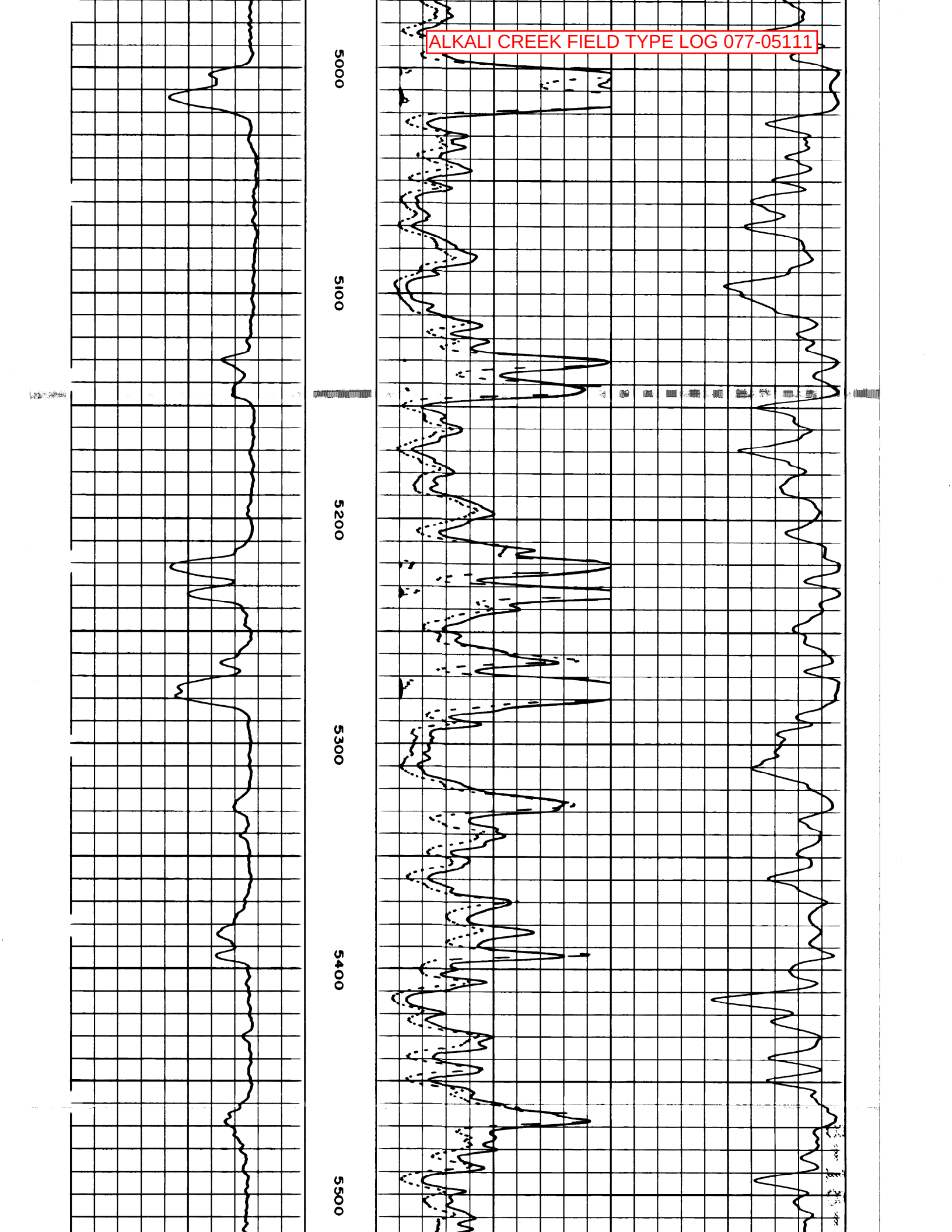

ALKALI CREEK FIELD TYPE LOG 077-05111
COGCC pick for
Fort Union top
2300
2400
2500
2600
2700

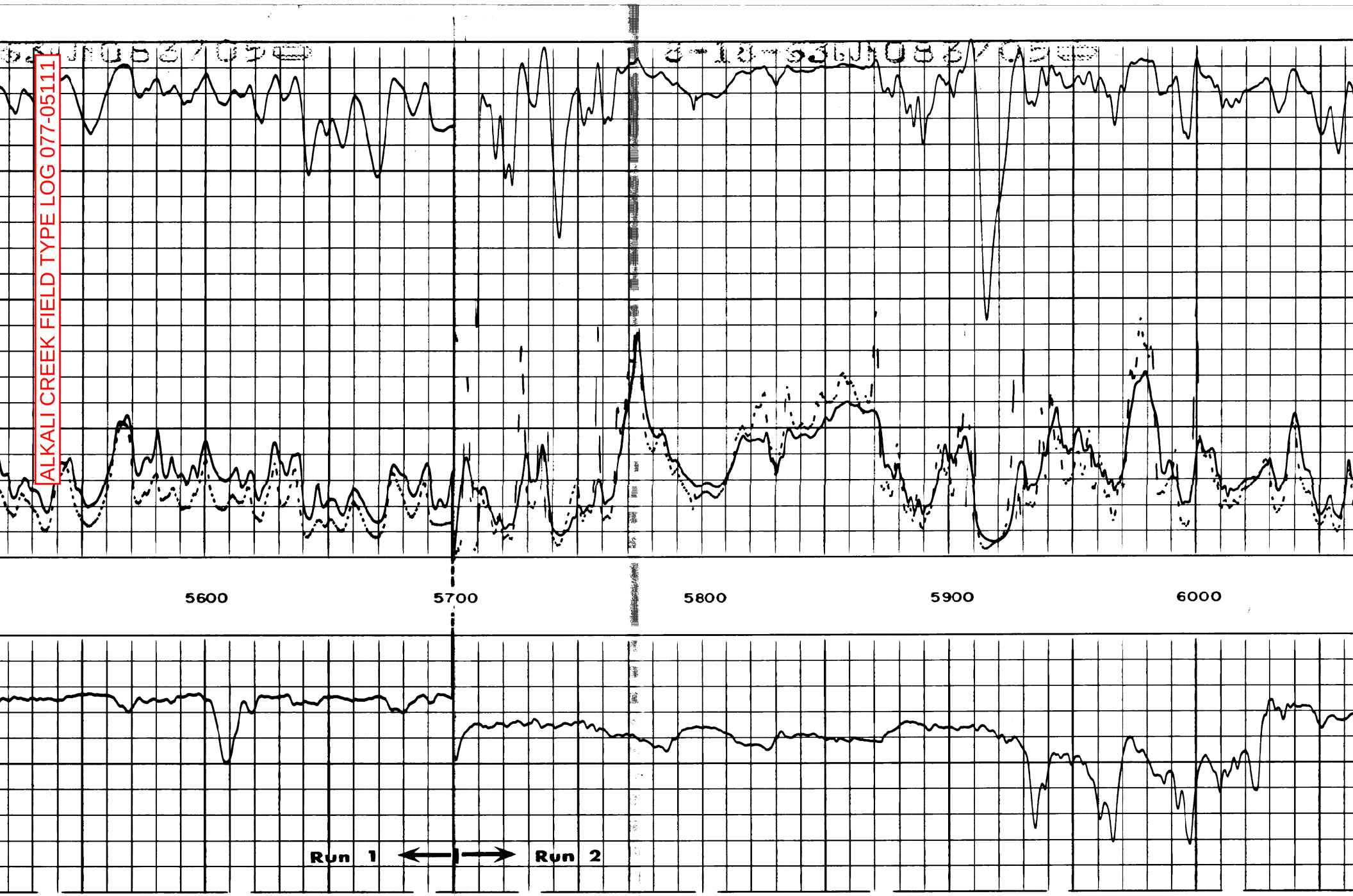

ALKALI CREEK FIELD TYPE LOG 077-05111
2800
2900
3000
3100
3200
3300

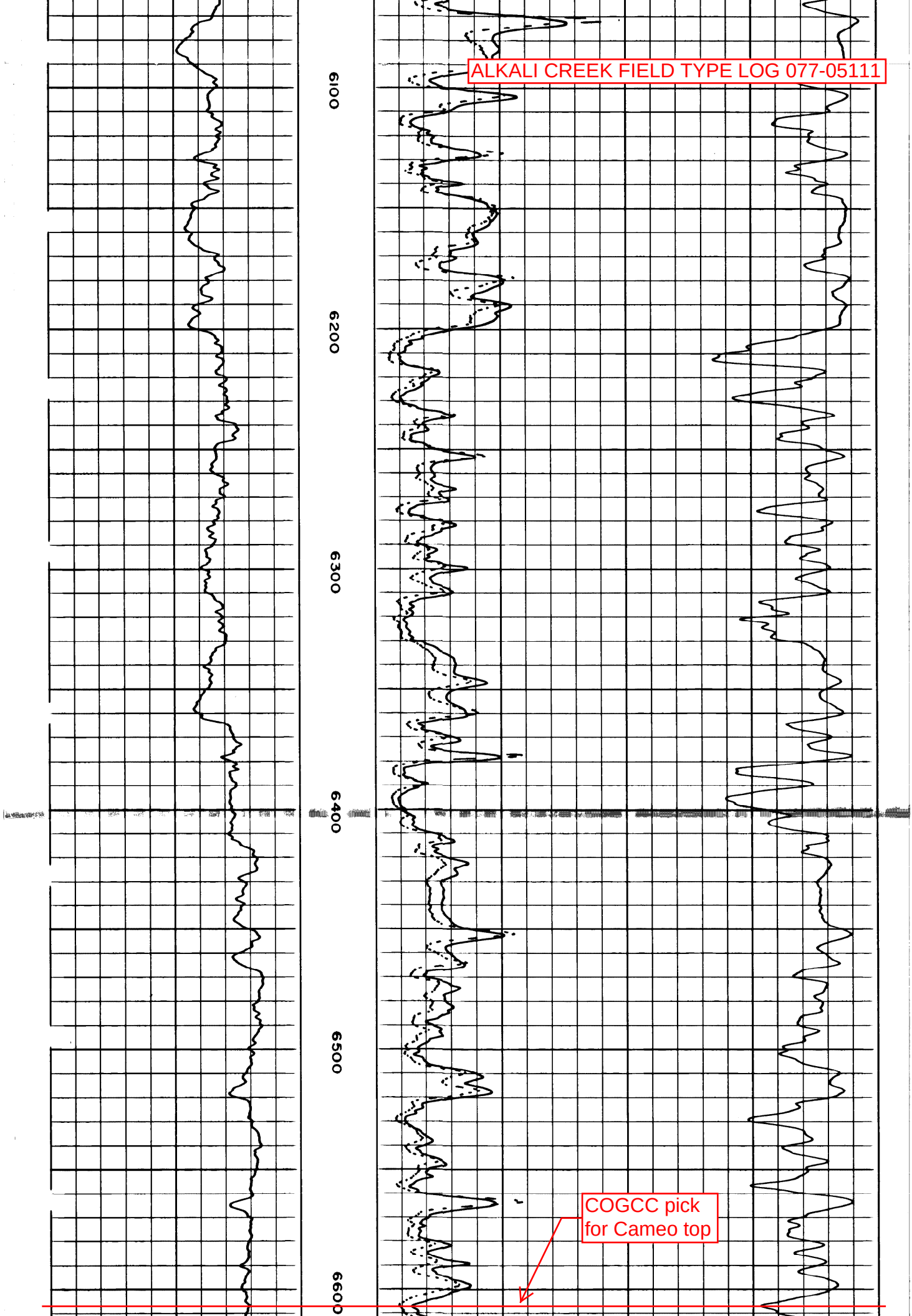

ALKALI CREEK FIELD TYPE LOG 077-05111
COGCC pick for Lower Wasatch top (cement required 200' above this point [9S-92W] or 500' above this point [7S-92W and 8S-92W], effective 04-18-2016)
3400
3500
3600
3700
3800

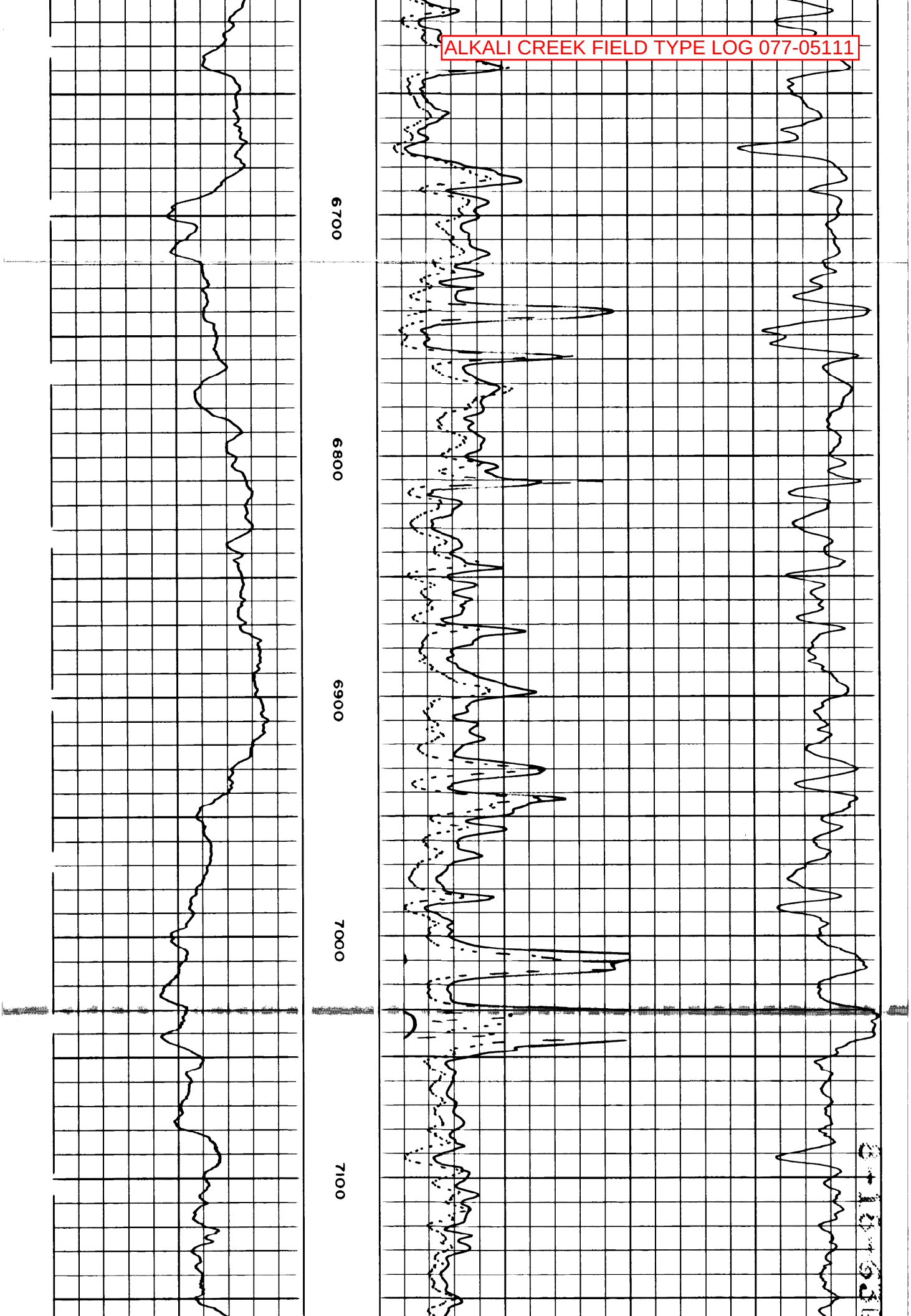

ALKALI CREEK FIELD TYPE LOG 077-05111
COGCC pick for
Ohio Creek top
COGCC pick for
U. Mesaverde top
3900
4000
4100
4200
4300
4400

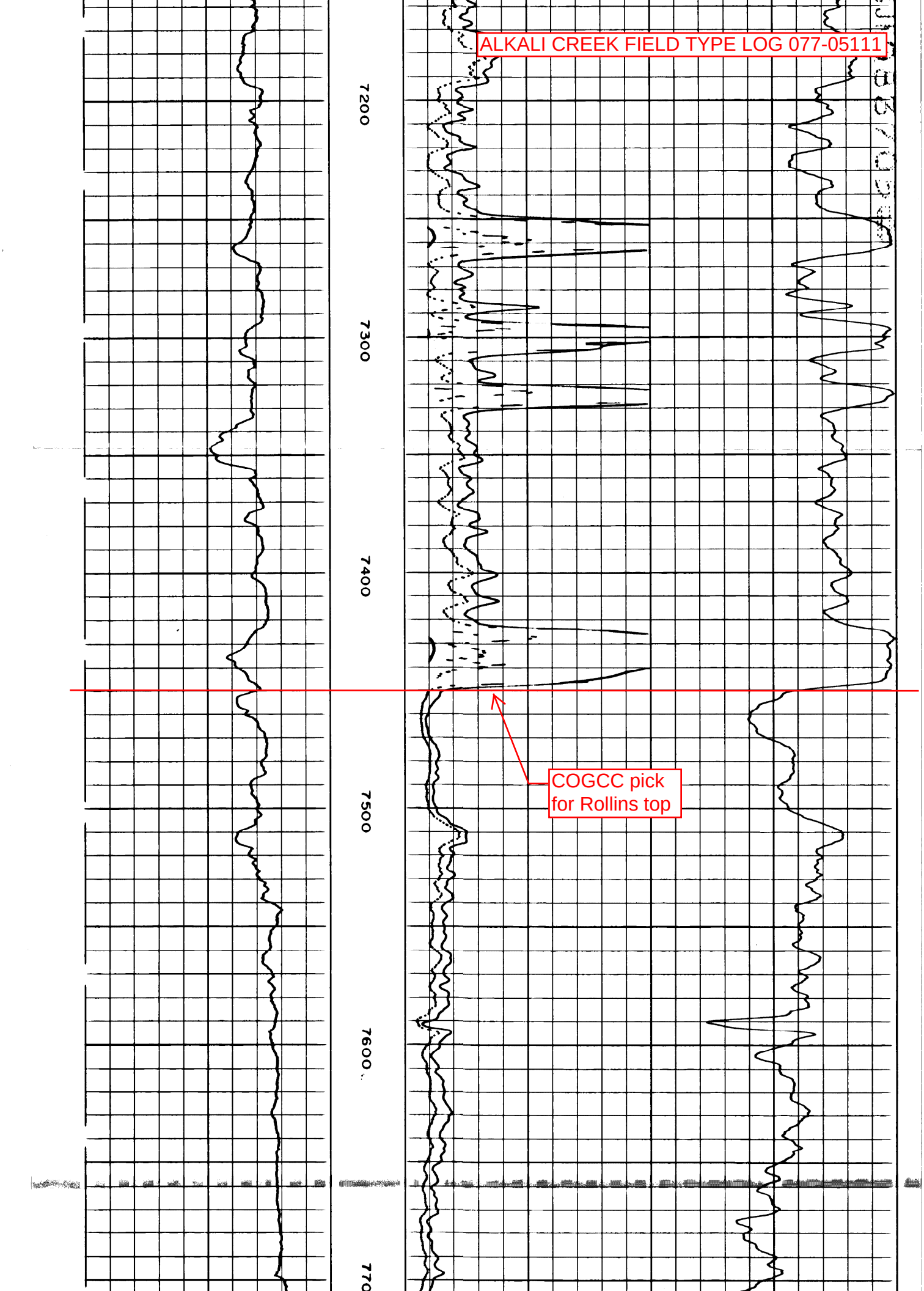

ALKALI CREEK FIELD TYPE LOG 077-05111
4500
4600
4700
4800
4900

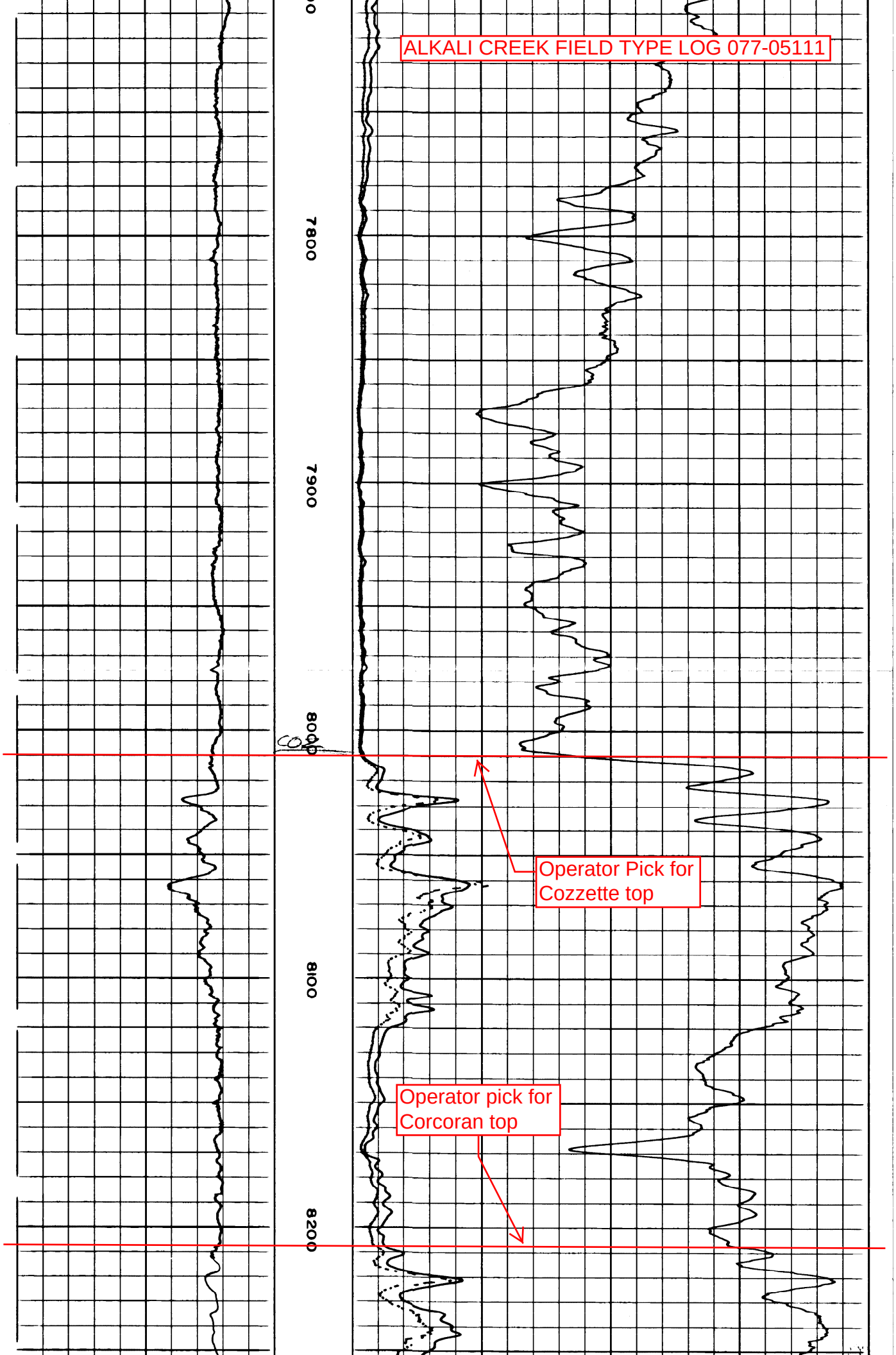

ALKALI CREEK FIELD TYPE LOG 077-05111
5000
5100
5200
5300
5400
5500

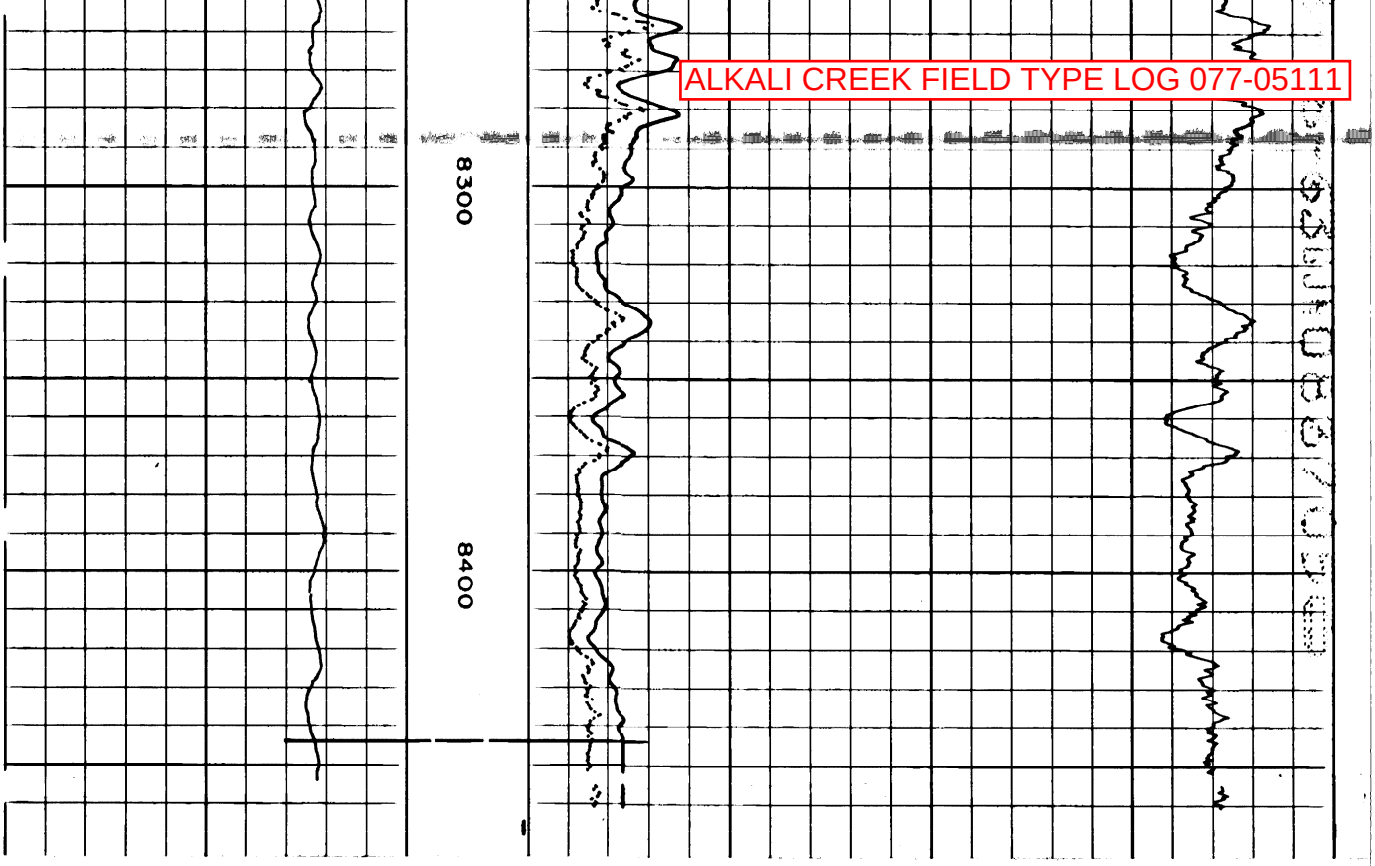

ALKALI CREEK FIELD TYPE LOG 077-05111
5600
5700
5800
5900
6000
Run 1
Run 2


ALKALI CREEK FIELD TYPE LOG 077-05111
6100
6200
6300
6400
6500
6600
COGCC pick
for Cameo top


ALKALI CREEK FIELD TYPE LOG 077-05111
6700
6800
6900
7000
7100


ALKALI CREEK FIELD TYPE LOG 077-05111
7200
7300
7400
7500
7600
COGCC pick
for Rollins top


ALKALI CREEK FIELD TYPE LOG 077-05111
7800
7900
8000
8100
8200
Operator Pick for Cozzette top
Operator pick for Corcoran top




A - 16" - M
SHORT NORMAL
0 100
0 1000

INDUCTION
0 100
0 1000

RESISTIVITY
ohms – $m^2/m$

6 FF40
INDUCTION
400 200 0
600 400

– 10 +

SPONTANEOUS-POTENTIAL
millivolts

DEPTHS

CONDUCTIVITY
millimhos/m = $\frac{1000}{\text{ohms} - m^2/m}$

COMPANY PACIFIC NATURAL GAS EXPLORATION CO.

WELL EAST BUZZARD CREEK # 31-2

FIELD WILDCAT

COUNTY MESA STATE COLORADO

SWSC FR 8445
SWSC TD 8446
DRLR TD 8450
Elev:
KB 7729
DF -
GL 7717

0011-2EW8