

BACA PROJECT
DATA AND REPORTS

WELLS

<u>No.</u>	<u>Transfer Date</u>	<u>Release Date</u>	<u>Title</u>
1.	A	A	Summary sheet for Baca Wells No's 1-3.
2.	A	A	Baca Wells No's 4-16 summary sheet.
3.	A	A	Well summary reports and Drilling Histories-- Baca Wells No's 4-16.
4.	B	B	Lithology logs--Baca Wells No's 4-16.
5.	A	A	Temperature and Pressure Surveys--Baca Wells No's 4-8 and 10-16.
	B	B	Electric logs for Baca Wells No's 10-14.

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15 542 P11

OWNER: UNION OIL COMPANY FIELD: UALLE GRANDE WELL NAME: BREA # 15
 CASING: 20" AT 210' 13 3/8" AT 1273' ELEV. 9177 DATE: 6/22/76
 LINER DESCRIPTION: 9 5/8" 2509 ZERO POINT: GL + 6'
 OPEN HOLE 2509 - TD DEPTH: 5498

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT 0-2950 PSI SN 7235 CL-12 hr 15 T
 ELEMENT 30-646' SERIAL NO. 10052 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P 0953 T 0950 DISENGAGE STYLUS P 1230 T 1230
 WELL HEAD 581 PSIG
 PICKUP @ 5497 TIME ON BOTTOM 1153-1208 MAX. T 580
 WELL STATUS
 SHUT IN: ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0	100	.383	546		-012	1048	100	076	104								
10	1000	.400	621		0	1100	1000	390	351								
11	2000	.410	635		+001	1112	2000	1.372	486								
1124	3000	.434	672		+001	1124	3000	1.400	494								
1136	4000	.470	725		+001	1136	4000	1.431	502								
1150	5000	.537	825		+001	1150	5000	1.485	516								
1208	5497	.610	943		+001	1208	5497	1.539	530								

COMMENTS:

76



GEOHERMAL DIVISION

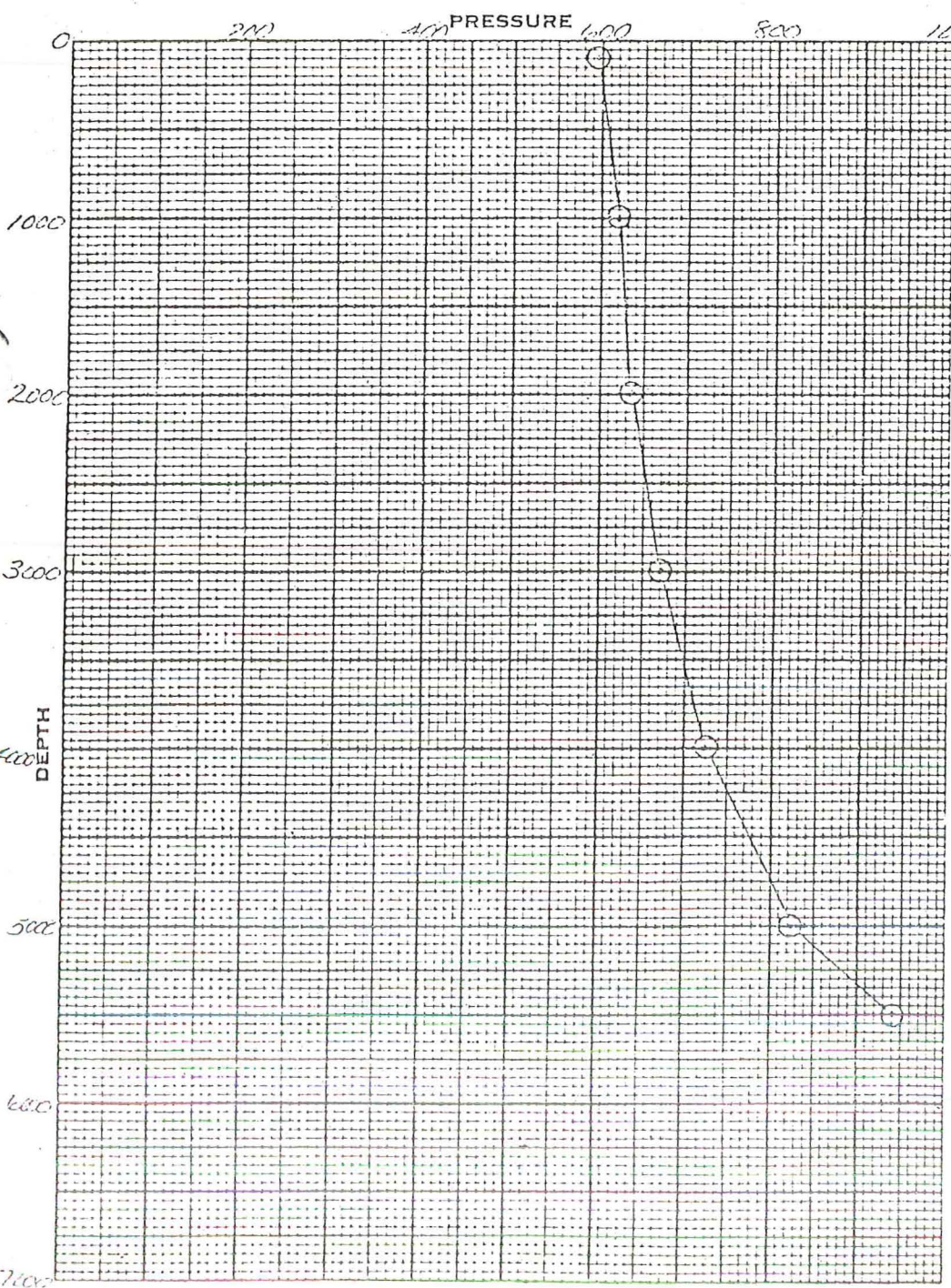
SUBSURFACE PRESSURE SURVEY

B15-S42-PT

OWNER _____ FIZLO 14110 Grande WELL NAME BACA #15
 CASING _____ ELEV 9177' DATE 6/22/76
 LINER DESCRIPTION: _____ ZERO POINT GL +1.1'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIG
 _____ SERIAL NO 9235

PURPOSE _____ MAX TEMP 530 °F @ 5497'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURE	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	596	
1000	621	
2000	635	
3000	672	
4000	725	
5000	825	
5497	943	

BY: _____

GEOHERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

B15-S42-PT

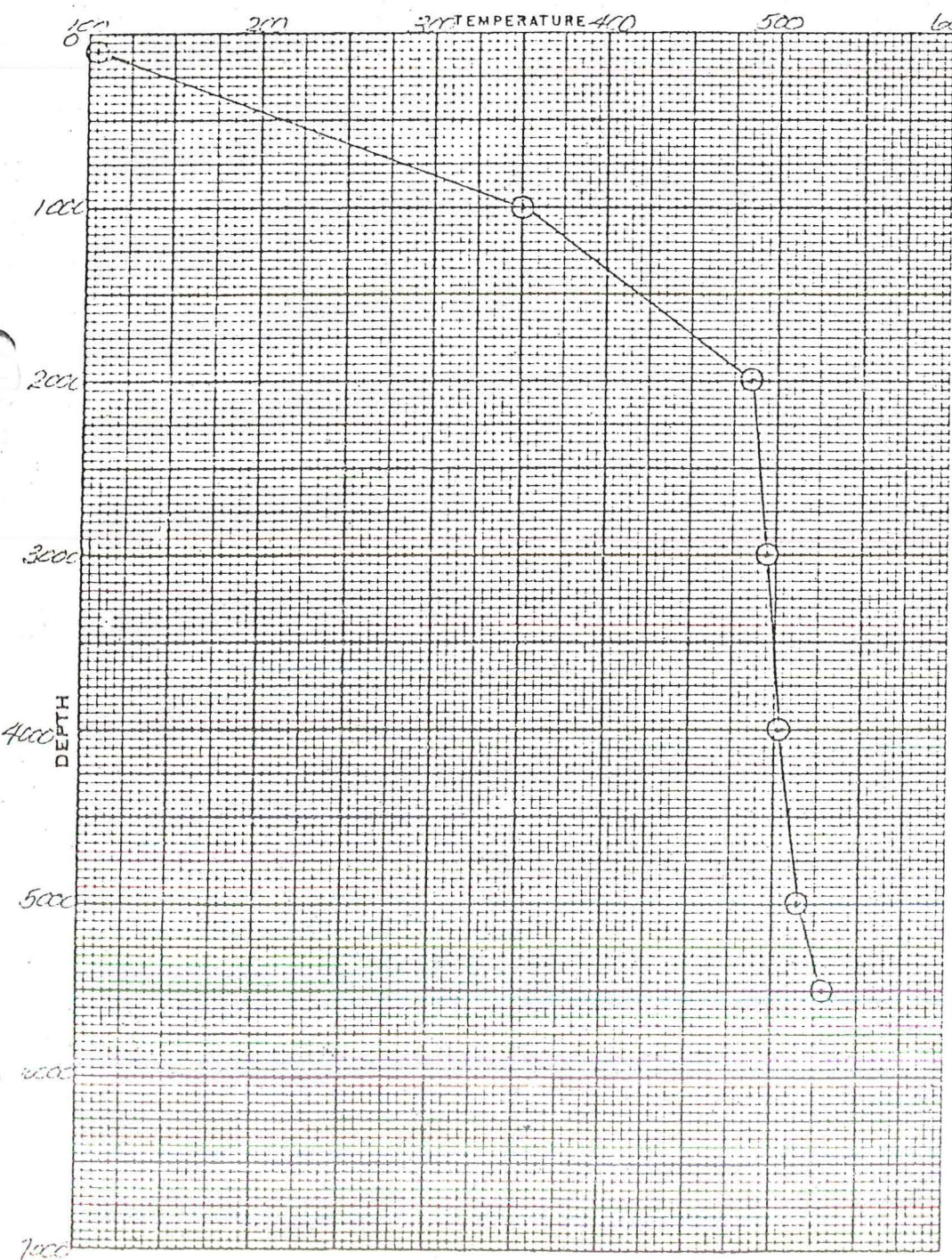
76

OWNER _____ FIELD Valle Grande WELL NAME BPCA #15
 CASING _____ ELEV 9177' DATE 6/22/76
 LINEA DESCRIPTION: _____ ZERO POINT GL +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____
 _____ INSTRUMENT _____ FAHP
 _____ SERIAL NO 10052

PURPOSE _____ MAX TEMP 530 °F @ 5497'
 REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	104		
1000	351		
2000	486		
3000	497		
4000	502		
5000	516		
5497	530		

BY: _____

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BRA15-548-P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE

WELL NAME BRA#15

CASING 20" @ 210' 13 3/8" @ 1273' ELEV. 9177

DATE: 9-3-76

LINER DESCRIPTION: 9 5/8" @ 2509'
OPEN HOLE 2509 - T.O.

ZERO POINT GLT 7'
DEPTH 5496'

TUBING DETAIL:

PURPOSE

REMARKS:

P-O-4700 PSIC 13013 12 HR 15

ELEMENT 509F-6469 SERIAL NO. 10052 CLOCK 12/12 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1245 T-1245 DISENGAGE STYLUS P-1550 T-1550

WELL HEAD 570

PICKUP @ 5496' TIME ON BOTTOM 1457-1507 MAX. F 533

WELL STATUS SHUT IN.

SHUT IN:

ON PRODUCTION:

RATE

PSIG.

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	CORR.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
5	160	0237	581		-	1353	160	058	98								
6	200	0237	531		-0.01	1407	160	083	332								
119	2000	0246	602		-	1419	2000	1376	488								
131	3000	0260	635		-	1431	3000	1460	494								
143	4000	0287	699		-	1443	4000	1435	503								
155	5000	0330	801		-	1455	5000	1495	519								
1507	5496	0382	924		-	1507	5496	1550	533								

COMMENTS:

1

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#15-519-711

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME B#15-519-711
 CASING 20" @ 210'; 13-3/8" @ 1273'; ELEV. 9177 DATE: 9-28-76
 LINER DESCRIPTION: 9-5/8" @ 2509' ZERO POINT 6.413'
OPEN HOLE 2509' - T.D. DEPTH 5472'
 TUBING DETAIL: 2" TUBING FROM SURFACE TO 5472'

PURPOSE

REMARKS:

P-O-4650 F316 9222 12/17 15
 ELEMENT T-1009-7922 SERIAL NO. 10098 CLOCK 12/17 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1211, T-1213 DISENGAGE STYLUS P-1433, T-1434
 WELL HEAD 540
 PICKUP @ 5472' TIME ON BOTTOM 1342-1352 MAX. °F 544
 WELL STATUS SHUT IN.
 SHUT IN: _____ ON PRODUCTION: _____
 RATE _____

PRESSURE

TEMPERATURE ^{P_{sat}, P_{sig}}

TIME	DEPTH	PRESSURE			CORR.	TIME	TEMPERATURE					TIME	DEPTH	DEFL.	P-T	GRAD.	TD
		DEFL.	P-V	GRAD.			DEPTH	DEFL.	P-T	GRAD.	TD						
1252	20	1.220	545		-0.010	1252	100	0.053	122								
	100	1.233	575		-0.002	1302	1110	1.153	342			1107					
	210	1.242	597		0	1311	2110	1.065	487			594.0					
	310	1.215	651		0	1321	3110	1.101	499			658.2					
	410	1.300	737		0	1331	4100	1.145	513			754.0					
	510	1.351	854		0	1340	5100	1.197	530			874.7					
	5472	1.408	983		0	1352	5472	1.238	544			984.7					

COMMENTS:

RV: _____

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-550-71T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BACH 15
 CASING 20" @ 210', 13 3/8" @ 273' ELEV. 9177 DATE: 10/5/76
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT 61+18'
OPEN HOLE 2509' - T.O. DEPTH 5472'
 TUBING DETAIL: 2" TUBING FROM SURFACE TO 5472'
 PURPOSE _____
 REMARKS: _____
P-O-46.50 PSIG 9222 12HR 15
 ELEMENT T-1009-7924 SERIAL NO. 10098 CLOCK 12HR 15 TURN _____ STABILIZATION PERIOD _____
 ENGAGE STYLUS P-1425 T-1500 DISENGAGE STYLUS P-1425 T-1800
 WELL HEAD 510
 PICKUP @ 5472' TIME ON BOTTOM 1717-1737 MAX. °F 545
 WELL STATUS SHT 1W.
 SHUT IN: _____ ON PRODUCTION: _____
 RATE _____

PSIG					TEMP Psat 9-28											
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1457	100	.221	547	-	1457	100	.2067	128	95.9	122						
1513	200	.229	571	-	1513	200	.637	334	98.3	342						
1539	300	.242	597	-	1539	300	1.060	485	532.5	487						
1545	3000	.262	644	-	1545	3000	1.103	499	664.3	493						
1601	4600	.360	734	-	1601	4600	1.146	513	754.0	513						
1617	5100	.357	868	-	1617	5100	1.198	530	872.7	530						
1632	5100	.372	903	-	1632	5100	1.209	534	905.2							
1647	5200	.383	929	-	1647	5200	1.218	537	923.5							
1702	5300	.385	955	-	1702	5300	1.231	541	980.3							
1717	5400	.407	986	-	1717	5400	1.238	544	984.7							
1737	5472	.408	988	-	1737	5472	1.243	545	993.0	544						

COMMENTS:

BY: TEFT TELLER / J. MAJER

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY
Field Work Sheet

B#15-SH-T-1/P

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME B#15
CASING 2 1/2" O.D. 13 5/8" I.D. ELEV. 9177 DATE: 7/15/76
LINER DESCRIPTION: 9 7/8" O.D. 2509 ZERO POINT 66+7'
OPEN HOLE 2509-5496' DEPTH 5496'

TUBING DETAIL:

PURPOSE

REMARKS:

P1-C-1700 F90 13019 12/11 1.5
ELEMENT P1-C-2950 SERIAL NO. 9235 CLOCK 12/11 1.5 TURN STABILIZATION PERIOD
ENGAGE STYLUS P1-1330, P2-1331 DISENGAGE STYLUS P1-1600, P2-1602
WELL HEAD 577
PICKUP @ 5496' TIME ON BOTTOM 1501-1531 MAX. F 531
WELL STATUS SHUT IN.
SHUT IN: ON PRODUCTION:
RATE

TIME	DEPTH	DEFL.	P-T	GRAD.	TEMP	TIME	DEPTH	DEFL.	P-T	GRAD.	TEMP	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	231	571	-	-0.00	1400	100	237	602	-0.00							
	100	242	592		0	1412	100	243	625	0							
1424	200	249	609		0	1424	200	243	640	+0.01							
1436	300	264	645		0	1436	300	247	676	+0.01							
1448	400	258	697		0	1448	400	270	734	+0.01							
1450	500	227	744		0	1450	500	251	831	+0.01							
1503	5496	375	908		0	1531	5496	269	948	+0.01							
	P1-1700						P1-2950										
	CALIBRATION CHECK					CALIBRATION CHECK WITH											
	WITH WELL @ 750F					WELL @ 750F											
	DEF- 1.645					DEF- 1.690											
	PSIG- 2477					PSIG- 2525											

COMMENTS:

NOTE: WE USED B#15-SH-T- GRADIENT FOR CORRECTING THE PRESSURES.

RY: 1.1

76

UNION
GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

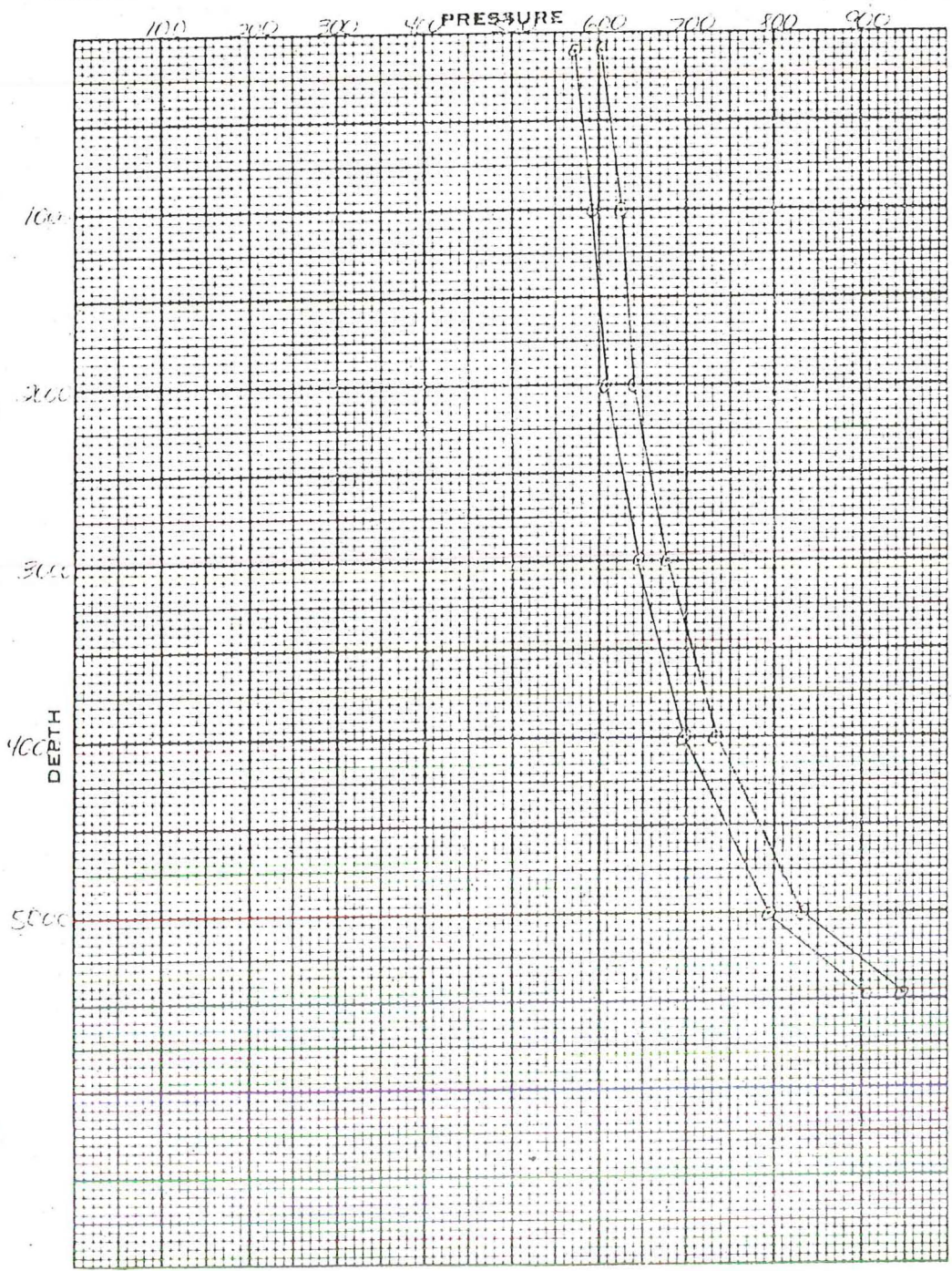
B15 S45 W/P

OWNER _____ FIELD VALLE GRANDE WELL NAME BACA #15
 CABING _____ ELEV 9177' DATE 7-8-76
 LINER DESCRIPTION: _____ ZERO POINT G.L. + 7'
 _____ DEPTH 5496'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIG
 _____ SERIAL NO 9235

PURPOSE _____ MAX TEMP 531 °F @ _____
 REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	574	
1000	592	
2000	609	
3000	645	
4000	697	
5000	794	
5496	908	

100	602	
1000	625	
2000	640	
3000	676	
4000	734	
5000	831	
5496	948	

BY: _____

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15 544 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210'; 13 7/8 1273' ELEV. 9177 DATE: 7/1/76
 LINER DESCRIPTION: 9 5/8" AT 2509' ZERO POINT CL+7'
 2509- TD = OPEN HOLE DEPTH

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4700 SN 13012 CLOCK 12 HR 15 T
 ELEMENT 80° - 646 °F SERIAL NO. 10052 CLOCK 12 HR 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P 1215 T 1216 DISENGAGE STYLUS P 1436 T 1436
 WELL HEAD 575 PS19
 PICKUP @ 5496 TIME ON BOTTOM 1350 - 1400 MAX. °F 531
 WELL STATUS
 SHUT IN: ON PRODUCTION:
 RATE

PS1

TEMP.

	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
12	100	.233	571		7006	1320	100	.087	107								
13	5496	.372	901		0	1350	5496	1.543	531								
1410	5496	.372	901		0	1400	5496	1.543	531								

COMMENTS:

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-543-P1T

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME FACCA 15
 CASING 31" @ 210' 1 3/8" @ 1273' ELEV. 9177 DATE: 6/24/76
 LINER DESCRIPTION: 9 1/2" @ 2509' ZERO POINT CL+16'
OPEN HOLE - 2509' - T.O. DEPTH 5119'

TUBING DETAIL:

PURPOSE

REMARKS:

P-C-2950 P-510 9.235 12HR 15
 ELEMENT T-100-6216 SERIAL NO. 10052 CLOCK 12HR 12TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1315 T-1317 DISENGAGE STYLUS P-1510 T-1510
 WELL HEAD 530
 PICKUP @ 5497 TIME ON BOTTOM 1549-1449 MAX. F 531
 WELL STATUS SHUT IN
 SHUT IN: ON PRODUCTION:
 RATE

P-510

TEMP

TIME	DEPTH	DEFL.	P-Ø	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
110	375	538			-012	1340	100	035	107								
140	613	499			+001	1349	5497	1.543	531								
1449	5497	613	9.34		+001	1449	5497	1.543	531								

COMMENTS:

76

UNION

GEO THERMAL DIVISION

DEL PYLE

MAY 23 1976

SUBSURFACE SURVEY

Field Work Sheet

B#15 S-43 1/4

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME Union #15
 CASING 8" @ 11' ; 1 3/4" @ 1273 ELEV. 4177' DATE: 5/19/76
 LINER DESCRIPTION: 2 3/8" @ 2309' ; Open hole 2509' - T.D. ZERO POINT 1st + 6'
 DEPTH 3498'

TUBING DETAIL:

PURPOSE

REMARKS:

Element - C 4000 Rig 581 - 7198 Clock 12 hr 15 Turn
 ELEMENT 581 - 7198 SERIAL NO. 10050 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1009 ; T-1002 DISENGAGE STYLUS P-1038 ; T-1037
 WELL HEAD 581 Rig
 PICKUP @ 3497' TIME ON BOTTOM 1154 - 1204 MAX. F. 530.1 F
 WELL STATUS Shut-in
 SHUT IN: ON PRODUCTION:
 RATE

Pressure

Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1154	100	.239	58.1		- .011	1154	100	.109	113.8								
1154	112	.412	60.9		- .008	1154	1000	.858	241.8								
1154	116	.476	61.7		- .003	1116	2800	1.351	482.9								
1154	1128	.245	65.7		- .003	1128	3000	1.407	495.3								
1154	1140	.324	71.9		- .002	1140	4000	1.437	503.6								
1154	1152	.363	800		- .004	1152	5000	1.484	515.3								
1204	3497	.419	910.6		- 0 -	1204	3497	1.539	530.1								

COMMENTS:

BY: (Signature)

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15-S41-DT

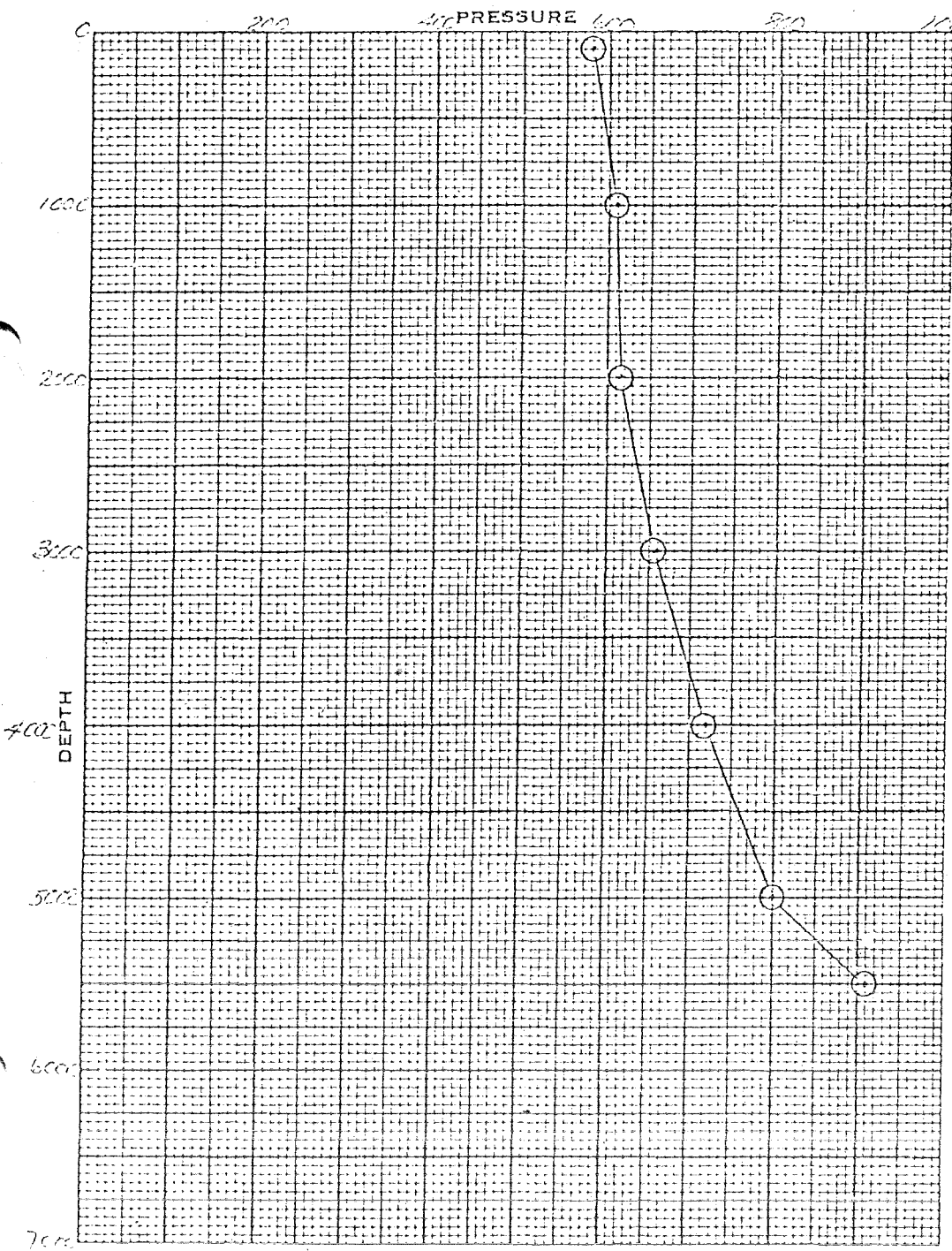
76

OWNER _____ FIELD Valle Grande WELL NAME BPP #15
 CASING _____ ELEV 9177' DATE 5/19/76
 LINER DESCRIPTION: _____ ZERO POINT GL + 6'
 _____ DEPTH 5497'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIG
 _____ SERIAL NO 7198

PURPOSE _____ MAX TEMP 530.1 F @ 5497'
 REMARKS: _____

STABILIZATION PERIOD



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	581	
1000	607	
2000	617	
3000	657	
4000	711	
5000	800	
5497	910.6	

BY: _____

76

GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

B.15-S41-PT

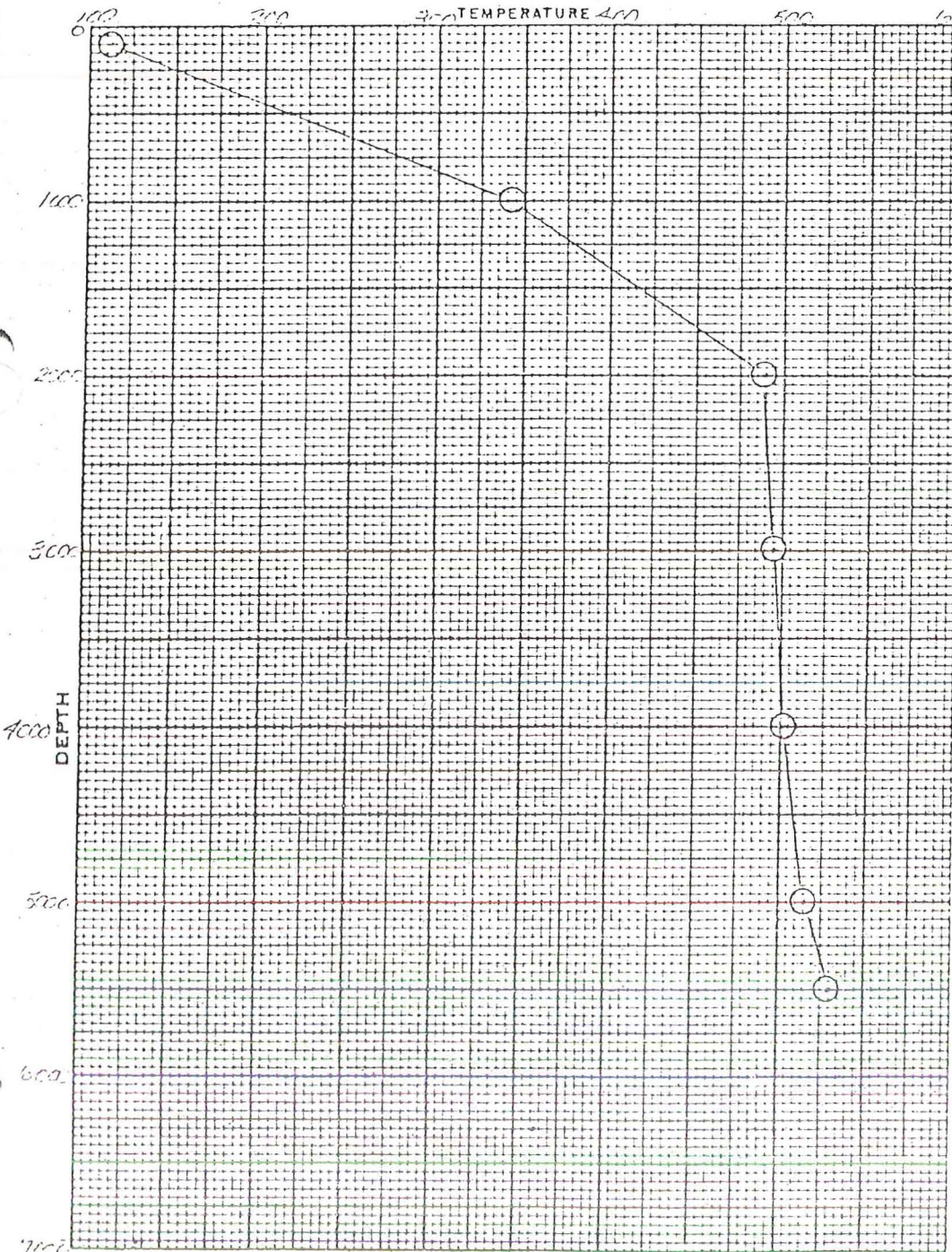
OWNER _____ FIELD Valle Grande WELL NAME B.A.P.P. #15
 CASING _____ ELEV 9177' DATE 5/19/76
 LINER DESCRIPTION _____ ZERO POINT SL + 6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAH? _____
 _____ SERIAL NO 10052

PURPOSE _____ MAX TEMP 530.1 °F @ 5497'

REMARKS: _____

STABILIZATION PERIOD



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	113.8		
1000	321.8		
2000	408.9		
3000	445.8		
4000	503.6		
5000	515.8		
5497	530.1		

BY: _____

76

UNION

DEL PYLE

GEOHERMAL DIVISION MAY 26 1975

SUBSURFACE SURVEY

Field Work Sheet

815-542 P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BACA 15
 CASING 20' @ 210' 13 3/8" @ 1273 ELEV. DATE: 5/13/76
 LINER DESCRIPTION: 9 3/8" @ 2509' ZERO POINT 647'
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-4000 FSIG. 7198 12 hr 15
 ELEMENT F-80-646F SERIAL NO. 10655 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0905 T 0907 DISENGAGE STYLUS P1150 T1153
 WELL HEAD 582
 PICKUP @ 5497 TIME ON BOTTOM 1039-1109 MAX. IF 529
 WELL STATUS SHUT IN
 SHUT IN: ON PRODUCTION:
 RATE

RSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1064	100	1.201	5915		-0.01	1064	100	1.114	115								
1037	500	1.363	509		-0.01	1037	500	1.432	515								
1100	5497	1.412	906		0	1100	5497	1.536	529								

COMMENTS:

BY:

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY
Field Work Sheet

B15539 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15
 CASING 20" AT 210'; 13 3/8-1273' ELEV. DATE: 5/5/76
 LINER DESCRIPTION: 9 5/8 AT 2509' ZERO POINT CL+7
OPEN HOLE - TD DEPTH 5498

TUBING DETAIL:

PURPOSE

REMARKS:

ELEAINT - 0-4000 PSI SN 7198 LOCK 12 HR 1ST

ELEMENT 80-646 SERIAL NO. 10052 CLOCK TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1004 T1008 DISENGAGE STYLUS P-1315 T1315

WELL HEAD 591

PICKUP @ 5497 TIME ON BOTTOM 1139-1209 MAX. *F 529

WELL STATUS

SHUT IN: ON PRODUCTION:

RATE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
11	100	.267	598		7.011		100	.110	114								
12	5800	.362	850		7.001		5800	1.483	516								
2	5497	.417	911		0		5497	1.536	529								

COMMENTS:

BY: M. B. CD RB

76

GEOGRAPHICAL SURVEY DEL' PYLE

SUBSURFACE SURVEY
Field Work Sheet

APR 22 1976
B-10 3-76 1/17

OWNER: Union Oil Co. of Calif. and Teller County
 CASING: 7 7/8" O.D. 2405' ELEV. 4602'
 LINER DESCRIPTION: 2405' - T.D. Open hole
 WELL NAME: 2405'
 DATE: 4/22/76
 SURF POINT: 4602'
 DEPTH: 2405'

TESTING DETAILS:

PURPOSE:

REMARKS:

1st Survey by SN-2098 1976-19-10 M.T. 1976
 ELEMENT: 20' CASE SERIAL NO. 10035 CLOCK: 1/2 STABILIZATION PERIOD
 ENGAGE STYLUS: P-1308, T-1309 DISENGAGE STYLUS: P-1307, T-1308
 WELL HEAD: 119 Bg
 PICKUP: 6:11 TIME ON BOTTOM: 1456-1524 MARK: 3rd F
 WELL STATUS: Shut-in
 SHUT IN: _____ ON PRODUCTION: _____
 RATE: _____

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
						1453	100	151	112		C
	150	525				1454	1500	178	1100		4000
	150	565				1524	675	78	1963		6011

COMMENTS:

BY: A.P. PR

76

GEOGRAPHICAL DIVISION

DEL PYLE
APR 25 1975

SUBSURFACE CONVEY
FIELD WORK CHECK

315-536-P/7

OPERATION OIL OF CALIF FIELD NO. 12231
 CABLE 2" 210' 1734' 12231 ELEV. 9177'
 LOG DESCRIPTION: 9 7/8" 2509' 12231 Hole - 2509' - 711'
 WELL HEAD 21" 1515'
 DEPTH 5419'

TUNING DETAIL:

PURPOSE:
 REMARKS:
 SERVO P-0-4100 R310 7198
 ELEMENT T-03-046 SE SERIAL NO. 10053 CLOCK 131003 TURN
 ENGAGE STYLUS P-0912 T-0915 DIVERGENCE STYLUS P-1200 T-1201
 WELL HEAD 21" R310
 PICKUP @ 5417 TIME ON BOTTOM 1151-1126 MEAS. 530.4
 WELL STATUS SHUT IN
 GRAY IN: ON PRODUCTION:
 RATE:

PRESSURE					TEMPERATURE				
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.
110	275	614	-102		1011	160	577	153	
1111	351	713	-101		1015	283	613	513	
1122	427	815	913		1126	349	654	512	

COMMENTS:

BY:

76

UNION

DEL PYLE

GEO THERMAL DIVISION MAY 13 1976

SUBSURFACE SURVEY

Field Work Sheet

B # 15-538 P/T

OWNER Union Oil Co of Cal. FIELD YALLO GRANDE WELL NAME B # 15
 CASING 20" @ 210 - 13 3/8" @ 1273 ELEV. 7177 DATE: 4-27-76
 LINER DESCRIPTION: 9 5/8" @ 2509 2509 TO TD is open Hole ZERO POINT GL + 6
 DEPTH 5498

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 0-4000-7198 SN Clock 12hr 15 Turn

ELEMENT 80° - 646 SERIAL NO. 10052 CLOCK 12hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P 1452 T 1456 DISENGAGE STYLUS P 1818 - T 1817

WELL HEAD 5435

PICKUP @ 5497 TIME ON BOTTOM MAX. °F 529.4

WELL STATUS

SHUT IN:

ON PRODUCTION:

RATE

Pressure

Temperature

TIME	DEPTH	DEFL.	P-T	GRAD.	COEFF	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1541	100	.269	602.1		-.011	1541	100	.110	114.1								
1553	1000	.283	631.9		-.002	1553	1000	.871	345.6								
1605	2000	.288	642.5		-.002	1605	2000	1.385	489.9								
1617	3000	.302	672.3		-.002	1617	3000	1.409	495.3								
1629	4000	.326	723.4		-.002	1629	4000	1.438	503.9								
1-1701	5000	.363	802.1		-.001	1637	5000	1.485	516.1								
3-1733	5497	.416	914.9		- 0 -	1703	5497	1.536	529.4								

COMMENTS:

GEOTHERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

76

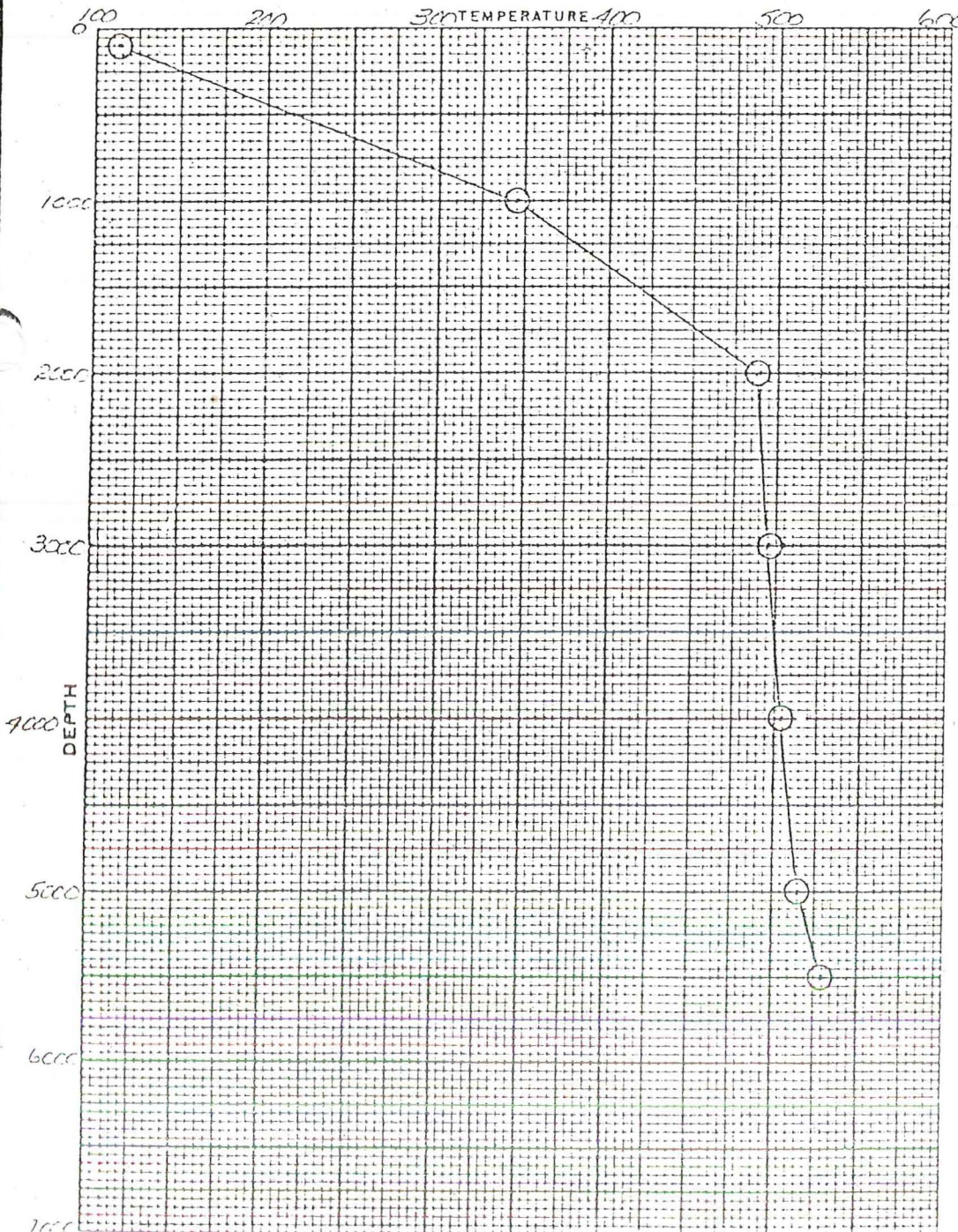
815-S38-PT

OWNER _____ FIELD LaVe Grande WELL NAME BPCP #15
 CABING _____ ELEV 9177' DATE 4/27/76
 LINER DESCRIPTION: _____ ZERO POINT GL +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT 80° - 646° FAH
 _____ SERIAL NO 10052

PURPOSE _____ MAX TEMP 529.4 °F @ 5497'
 REMARKS: _____

STABILIZATION PERIOD



PRESSURE	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	114.1		
1000	345.6		
2000	489.9		
3000	496.3		
4000	503.9		
5000	516.1		
5497	529.4		

BY: _____

76

UNION

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

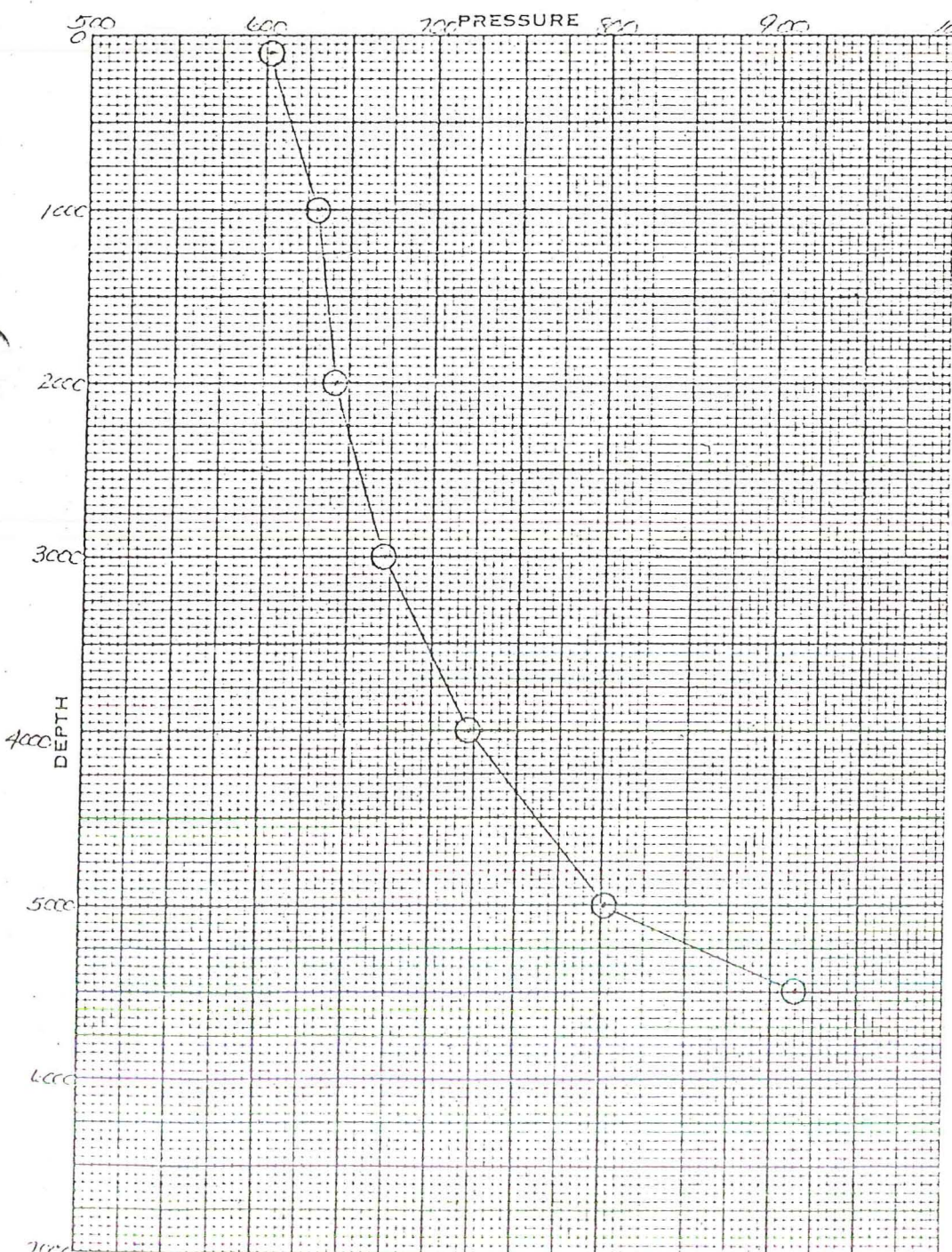
B15-538-PT

OWNER _____ FIELD Unite Granite WELL NAME BACA #15
 CASING _____ ELEV 9177' DATE 4/27/76
 LINEAR DESCRIPTION _____ ZERO POINT GL +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT 0-4000 PS
 _____ SERIAL NO 7198

PURPOSE _____ MAX TEMP 522.4 °F @ 5497'

REMARKS _____



PRESSURES.	GAUGE	BOMB
CASING. PSI		
DEPTH	PRESSURE	GRADIENT
100	602.1	
1000	631.9	
2000	642.5	
3000	672.3	
4000	723.4	
5000	802.1	
5497	914.9	

BY: _____

76

UNION

DEL PV 3

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B# 15 3-37 4/7

OWNER Union Oil Co. of Calif. FIELD Valle Grande

WELL NAME Bran # 15

CASING 30" @ 210' ; 15" @ 1273' ELEV. 9177'

DATE: 9/25/76

LINER DESCRIPTION: 9 1/2" @ 2509' ; Open hole 2905' - T.D.

ZERO POINT CL + 6'

DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P 0-4000 Big SN 7198 12 hg 15 Turn

ELEMENT 80° - 646° F SERIAL NO. 1605-2 CLOCK 1-2 hg. 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1034 ° T-1037 DISENGAGE STYLUS P-1349 ° T-1548

WELL HEAD 605 Big

PICKUP @ 5497' TIME ON BOTTOM 1256-1306 MAX. °F 529.6° F

WELL STATUS Shut-in

SHUT IN:

ON PRODUCTION:

RATE

Pressure

Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	DEFL.	TIME	DEPTH	DEFL.	D-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.275	615		-.002	1155	100	.150	126.5								
	500	.361	778		-.001	1234	500	1.481	515								
	5497	.415	913		-0-	1306	5497	1.537	530								

COMMENTS:

BY: C.P. C.D.

76

UNION

GEO THERMAL DIVISION

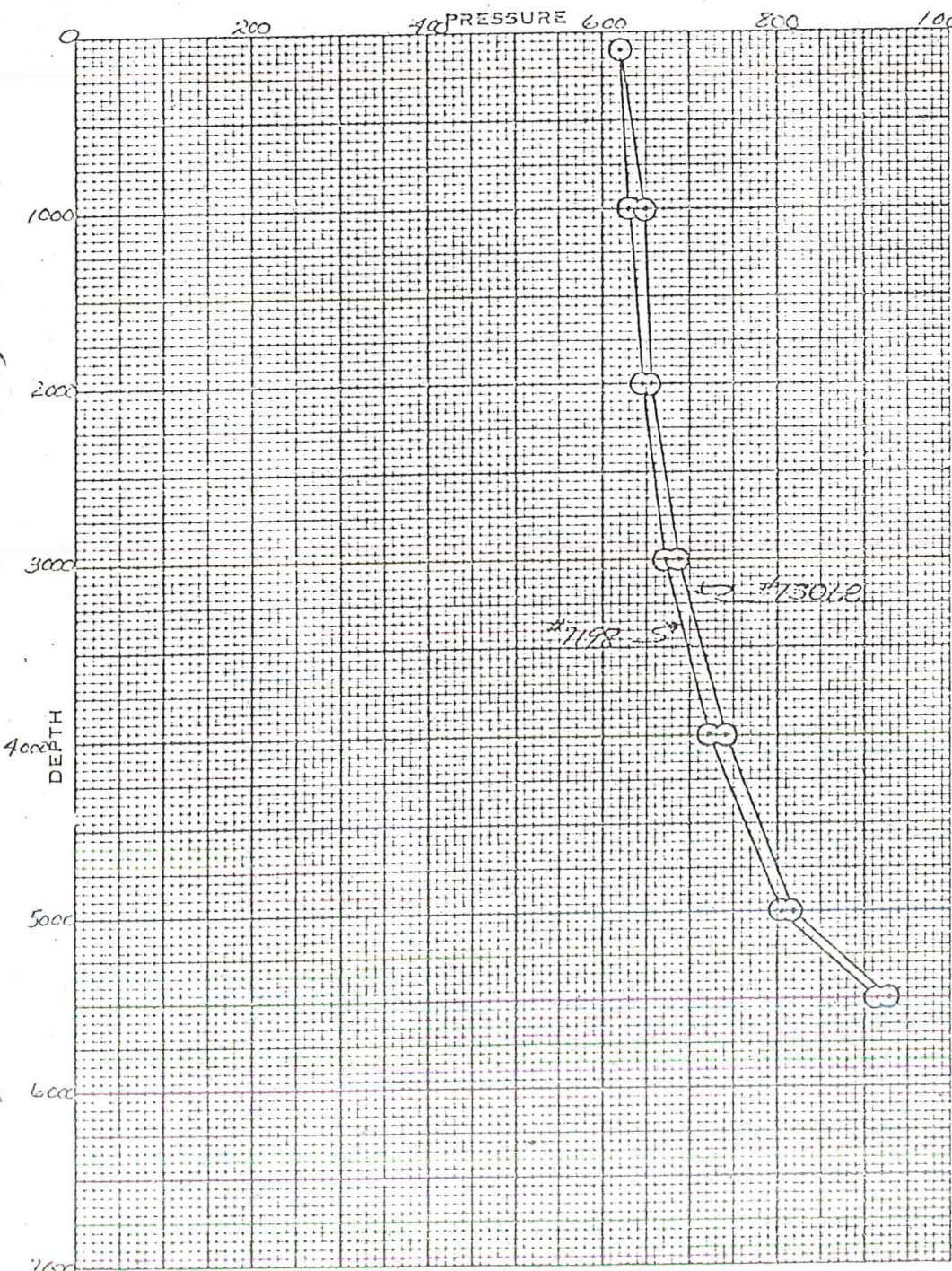
SUBSURFACE PRESSURE SURVEY

B15-535-PP

OWNER _____ FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV 9177' DATE 4/6/76
 LINER DESCRIPTION: _____ ZERO POINT GL +6'
 _____ DEPTH 5497'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIC
 _____ SERIAL NO 7198 & 13012

PURPOSE _____ MAX TEMP _____ °F @ _____
 REMARKS: _____ STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
#7198		
100	621.3	
1000	631.9	
2000	644.7	
3000	672.3	
4000	723.4	
5000	804.3	
5497	914.9	

#13012		
100	620.2	
1000	649.0	
2000	653.8	
3000	687.5	
4000	742.8	
5000	819.7	
5497	930.3	

BY: _____

76

Union

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

DATE

B15 534 T/T

OWNER UNION OIL COMPANY FIELD HALL GRANDE WELL NAME BACA #15
 CASING 20' AT 210' ; 13 3/8" AT 1273 ELEV. 9176 - 2204' 9177 DATE: 4/5/71
 LINER DESCRIPTION: 9 5/8 2509 ZERO POINT 6L+6'
 2509 - TD - OPEN HOLE DEPTH 5497

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - T₁ = 80° - 6.46°F ; SN 10052 CLOCK 12 HR 15 TURN
 ELEMENT T₂ 100° - 7.92° SERIAL NO. 10098 CLOCK 12 HR 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS T₁ 1003 T₂ - 1008 DISENGAGE STYLUS T₁ - 1258 T₂ 1257
 WELL HEAD 590 PSIG
 PICKUP @ 5497 TIME ON BOTTOM 1143 - 1158 MAX. °F
 WELL STATUS SHUT.
 SHUT IN: fcb ON PRODUCTION:

RATE

T₁ # 10052 T₂ # 10098

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1042	100	.276	156.7			1042	100	.156	165.8								
	1030	.917	355.7			1056	1000	.715	370.3								
	2000	1.570	491.3			1108	3000	1.097	477.1								
1130	5000	1.412	472.1			1120	5000	1.119	504.3								
1151	9000	1.441	504.7			1131	4000	1.142	511.9								
1147	5000	1.487	511.6			1142	5000	1.181	524.7								
1158	5497	1.540	530.4			1158	5497	1.226	539.6								

COMMENTS:

BY: JMEPCD JB

76

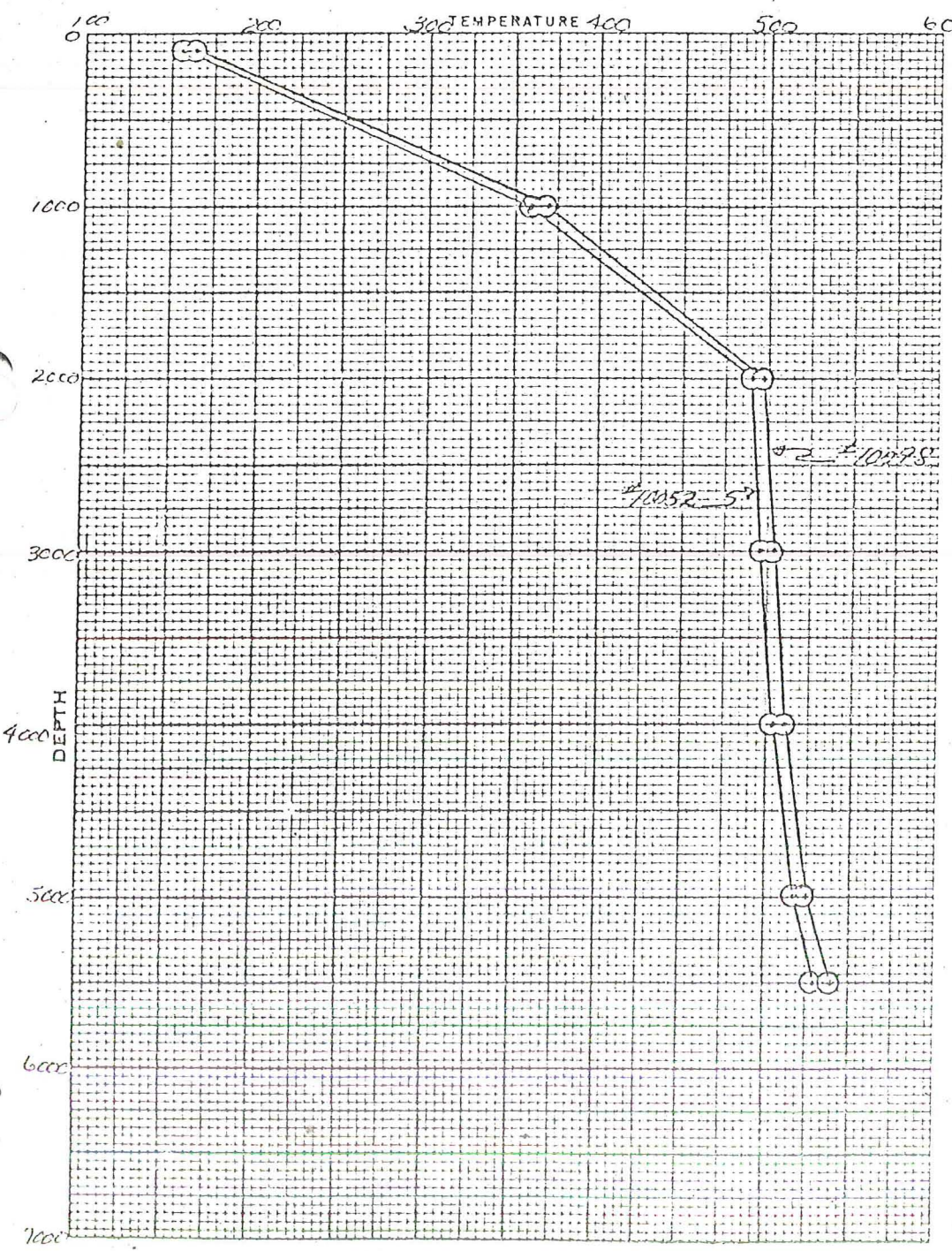
U.S. GEOLOGICAL SURVEY GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

B15-534-TT

OWNER _____ FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV 9177' DATE 4/5/76
 LINER DESCRIPTION _____ ZERO POINT GL + 6'
 DEPTH 5497'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAHR
 SERIAL NO 10052 & 10098

PURPOSE _____ MAX TEMP _____ °F @ _____
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOWB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
<u>10052</u>			
100	156.7		
1000	358.7		
2000	491.3		
3000	497.1		
4000	504.7		
5000	516.6		
5497	530.4		

DEPTH	TEMP.	DEPTH	TEMP.
<u>10098</u>			
100	163.8		
1000	370.3		
2000	497.1		
3000	504.3		
4000	511.9		
5000	524.7		
5497	539.6		

BY: _____

76

UNION

GEOHERMAL DIVISION

DEL PYLE

APR 5 1978

SUBSURFACE SURVEY

Field Work Sheet

B15-532-P1T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" @ 210', 13 3/8" @ 1273' ELEV. 9177' DATE: 3/18/76
 LINER DESCRIPTION: 9 5/8" @ 2509', OPEN HOLE - 2509' - T.D. ZERO POINT 64+6'
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

P - 0 - 11000 PSIG. 7198 12889-L 15

ELEMENT -80°F - 646°F SERIAL NO. 10052 CLOCK 13374 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1407 T-1411 DISENGAGE STYLUS P-1721 T-1725

WELL HEAD 610

PICKUP @ 5497 TIME ON BOTTOM 1553-1623 MAX. °F 530

WELL STATUS SHUT IN.

SHUT IN: ON PRODUCTION:

RATE

TIME PSIG	DEPTH PSIG	DEFL.	PSIG			TIME	DEPTH	DEFL.	TEMP			ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
			P-T	GRAD.	ID				P-T	GRAD.	ID							
	1142	.275	621		-1.002		100	1.280	462									
	1502	.284	634		-1.002		1000	1.375	487									
	1515	.290	647		-1.002		2000	1.388	491									
	1527	.303	675		-1.002		3000	1.410	497									
	1539	.325	701		-1.002		4000	1.438	504									
	1551	.361	799		-1.001		5000	1.482	515									
	1623	.415	913		0		5497	1.537	530									

COMMENTS:

BY:

LM 20

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

315-532-PT



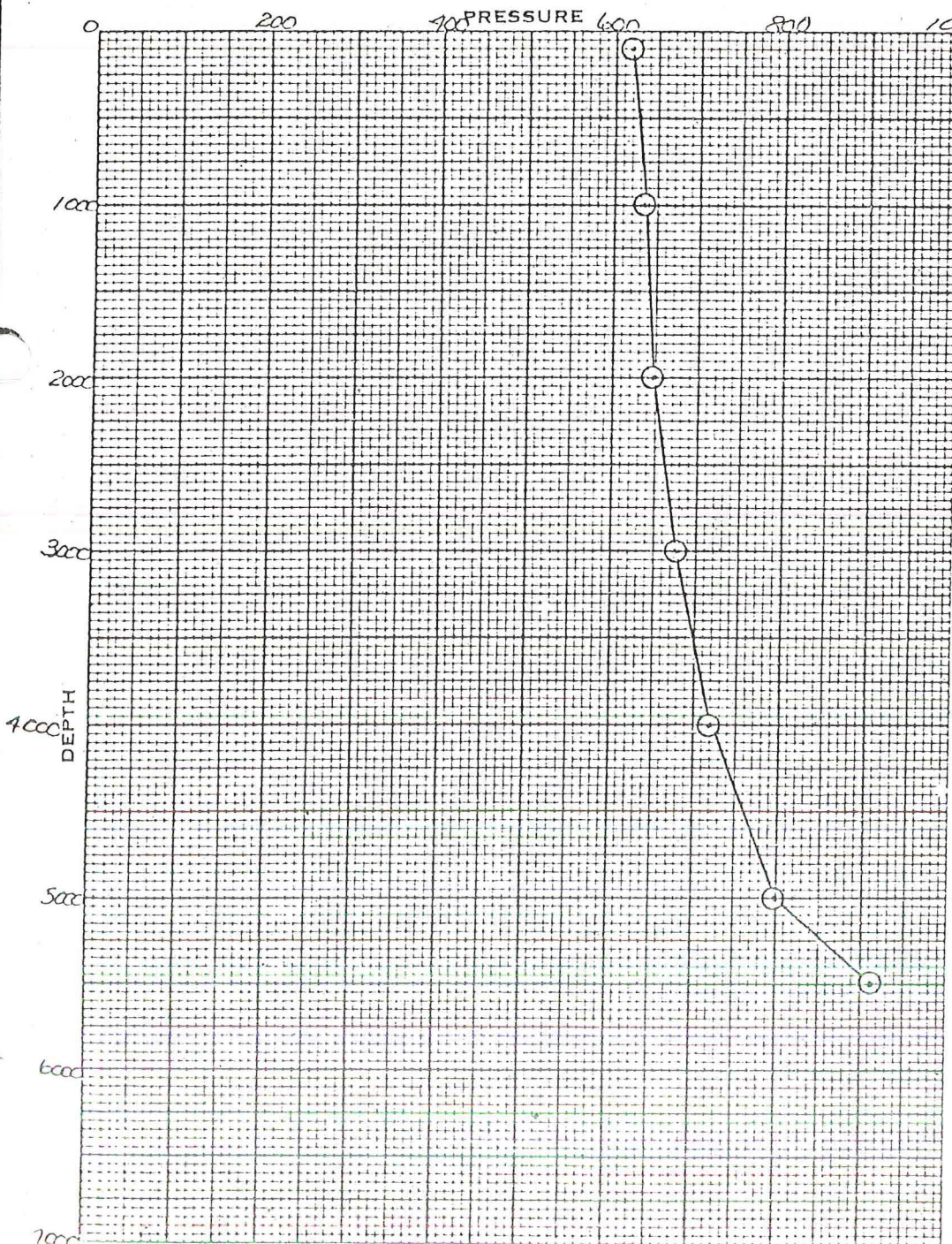
OWNER _____ FIELD _____ WELL NAME BACA #15
 CABING _____ ELEV _____ DATE 3/18/76
 LINER DESCRIPTION: _____ ZERO POINT GL 76'
 _____ DEPTH 5497'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSI
 _____ SERIAL NO 7198

PURPOSE _____ MAX TEMP 530 °F @ 5497'

REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	PRESSURE	GRADIENT
100	621	
1000	634	
2000	647	
3000	675	
4000	721	
5000	798	
5497	913	

BY: _____

GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

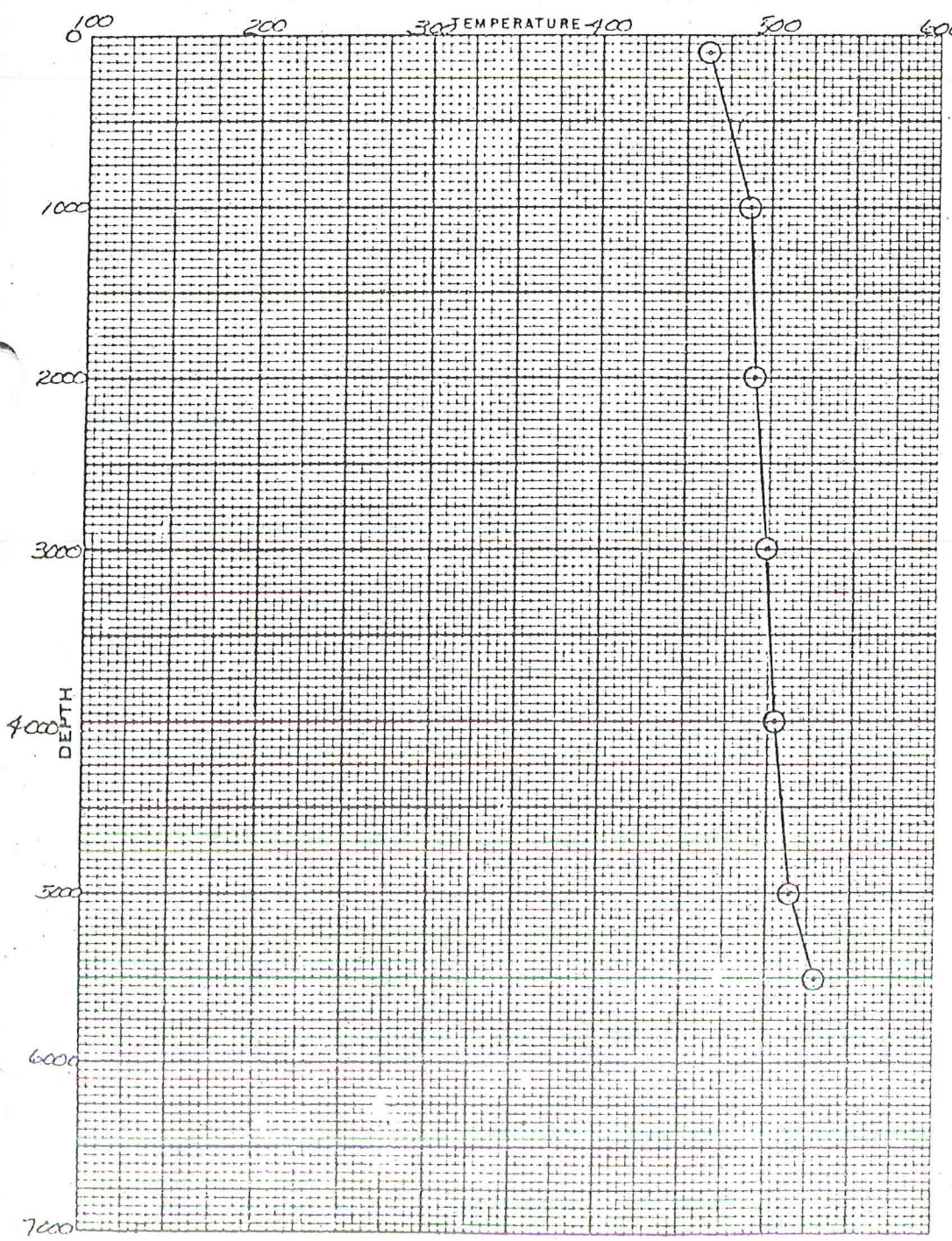
B15-332-PT

76

OWNER _____ FIELD _____ WELL NAME BACA #15
 CABING _____ ELEV _____ DATE 3/18/76
 LINER DESCRIPTION _____ ZERO POINT GL +6'
 DEPTH 5497'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAHR
 SERIAL NO 10052

PURPOSE _____ MAX TEMP 530 °F @ 5497'
 REMARKS _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB	
CASING PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	462		
1000	487		
2000	491		
3000	497		
4000	507		
5000	515		
5497	530		

BY: _____

76

UNION

DEL PYLE

APR 29 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-533-P/T

OWNER UNION OIL CO. CALIF FIELD VALLE GRANDE WELL NAME BH15
 CASING 20' @ 210'; 13 1/2" @ 1273'; ELEV. DATE: 4/2/76
 LINER DESCRIPTION: 9 5/8" @ 2509'; OPEN HOLE 2509-5497 ZERO POINT GL C1
 DEPTH 5497'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT P-0-4000 PSIG 7198 12589-L
 ELEMENT T-8 SERIAL NO. 10052 CLOCK 12890-L TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0943 T-0250 DISENGAGE STYLUS P-1021, T-1222
 WELL HEAD 595 0-1000 T/C
 PICKUP @ 5497 TIME ON BOTTOM 1110-1150 MAX. F 531.7
 WELL STATUS SHUT IN
 SHUT IN: ON PRODUCTION:
 RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	# CORR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1028	100	1.275	614		-7002	1028	100	1.253	153		JACK / REFER TO SURVEY B15-533-P/T						
1108	5000	1.359	794		-1001	1108	5000	1.456	5 1/2		TEMP @ 100' INCORRECT						
1150	5497	1.413	909		0	1150	5497	1.515	532								

COMMENTS:

BY: 1 111

76

UNION

DEE PYLE

MAR 24 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B#15-538-P/1

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME BOCAT 15
 CASING 20' @ 310'; 13 3/8" - 1273' ELEV. 9177 DATE: 3/16/76
 LINER DESCRIPTION: 9 5/8" - 2509'; 2509' - T.D. - OPEN HOLE ZERO POINT G.L. + 6'
 DEPTH 5497

TUBING DETAIL:

PURPOSE

REMARKS:

P-0-4000PSIC - 7198 12889-L 15
 ELEMENT - 82°F - 686°F SERIAL NO. 10055 LOCK 13374 - 110 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1145 T-1122 DISENGAGE STYLUS P-1145 T-1145
 WELL HEAD 610
 PICKUP @ 5497 TIME ON BOTTOM 1240-1310 M. OF 537
 WELL STATUS SHUT IN
 SHUT IN: ON PRODUCTION:
 RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	DEFL.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	277	619		700.3	1201	100	1204	467								
	5:00	35	794		700.1	1238	5000	1395	524								
10:10	5497	415	513		-	1310	5497	1443	537								

COMMENTS:

76

UNION

DEE PYLE
MAR 10 1976

GEO THERMAL DIVISION

SUBSURFACE SURVEY
Field Work Sheet

B¹⁵ 530
P/T

OWNER UNION OIL Co FIELD VALLE GRANDE WELL NAME B¹⁵
 CASING 20" AT 210' 13 3/8" - 1273 ELEV. 9177 DATE: 3/3/76
 LINER DESCRIPTION: 9 5/8" - 2509, 2509 - TD - O/S 4 HOLES ZERO POINT GL + 6'
 DEPTH 5498

TUBING DETAIL:

PURPOSE INTER TEST

REMARKS:
SLEIGHT @ 4000 PSI SK 7198 CLOCK 12 HR 15 T
 ELEMENT 82° - 6560 SERIAL NO. 10055 CLOCK 12 HR TURN 8 STABILIZATION PERIOD
 ENGAGE STYLUS P0913 - T0915 DISENGAGE STYLUS P1200 - T1201
 WELL HEAD 610 PSIG
 PICKUP @ 5498 TIME ON BOTTOM 1042 - 1112 MAX. °F 539°
 WELL STATUS SHUT IN
 SHUT IN: ON PRODUCTION:
 RATE

PSI of

TIME	DEPTH	DEFL.	P-X	GRAD.	TIME	DEPTH	DEFL.	X-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
10	100	276	621		1000	100	1204	469°								
047	5000	359	789		1040	5000	1394	523°								
112	5498	415	915		1112	5498	1444	538°								

COMMENTS:

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BIS 529 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9177 DATE: 2/23/76
 LINER DESCRIPTION: 9 5/8" AT 2509; 2509 - TD = OPEN HOLE ZERO POINT CL 46'
 DEPTH 5498

TUBING DETAIL:

PURPOSE INTER. TEST

REMARKS:

ELEMENT - 0-90° PSI SN 7198 CLOCK - 12 HR 15 T

ELEMENT 82°-650° SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0944 T 0946 DISENGAGE STYLUS P-1345 T 1345

WELL HEAD 6.10 PSIC

PICKUP @ 5498 TIME ON BOTTOM 1229 - 1249 MAX. °F 537.3

WELL STATUS

SHUT IN:

ON PRODUCTION:

RATE

PSI

of

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1031	110	.275	814.9		1.003	1031	110	1.200	466.0								
1043	1100	.285	636.2		1.002	1043	1100	1.293	493.4								
1107	2100	.292	651.1		1.002	1107	2100	1.305	496.8								
1120	3100	.304	676.6		1.002	1120	3100	1.327	503.5								
1131	4000	.324	719.1		1.002	1131	4000	1.351	510.5								
1142	5100	.360	795.7		1.001	1142	5100	1.390	522.0								
1153	5100	.369	814.9		1.001	1153	5100	1.400	525.0								
1204	5200	.375	827.7		0	1204	5200	1.410	527.9								
1215	5300	.385	848.9		0	1215	5300	1.422	531.3								
1226	5400	.396	872.3		0	1226	5400	1.433	534.6								
1229	5498	.409	900.0		0	1229	5498	1.443	537.3								
1249	5498	.409	900.0		0	1249	5498	1.443	537.3								

COMMENTS: CALIBRATION CHECK W/ DWI AT 72°f

def = .925

cor = +.010

c def = .935

BY: JRD

GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

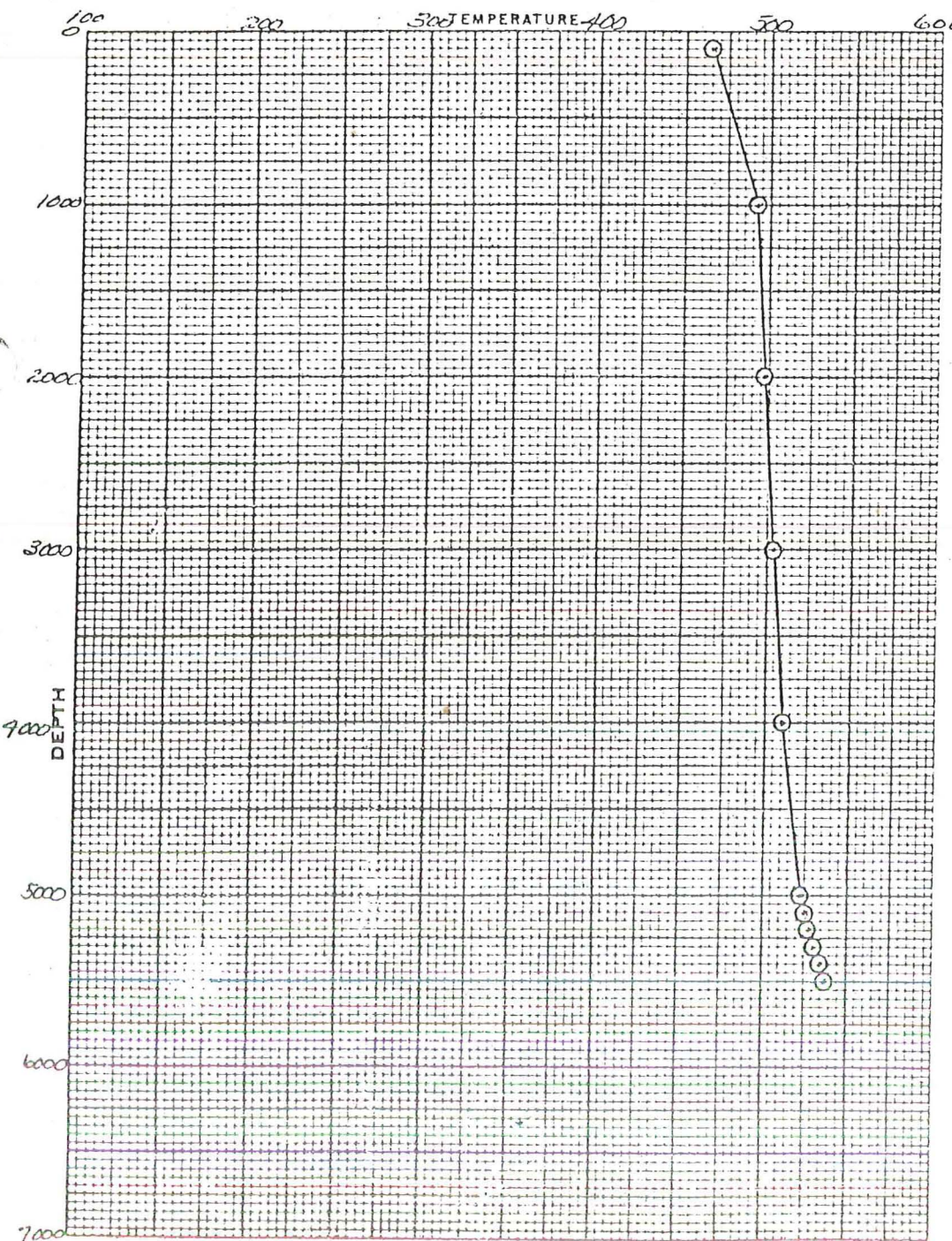
B15-529-PT

76

OWNER _____ FIELD _____ WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 2/23/76
 LINER DESCRIPTION: _____ ZERO POINT GL +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAHR
 _____ SERIAL NO 10055

PURPOSE _____ MAX TEMP 537.3 °F @ 5498'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMBS	
CASING, PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	466		
1000	493.4		
2000	496.8		
3000	503.5		
4000	510.5		
5000	522		
5100	525		
5200	527.9		
5300	531.3		
5400	534.6		
5498	537.3		

BY: _____

76

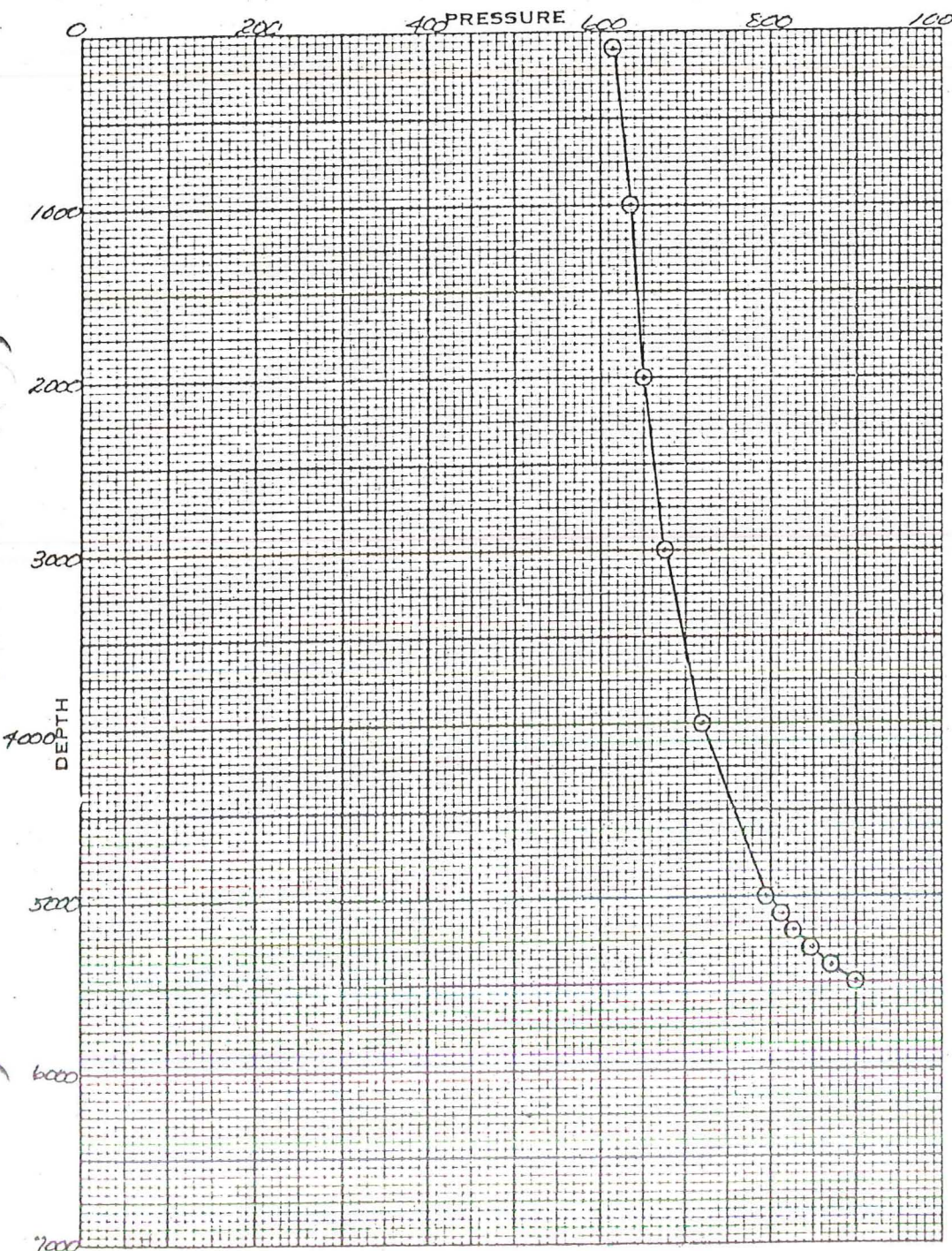
UNION

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15-S29-PT

OWNER _____ FIELD _____ WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 2/23/76
 LINER DESCRIPTION: _____ ZERO POINT GL +6'
 _____ DEPTH 5498'
 HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIG
 _____ SERIAL NO 7198
 PURPOSE _____ MAX TEMP 537.3 °F @ 5498'
 REMARKS: _____ STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	614.9	
1000	636.2	
2000	651.1	
3000	676.6	
4000	719.1	
5000	795.7	
5100	814.9	
5200	827.7	
5300	848.9	
5400	872.3	
5498	900.0	

BY: _____

76

union

DEL PYLE

FEB 20 1976

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

131529 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME ESHER #15
 CASING 20" AT 210'; 15 3/8" AT 1233 ELEV. 9177 DATE: 2/4/76
 LINER DESCRIPTION: 9 5/8 AT 2509; 2509 - TD = OPEN HOLE ZERO POINT CL + 6'
 DEPTH 5498

TUBING DETAIL:

PURPOSE WELL FLOWING THROUGH 1/4" VENT

REMARKS:

ELEMENT- 0-1110 PSI SN 7198 CLOCK- 12hr 15 TURN
 ELEMENT 820-686°F SERIAL NO. 10055 CLOCK 12hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1234 T-1237 DISENGAGE STYLUS P-1655 T-1655
 WELL HEAD 550 PSIG THROUGH MARSH 1/4" NEEDLE VALVE
 PICKUP @ 5498 TIME ON BOTTOM 1529 1559 MAX. F 536.4
 WELL STATUS TURNED WELL ON (1/4" VENT) 1315 hrs 5/3/76
 SHUT IN: ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1334	110	.282	629.8		-0.02	1334	110	1.281	489.9								
1346	1100	.286	638.3		-0.02	1346	1100	1.297	494.6								
1359	2100	.291	648.9		-0.02	1359	2100	1.312	499.0								
1417	3100	.304	676.6		-0.02	1417	3100	1.325	502.9								
1429	4000	.322	714.9		-0.02	1429	4000	1.347	509.4								
1443	5000	.356	787.2		-0.01	1443	5000	1.386	520.9								
1454	5100	.363	802.1		-0.01	1454	5100	1.395	525.5								
1505	5200	.374	823.5		0	1505	5200	1.407	527.0								
1516	5300	.384	846.8		0	1516	5300	1.416	529.6								
1527	5400	.391	872.3		0	1527	5400	1.428	532.0								
1529	5498	.406	893.6		0	1529	5498	1.440	536.4								
1559	5498	.406	893.6		0	1559	5498	1.440	536.4								

COMMENTS:

BY: JIM R. CO. JR.

576

GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

1315 529 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9177 DATE: 2/4/76
 LINER DESCRIPTION: 9 5/8" AT 2509' ZERO POINT GL + 6'
2509' - TD = OPEN HOLE DEPTH 5498

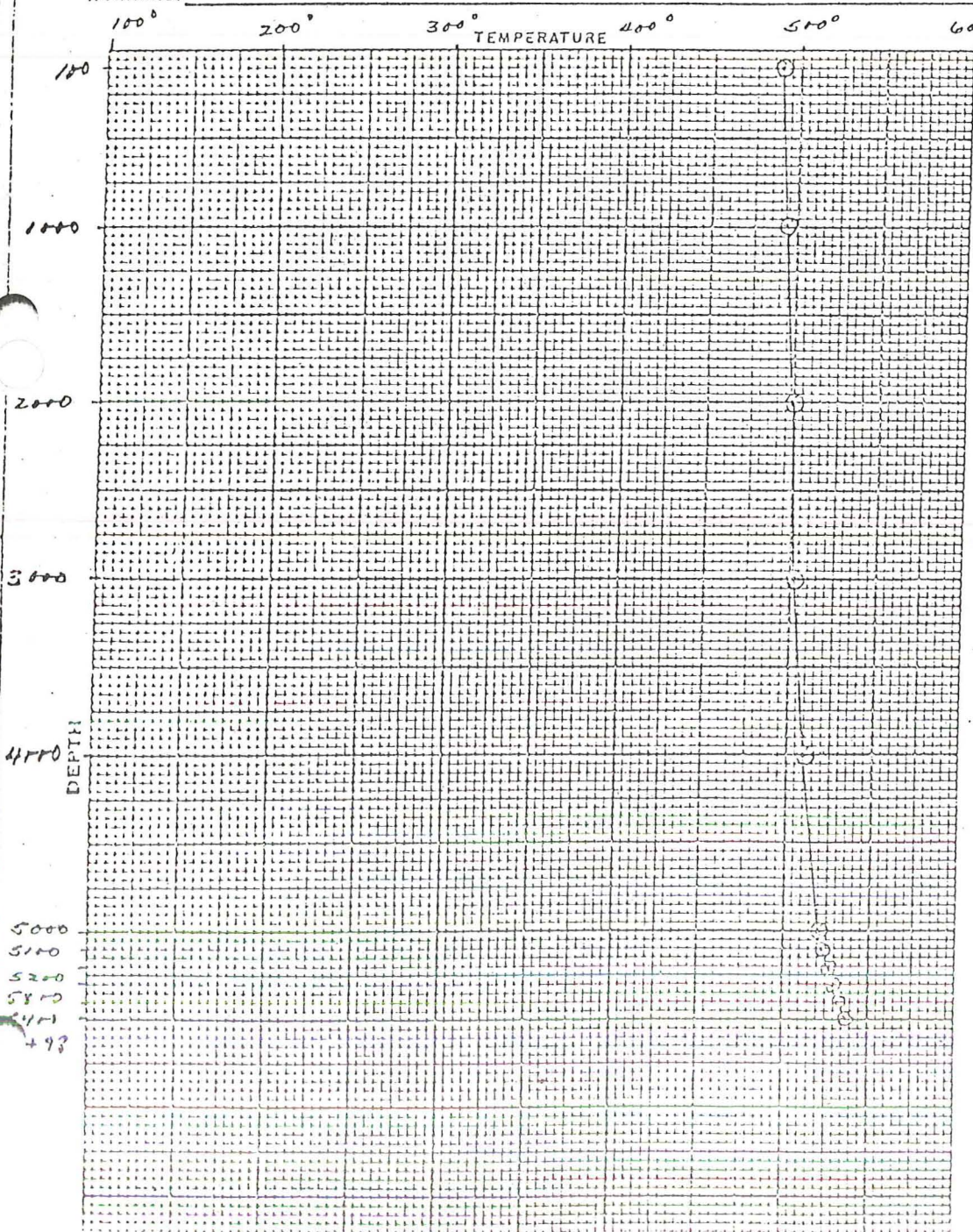
HOLE DESCRIPTION:

INSTRUMENT 82°-686° FAI
 SERIAL NO 10055

PURPOSE FLOWING WELL THROUGH 1/4" VENT

MAX TEMP 536.4 °F @ 5498'

REMARKS:



PRESSURES	GAUGE	COND.
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
110	489.9		
1000	494.6		
2000	499.0		
5110	502.9		
4000	509.4		
5000	520.9		
5100	523.5		
5200	527.0		
5300	529.6		
5400	533.0		
5498	536.4		

J.B.

76

GEO THERMAL DIVISION

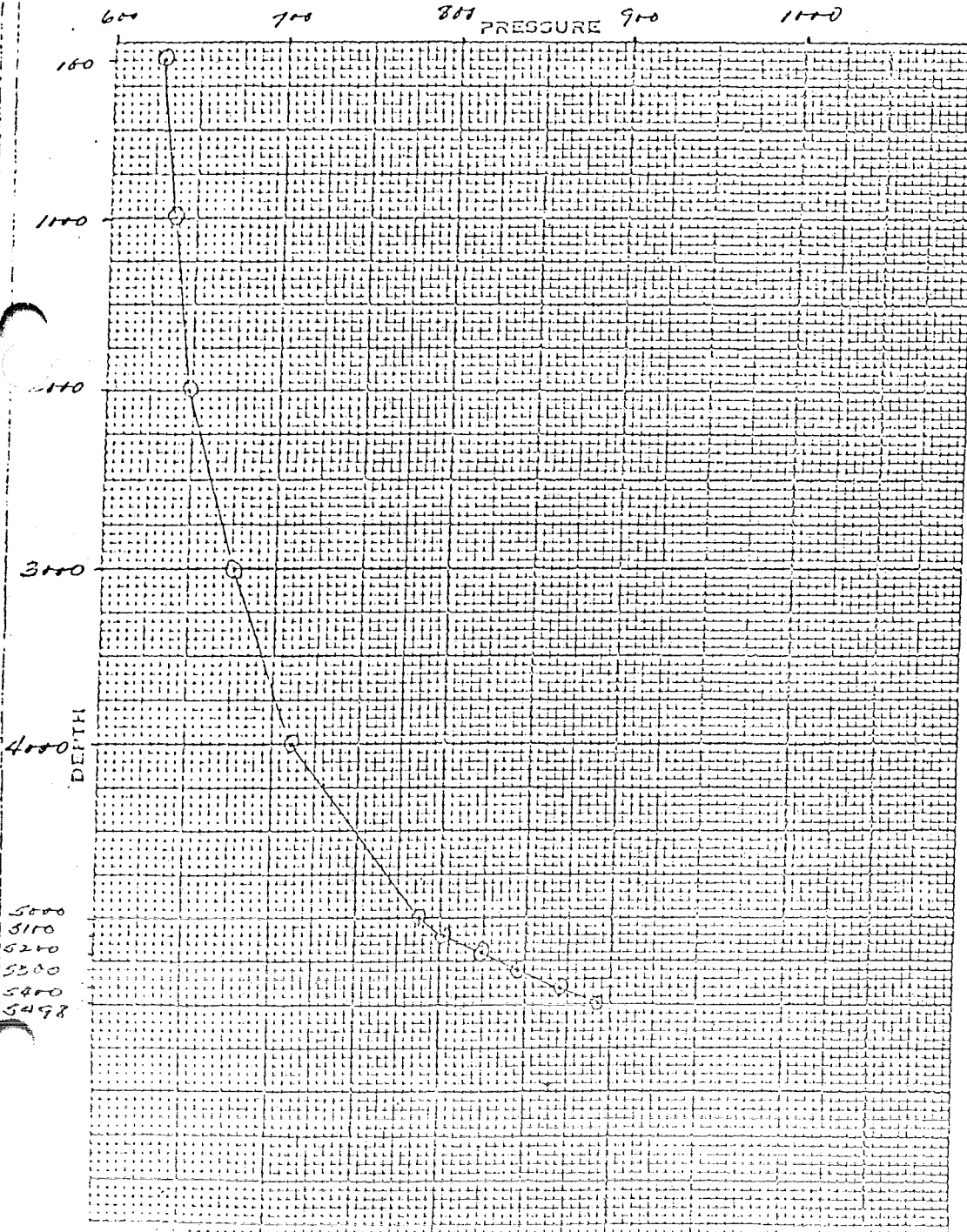
SUBSURFACE PRESSURE SURVEY

B15-527-PT

OWNER _____ FIELD _____ WELL NAME _____
 CASING _____ ELEV. _____ DATE: _____
 LINER DESCRIPTION: _____ ZERO POINT _____
 _____ DEPTH _____

HOLE DESCRIPTION: _____
 _____ INSTRUMENT _____ P.C.
 _____ SERIAL NO _____

PURPOSE _____ MAX. TEMP _____ °F @ _____
 REMARKS: _____



STABILIZATION PERIOD

PRESSURES,	GAUGE	50' @
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	629.8	-
1000	638.3	.009
2000	648.9	.011
3000	676.6	.033
4000	714.9	.038
5000	787.2	.072
5100	806.1	.149
5200	825.5	.234
5300	846.8	.213
5400	872.3	.255
5498	893.6	.213

JB

5000
5100
5200
5300
5400
5498

76

UNION

GEO THERMAL DIVISION

DEPT FILE

NO. 1570

SUBSURFACE SURVEY

Field Work Sheet

B#15-528-71T

OWNER UNION OIL CO. OF CALIF. FIELD VALLE GRANDE WELL NAME B#15
 CASING 20" @ 210'; 13 3/8" @ 1273 ELEV. 9177' DATE: 2/13/76
 LINER DESCRIPTION: 9 7/8" @ 2509'; 2509' - T.D. - OPEN HOLE ZERO POINT CL+1'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - P-0-4100 PSIG 7198 13371-L
 ELEMENT - T-85°F-681°F SERIAL NO. 10055 CLOCK 12889-L TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0950 T-0955 DISENGAGE STYLUS P-1500 T-1500
 WELL HEAD 61.5 OFF LUBRICATOR - 0-1000 T/G -
 PICKUP @ 5498' TIME ON BOTTOM 1352-1422 MAX. °F 538
 WELL STATUS FLOWING THEN 1/4" VENT
 SHUT IN: 1315 hrs - 5/3/76 ON PRODUCTION:
 RATE

PSIG:

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	TEMP	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
11	0	.276	617	-1002	1150	0	1.277	459									
12	100	.278	621	-1002	1203	100	1.297	495									
14	1000	.283	632	-1002	1216	1000	1.307	498									
228	2000	.289	645	-1002	1228	2000	1.313	499									
241	3000	.299	666	-1002	1241	3000	1.332	505									
254	4000	.321	713	-1002	1254	4000	1.335	512									
306	5000	.356	787	-1001	1306	5000	1.325	524									
317	5100	.363	802	-1001	1317	5100	1.405	526									
328	5200	.374	826	0	1328	5200	1.415	529									
340	5300	.384	847	0	1340	5300	1.425	532									
351	5400	.397	875	0	1351	5400	1.435	535									
422	5498	.407	896	0	1422	5498	1.446	538									

COMMENTS:

PRIOR TO SURVEY - 5000' OF WIRE WAS REMOVED - GONE BAD SINCE LAST FLOWING SURVEY.

IDENTIFICATION CHECK
 1 - det
 0 * COR
 PSI = 2002

BY: TO DOCT M

GEOHERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

B15-S28-PT

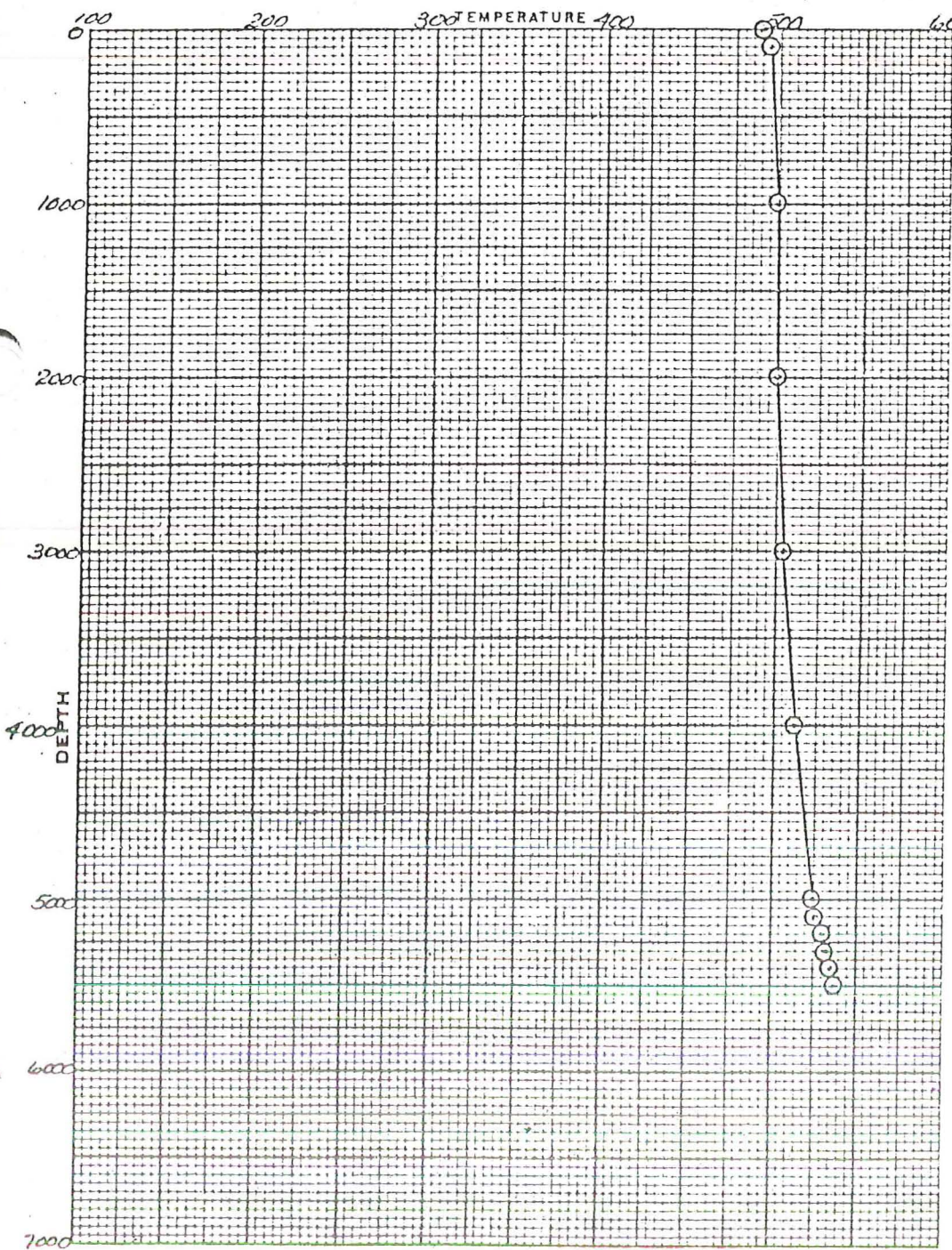
76

OWNER _____ FIELD _____ WELL NAME BPCA #15
 CABING _____ ELEV _____ DATE 2/12/76
 LINER DESCRIPTION _____ ZERO POINT GL + 6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAHR
 _____ SERIAL NO 10055

PURPOSE _____ MAX TEMP 538 °F @ 5498'
 REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
0	489		
100	495		
1000	498		
2000	499		
3000	505		
4000	512		
5000	524		
5100	526		
5200	529		
5300	532		
5400	535		
5498	538		

BY: _____

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15-S28-PT

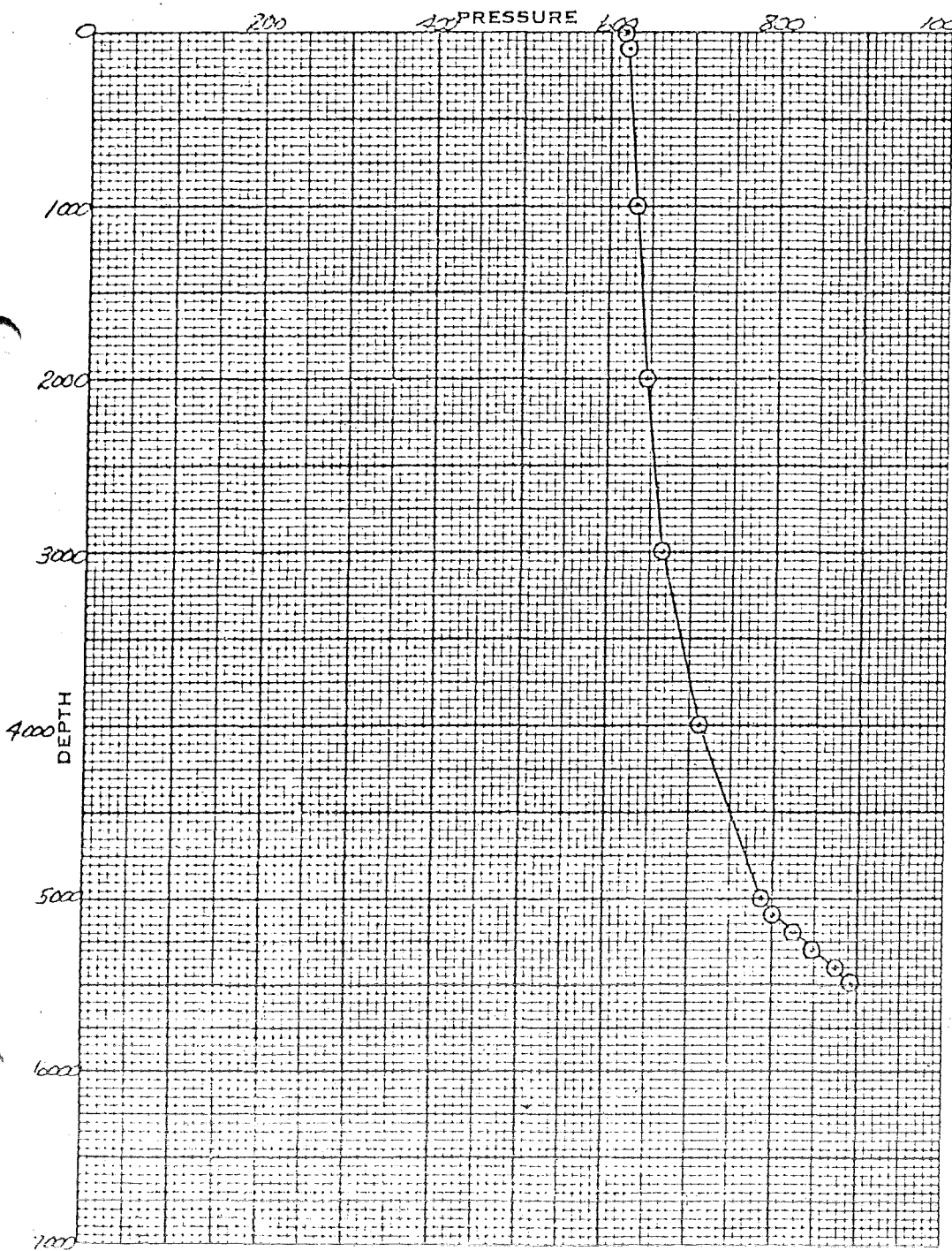
76

OWNER _____ FIELD _____ WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 2/12/76
 LINER DESCRIPTION: _____ ZERO POINT SL +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ PSIG
 _____ SERIAL NO 7198

PURPOSE _____ MAX TEMP 538 °F @ 5498'
 REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
0	617	
100	621	
1000	632	
2000	645	
3000	666	
4000	713	
5000	787	
5100	802	
5200	826	
5300	847	
5400	875	
5498	896	

BY: _____

76

GEO THERMAL DIVISION

DEL PYLE
FEB 10 1976

SUBSURFACE SURVEY Field Work Sheet

15 526 FT

OWNER: Oil Co. of SF Calif., FIELD OFFICE Grande WELL: ME PAPA #15
 CASING: 20" @ 210' - 13 7/8" @ 1273' ELEV. 9177 DATE: 7-14-75
 LINER DESCRIPTION: 9 7/8" @ 2509' Open Hole 2509 to TD ZERO POINT: SL T-6
 DEPTH: 528'

TUBING DETAIL:

PURPOSE:

REMARKS:

Element 0-4000 P.S.T.C. SN 7198 12 hr 15 T
 ELEMENT 8 1/2" F - 686 F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0936 T-0940 DISENGAGE STYLUS P-1310, T-1314
 WELL HEAD 535
 PICKUP @ 5498' TIME ON BOTTOM 1124-1224 MAX. °F 536
 WELL STATUS Shut in
 SHUT IN: 7-14-75 ON PRODUCTION:

RATE

Pressure

Temperature

Pressure					Temperature											
TIME	DEPTH	DEFL.	P-R	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	P-T	GRAD.	ID
1015	100	203	587	-	7.011	1015	100	0.013	96							
	5000	302	700			1020	5000	1.391	522							
	5000	302	700			1050	5000	1.391	522							
1120	5000	302	700			1120	5000	1.391	522							
1124	5498	412	706.4			1124	5498	1.441	536							
1151	5498	412	706.4			1151	5498	1.441	536							
1224	5498	412	706.4			1224	5498	1.441	536							

COMMENTS:

BY: R.B.

76



DEL' PYLE

JAN 6 1976

GEOTHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15 S 23 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210', 13 3/8" AT 1273' ELEV. 9177' DATE: 12/19/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT G.L. + 6
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT- 0-4000 PSI SN 7198 CLOCK-12 hr 15 TURNS

ELEMENT 82'-6.86 SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0838 T-0834 DISENGAGE STYLUS P-1204 T-1204

WELL HEAD 586 R516 0-2000 T/G

PICKUP @ 5498 TIME ON BOTTOM 1029-1129 MAX. 'F 53.7

WELL STATUS

SHUT IN: 7/14/75

ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-X	GRAD.	ID	TIME	DEPTH	DEFL.	F-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0925	100	.268	600.0		7.012	0925	100	.049	97.5								
0932	1100	.286	638.3		7.001	0937	1000	.680	303.2								
0950	2100	.294	655.3		7.001	0950	2100	1.050	406.0								
1002	3100	.338	685.1		7.002	1002	3100	1.330	504.5								
1015	4000	.328	727.7		7.002	1015	4000	1.353	511.1								
1027	5000	.365	806.4		7.001	1027	5000	1.393	522.9								
1029	5498	.417	917.0		0	1029	5498	1.441	536.7								
1059	5498	.417	917.0		0	1059	5498	1.441	536.7								
1129	5498	.417	917.0		0	1129	5498	1.441	536.7								

COMMENTS:



UNION 76

GEOHERMAL DIVISION

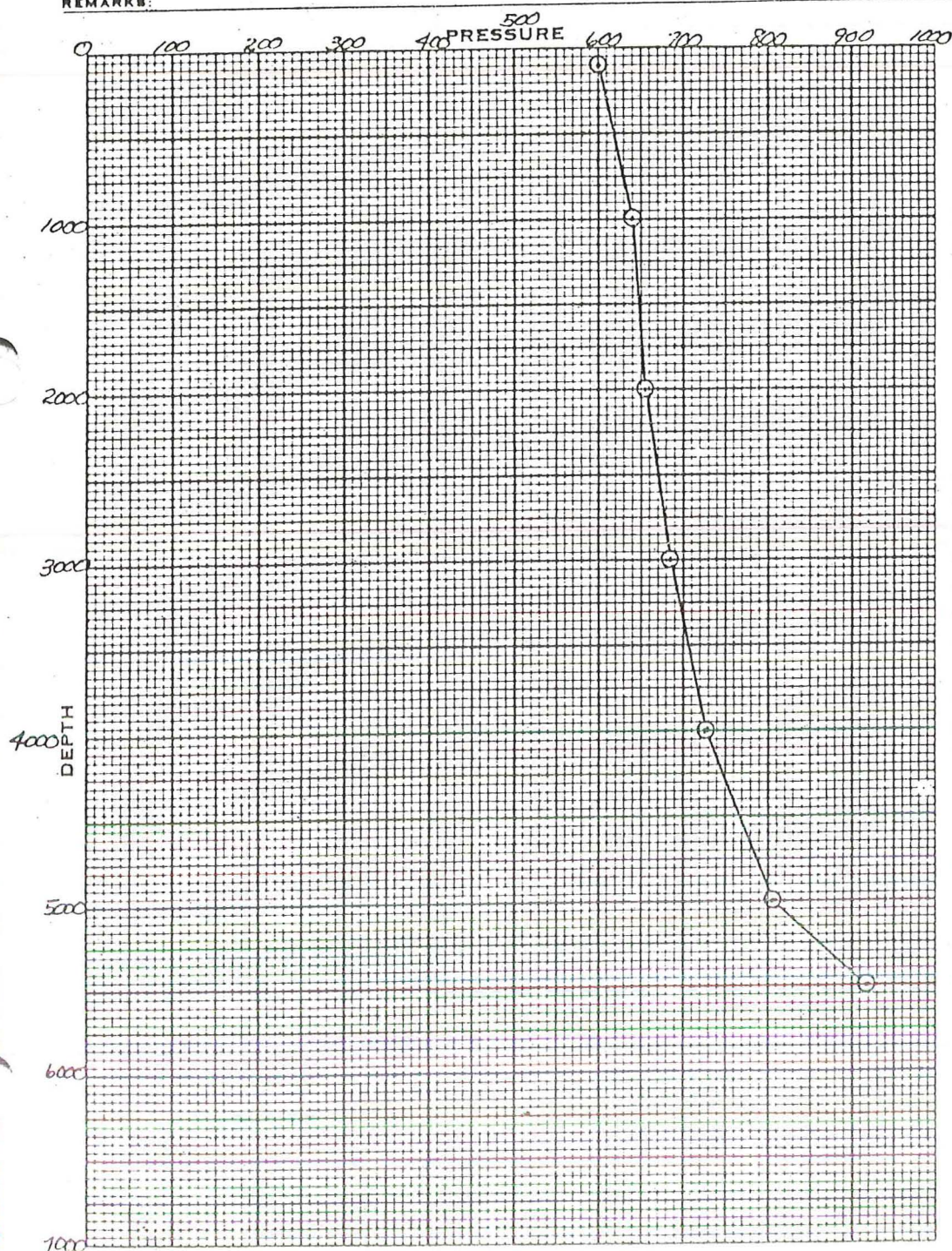
SUBSURFACE PRESSURE SURVEY

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 12/19/75
 LINER DESCRIPTION: _____ ZERO POINT GL + 6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT 0-4000 PSIC
 _____ SERIAL NO 7198

PURPOSE INTERFERENCE TEST MAX TEMP 536.7 °F @ 5498'

REMARKS: _____ STABILIZATION PERIOD _____



PRESSURES.	GAUGE	BOMB
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	600.0	
1000	638.3	
2000	655.3	
3000	685.1	
4000	727.7	
5000	806.4	
5498	917.0	

BY: _____

GEO THERMAL DIVISION SUBSURFACE TEMPERATURE SURVEY

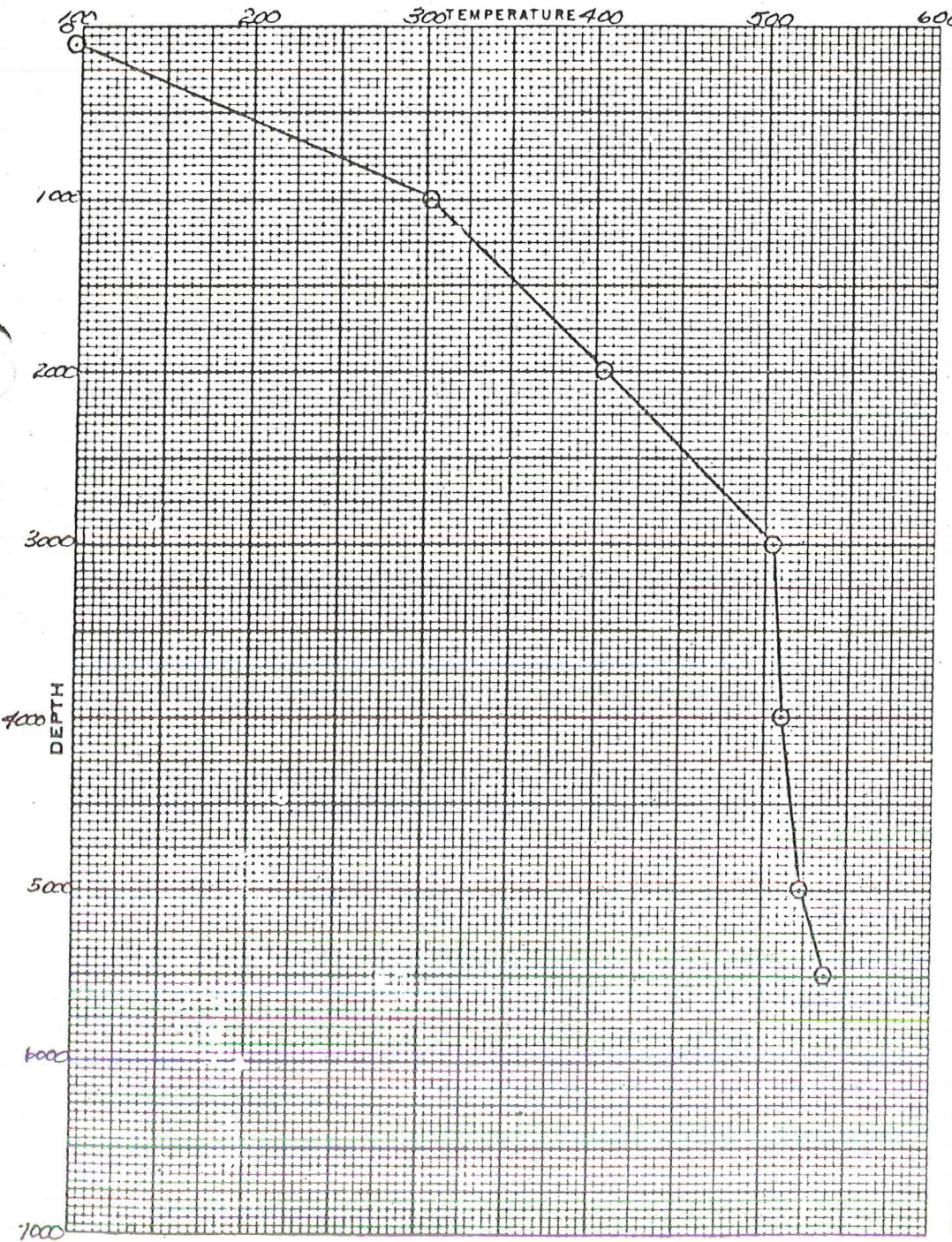
76

OWNER Union Oil Co. FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 12/19/75
 LINER DESCRIPTION: _____ ZERO POINT GL + 6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT 82° - 686° FAHR
 _____ SERIAL NO 10055

PURPOSE INTERFERENCE TEST MAX TEMP 536.7° F @ 5498'
 REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES.	GAUGE	BOMB	
CASING, PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	97.5		
1000	303.2		
2000	405.0		
3000	504.5		
4000	511.1		
5000	522.9		
5498	536.7		

BY: _____

76

UNION

GEO THERMAL DIVISION

DEL PYLE

DEC 18 1975

SUBSURFACE SURVEY

Field Work Sheet

B# 15-523 P/T

OWNER UNION oil & CNG FIELD VALLE Grande WELL NAME BACA # 15
 CASING 20" @ 210 ; 13 7/8 @ 1273 ELEV. 9117 DATE: 12-8-75
 LINER DESCRIPTION: ZERO POINT GL + 6
 DEPTH 5498

TUBING DETAIL:

PURPOSE Interference Test

REMARKS:
 Element 0-4000 PSI SN 7198 Clock 12hr 15T
 ELEMENT 82° - 686°F SERIAL NO. 10055 CLOCK 12hr 15T STABILIZATION PERIOD
 ENGAGE STYLUS P 1024 T 1021 DISENGAGE STYLUS P 1414 T 1410
 WELL HEAD 595
 PICKUP @ 5498 TIME ON BOTTOM 1207-1307 MAX. °F 538.1
 WELL STATUS Shot IN
 SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:
 RATE

P.S.I. Temp

TIME	DEPTH	DEFL.	P-T	GRAD.	COY	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
8:00	100	.267	597.9		-0.12	1048-1053	100	.251	98.2								
11:00	5000	.366	808.5		-0.01	1105	5000	1.393	522.9								
11:35	5000	.366	808.5		-0.01	1135	5000	1.393	522.9								
12:05	5000	.366	808.5		-0.01	1205	5000	1.393	522.9								
12:07	5498	.418	919.1		0	1207	5498	1.446	538.1								
12:37	5498	.418	919.1		0	1237	5498	1.446	538.1								
13:07	5498	.418	919.1		0	1307	5498	1.446	538.1								

COMMENTS: FAEIB Calibration check, w/ new DWL @ 2000 PSI @ 75°F
 Def - .924 COY PSI - 2004.2
 COY - .011
 COY DEP - .935

BY: *[Signature]* JB

76



DEL PYLE

GEOTHERMAL DIVISION JAN 6 1976

SUBSURFACE SURVEY

Field Work Sheet

B15-522-P14

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA-15
 CASING 20" @ 210'; 13 3/8" @ 1973' ELEV. 9177 DATE: 12-15-75
 LINER DESCRIPTION: 9 5/8" @ 2509 To T.D. OPEN HOLE ZERO POINT 6L+6'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT P-0-4000 P316 2198 12/17-14091 L-15
 ELEMENT T-825F-686°F SERIAL NO. 10055 CLOCK 12/17-12539-115 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1044 T-1044 DISENGAGE STYLUS P-1525 T-1525
 WELL HEAD 592 PSIG
 PICKUP @ 5498' TIME ON BOTTOM 1320-1420 MAX. °F
 WELL STATUS SHUT IN
 SHUT IN: 0722 hrs on 7/14/75 ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P. °	GRAD.	GRAD.	TIME	DEPTH	DEFL.	P. °	GRAD.	ID	TIME	DEPTH	DEFL.	P. °	GRAD.	ID
	100	.217	547.8		-.012	1250-1255	100	.045	96.2								
	5000	.365	806.4		-.001	1255-1300	5000	1.342	522.6								
	5498	.415	912.8		0	1300-1420	5498	1.445	537.3								

COMMENTS:

BY: JM JB CP

76

UNION

GEO THERMAL DIVISION DEL PYLE

SUBSURFACE SURVEY
Field Work Sheet

DEC 15 1975

B#15 S-20 P/T

OWNER UNION Oil Co. of Cal. FIELD Valle Grande WELL NAME BACH # 15
 CASING 20" @ 210 ; 13 3/8" @ 1273' ELEV. 9117 DATE: 12-2-75
 LINER DESCRIPTION: 9 7/8" @ 2509 T. TD = Open Hole ZERO POINT CL + 6
 DEPTH 5498

TUBING DETAIL:

PURPOSE Interference Test

REMARKS:

Element 0-4000 PSI SN 7198 Clock 12 hr 15 T

ELEMENT 82° - 686°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-8955 T0950 DISENGAGE STYLUS P1345-T1347

WELL HEAD 593 0-1000 T/R

PICKUP @ 5498 TIME ON BOTTOM 1152-1252 MAX. °F 537

WELL STATUS Shut in

SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:

RATE

Pressure

Temperature

TIME	DEPTH	DE L	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
	100	.267	598	-1012		1040	100	.055	99.5								
	1000	.286	639	-1.001		1055	1000	.677	302								
1110	3000	.294	655	-1.001		1110	3000	.999	405								
1126	3000	.308	685	-1.002		1126	3000	1.030	504								
1138	4000	.328	728	-1.002		1138	4000	1.352	511								
1150	5000	.365	806	-1.001		1150	5000	1.393	523								
1252	5498	.418	919	-0-		1152-1252	5498	1.440	536								
1257	5498	.418	919	-0-		1152-1257	5498	1.442	537								
1252	5498	.418	919	-0-		1152-1252	5498	1.442	537								

COMMENTS:

BY: [Signature]

76

GEO THERMAL DIVISION

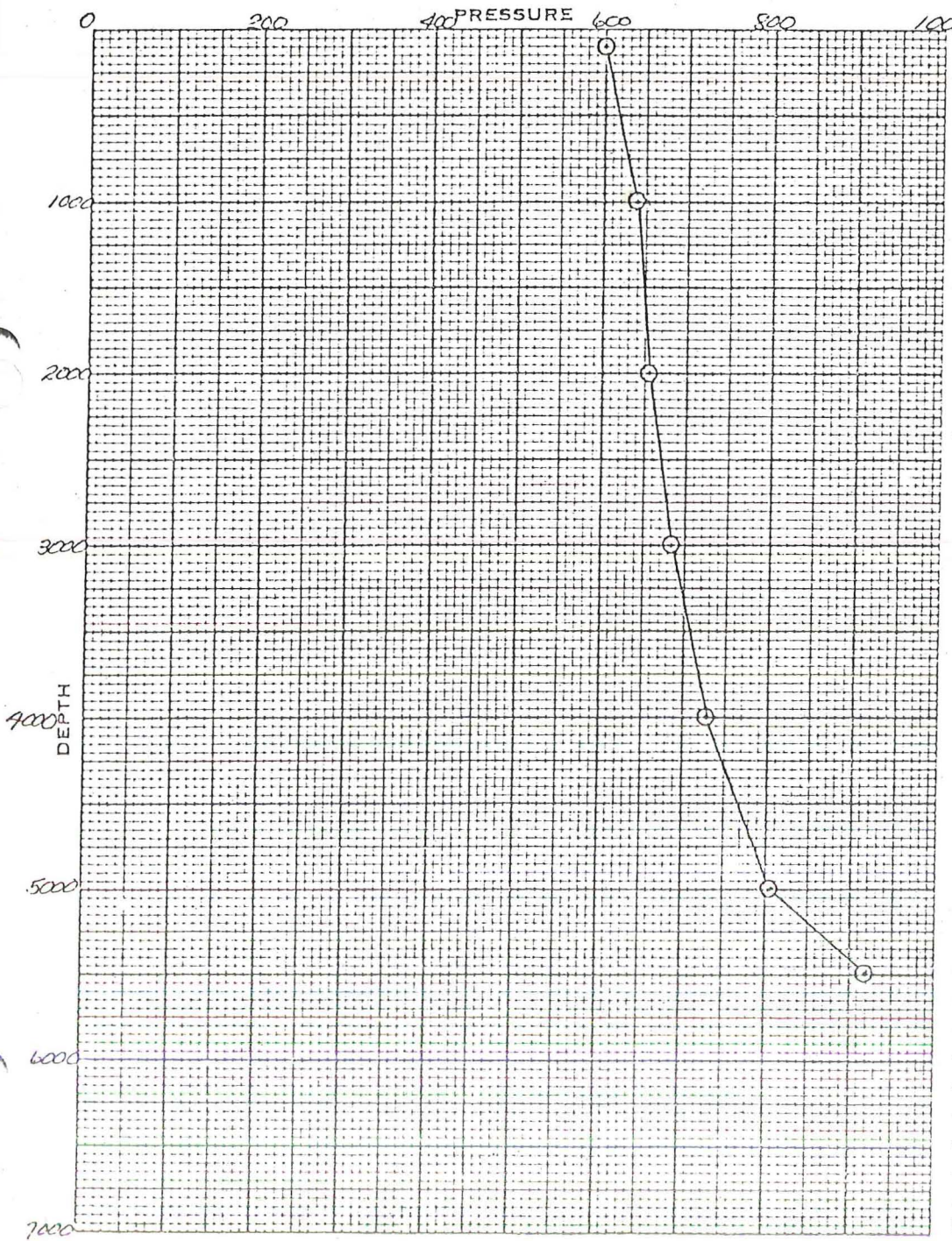
SUBSURFACE PRESSURE SURVEY

B15-520-PT

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 12-2-75
 LINER DESCRIPTION: _____ ZERO POINT G.L. +6'
 _____ DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT 0-4000 PSI
 _____ SERIAL NO 7198

PURPOSE Interference Test MAX TEMP 537 °F @ 5498'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESURES.	GAUGE	BOMB
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	598	
1000	639	
2000	655	
3000	685	
4000	728	
5000	806	
5498	919	

BY: _____

76

UNION

GEOHERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

B15-520-PT

OWNER Union Oil Co. of Calif. FIELD Valle Grande WELL NAME BACA #15
 CASING _____ ELEV _____ DATE 12-2-75
 LINER DESCRIPTION _____ ZERO POINT G.L. + 6'
 DEPTH 5498'

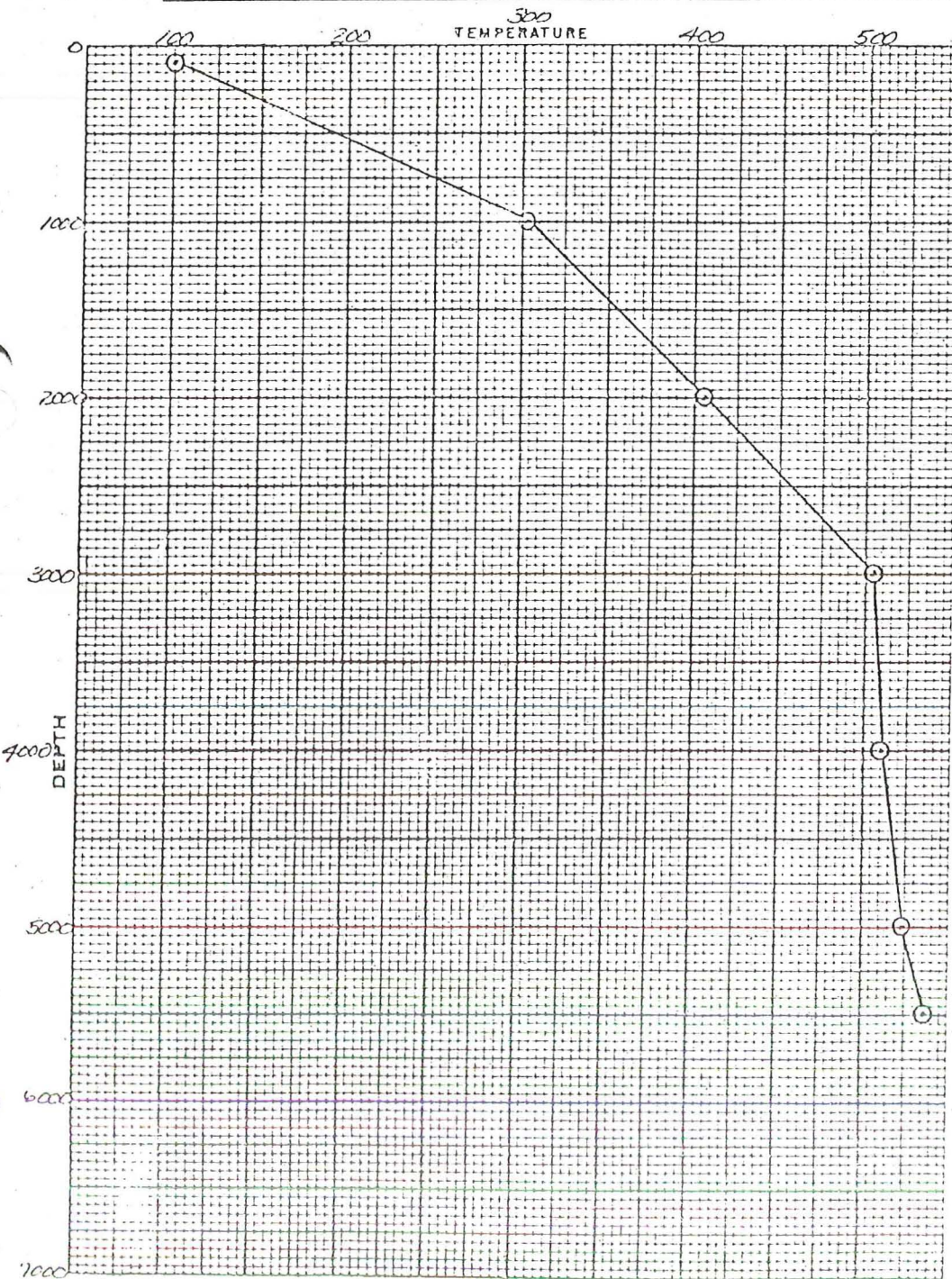
HOLE DESCRIPTION: _____ INSTRUMENT 82°-686° FAHR
 SERIAL NO 10055

PURPOSE _____ MAX TEMP 537 °F @ 5498'
 REMARKS _____

STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB
CASING PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	99.5		
1000	302		
2000	405		
3000	504		
4000	511		
5000	523		
5498	536		
5498	537		



BY:

76

UNION

DELL PYLE

GEO THERMAL DIVISION DEC 5 1975

SUBSURFACE SURVEY

Field Work Sheet

BIS 549 P/T

OWNER: UNION OIL COMPANY FIELD: VALLE GRANDE WELL NAME: BACH #15
 CASING: 20' AT 210', 13 3/8" 1375' ELEV. 9117' DATE: 11/21/75
 LINER DESCRIPTION: 9 5/8" 2509', 2509 - TD = OPEN HOLE ZERO POINT: CL +6'
 DEPTH: 5498'

TUBING DETAIL:

PURPOSE: INTERFERENCE TEST

REMARKS:

ELEMENT - 0-4000 PSI SN 7158 CLOCK 12 HR 15 T

ELEMENT 82°-6.86°F SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0924 T-0927 DISENGAGE STYLUS F-1346 T-1346

WELL HEAD 593 - 0-1000 T/B

PICKUP @ 5498 TIME ON BOTTOM 1201-1301 MAX. F 538.1

WELL STATUS SHUT IN

SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:

RATE

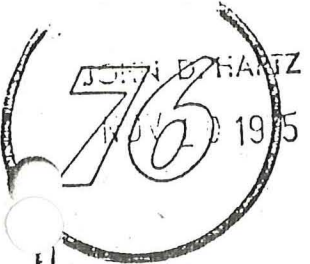
PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE						
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1052	110	.267	597.8		7.012	1052	110	.055	99.5		
1100	5110	.369	814.9		-1.001	1100	5110	1.396	523.8		
1130	5110	.369	814.9		-1.001	1130	5110	1.396	523.8		
1200	5110	.569	814.9		-1.001	1200	5110	1.396	523.8		
1201	5498	.420	923.4		0	1201	5498	1.446	538.1		
1231	5498	.420	923.4		0	1231	5498	1.446	538.1		
1301	5498	.420	923.4		0	1301	5498	1.446	538.1		

COMMENTS:

BY: J.A. R. D. D.



GEO THERMAL DIVISION

SUBSURFACE SURVEY Field Work Sheet

B15-519 F1

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 11/4/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT CL+6'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT: 0-4000 PSIG SN 7198 CLOCK 12 hr 15 TURN
 ELEMENT 82°-6.86°F SERIAL NO: 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0831 T 0834 DISENGAGE STYLUS P-1217 T 1217
 WELL HEAD 598 PSIG 0-1000 T/G
 PICKUP @ 5498' TIME ON BOTTOM 1036 - 1136 MAX. °F 538.7
 WELL STATUS
 SHUT IN: 7/14/75 ON PRODUCTION
 RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID
0919	100	.268	600.0		7.012	0919	100	.063	102.1								
0929	5110	.368	812.8		7.001	0929	5110	1.400	525.0								
0959	5110	.368	812.8		7.001	0959	5110	1.400	525.0								
1029	5110	.368	812.8		7.001	1029	5000	1.400	525.0								
1036	5498	.414	910.6		0	1036	5498	1.448	538.7								
1106	5498	.414	910.6		0	1106	5498	1.448	538.7								
1136	5498	.414	910.6		0	1136	5498	1.448	538.7								

COMMENTS:

BY: MU-13 OP CD

JOHN D. HARTZ
NOV 23 1975



GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15 S-23 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210' ; 13 3/8" AT 1273' ELEV. 9117' DATE: 11/4/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' - TD = OPEN HOLE ZERO POINT GLT6'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE INTERFERENCE TEST

REMARKS:

ELEMENT - 0 - 4000 PSI SN 7199 CLOCK - 12 hr. 15 TURN
 ELEMENT - 82° - 686°F SERIAL NO. CLOCK 12 hr. 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1013 T-1012 DISENGAGE STYLUS P-1350 T-1550 hrs
 WELL HEAD 598 PSI6 0-1000 T/C
 PICKUP @ 5498 TIME ON BOTTOM 1242 - 1252 MAX. °F 538.1
 WELL STATUS 0
 SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P - B	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID
10	100	.269	602.1		-0.012	1043	100	.057	100.1								
10	1000	.287	640.4		-0.001	1055	1000	.671	300.4								
1107	2000	.243	653.2		-0.001	1107	2000	.998	404.4								
1120	3000	.308	685.1		-0.002	1120	3000	1.330	504.4								
1133	4000	.327	725.5		-0.002	1133	4000	1.355	511.7								
1146	5000	.363	802.1		-0.001	1146	5000	1.396	525.8								
1157	5100	.371	819.1		-0.001	1157	5100	1.403	525.9								
1208	5200	.383	844.7		-0.001	1208	5200	1.413	528.7								
1219	5300	.391	861.7		0	1219	5300	1.423	531.6								
1230	5400	.407	895.7		0	1230	5400	1.434	534.7								
1241	5450	.411	904.3		0	1241	5450	1.440	536.4								
1252	5498	.412	906.4		0	1252	5498	1.446	538.1								

COMMENTS:



GEO THERMAL DIVISION

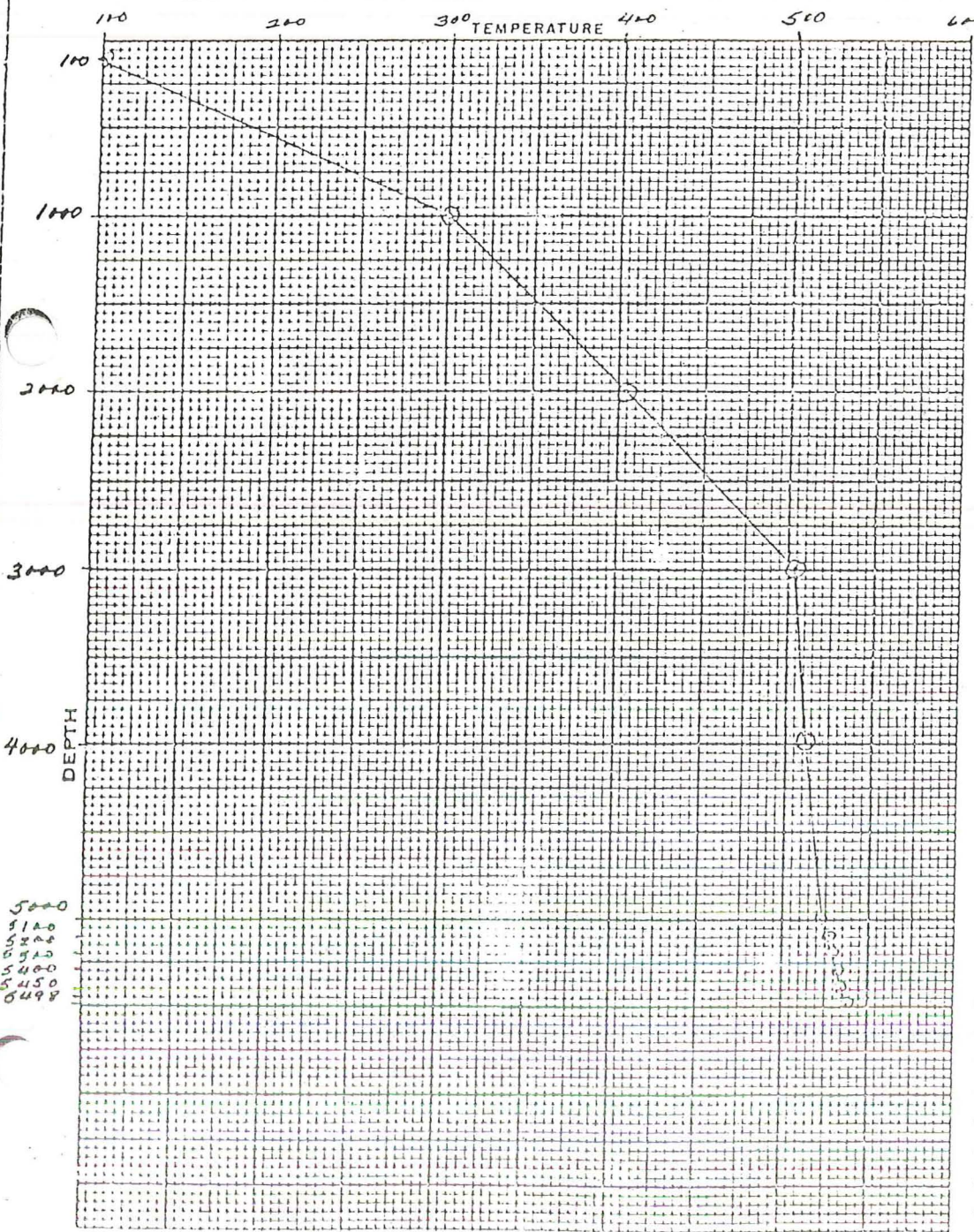
SUBSURFACE TEMPERATURE SURVEY

B15 518 T

OWNER UNION OIL COMPANY FIELD VALLE WELL NAME BACA # 15
 CASING 2 1/2" AT 310' 1 3/4" AT 1275' ELEV. 9117' DATE: 11/9/75
 LINER DESCRIPTION: 9 5/8" AT 2509' 2509' - TD = OPEN HOLE ZERO POINT CL + 6'
 DEPTH 5498'

HOLE DESCRIPTION: _____
 INSTRUMENT 83° - 6.56° FAHR
 SERIAL NO 10055

PURPOSE INTERFERENCE TEST MAX TEMP 538.1 °F @ 5498'
 REMARKS: _____



PRESSURES,	GAUGE	GORO
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	110.1		
1000	310.4		
2000	404.4		
3000	504.4		
4000	511.7		
5000	523.8		
5100	525.9		
5200	528.7		
5300	531.6		
5400	534.6		
5450	536.4		
5498	538.1		

JAH LB RD

GEOTHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY



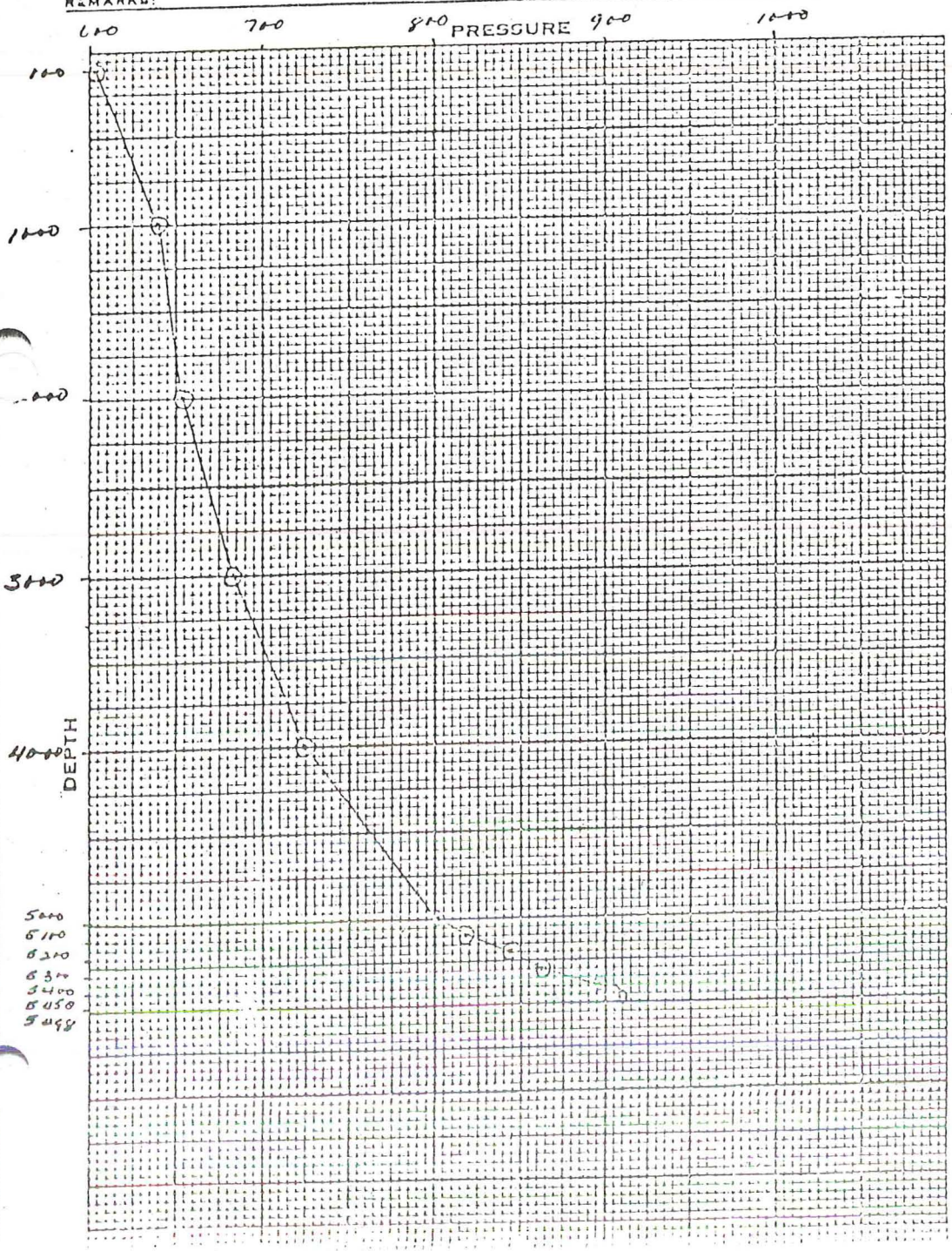
B15 518 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #13
 CASING 20" AT 310'; 13 3/8" AT 1273' ELEV. _____ DATE: 11/9/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509-TD = OPEN HOLE ZERO POINT CL+6'
 DEPTH 5498'

HOLE DESCRIPTION: INTERFERENCE TEST
 INSTRUMENT 0-4000 PSIG
 SERIAL NO 7198

PURPOSE _____
 MAX TEMP 538.1 °F @ 5498'

REMARKS: _____
 STABILIZATION PERIOD _____



PRESSURE	GAUGE	8013
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	602.1	-
1000	640.4	.042
2000	653.2	.013
3000	685.1	.032
4000	725.5	.042
5000	802.1	.077
5100	819.1	.175
5200	824.7	.256
5300	861.7	.170
5400	895.7	.340
5450	904.3	.172
5498	906.4	.044

76

UNION

JOHN D. HARTZ

NOV 06 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BIS 516 P/T

OWNER UNION OIL COMPANY FIELD VALLE CENDE WELL NAME BAC #15
 CASING 20" AT 210' ; 15" AT 1273' ELEV. 9117' DATE: 10/29/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD - OPEN HOLE ZERO POINT CL + 10'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0 - GOOD PSI SN 7198 CLOCK 12 hr 15 TURN
 ELEMENT - 82° - 6.86°F SERIAL NO. 10055 CLOCK 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-08246; T-0811 DIS-ENGAGE STYLUS P-1200 T-1200
 WELL HEAD 596 PSI
 PICKUP @ 5498' TIME ON BOTTOM 1012-1117 MAX. °F 539.0
 WELL STATUS
 SHUT IN: 7/14/75 ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE													
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	
0	14	.249	602.1		7.012	0901	14	.063	103.1									
09	5100	.366	808.5		7.001	0910	5100	1.402	525.6									
09	5100	.366	808.5		7.001	0940	5100	1.402	525.6									
1010	5000	.366	808.5		7.001	1010	5000	1.402	525.6									
1012	5498	.413	908.5		0	1012	5498	1.449	539.0									
1032	5498	.413	908.5		0	1032	5498	1.449	539.0									
1117	5498	.413	908.5		0	1117	5498	1.449	539.0									

COMMENTS:

BY:

76

UNION

DEL PYLE

GEO THERMAL DIVISION

NOV 7 1975

SUBSURFACE SURVEY

Field Work Sheet

B#15-515-P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BAA #15
 CASING 20" ATZIO; 13 3/4 AT 1273 ELEV. 9117' DATE: 10/23/75
 LINER DESCRIPTION: 9 5/8 A.I. 2509'; 2509 - TD = OPEN HOLE ZERO POINT 6246'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE GRADIENT SURVEY

REMARKS:

ELEMENT: 0-4000 PSI SN 7198 CLOCK-12 HR 15 TURN

ELEMENT 7-822°F-686°F SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0843 T-0838 DISENGAGE STYLUS P-1213 T-1212

WELL HEAD 600

PICKUP @ 5497' TIME ON BOTTOM 1100-1130 MAX. P 539.3

WELL STATUS STATIC

SHUT IN: 0722 HRS 7/14/75 ON PRODUCTION:

RATE

PSIG

TEMP

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
07	100	271	606.4			-	100	0.062	102	10							
09	1000	290	647			-	1000	0.690	306.4								
0925	2000	297	662			-	2000	1.011	408.4								
1010	3000	312	694			-	3000	1.336	506.1								
1022	4000	335	743			-	4000	1.357	512.3								
1053	5000	372	821			-	5000	1.403	526								
1130	5497	425	934			-	5497	1.450	539.3								

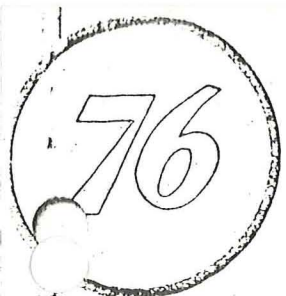
COMMENTS:

BY: [Signature]

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15-S15-PT



OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #15

CASING _____ ELEV _____ DATE 10/23/75

LINER DESCRIPTION: _____ ZERO POINT G.L. +6'

DEPTH 5498'

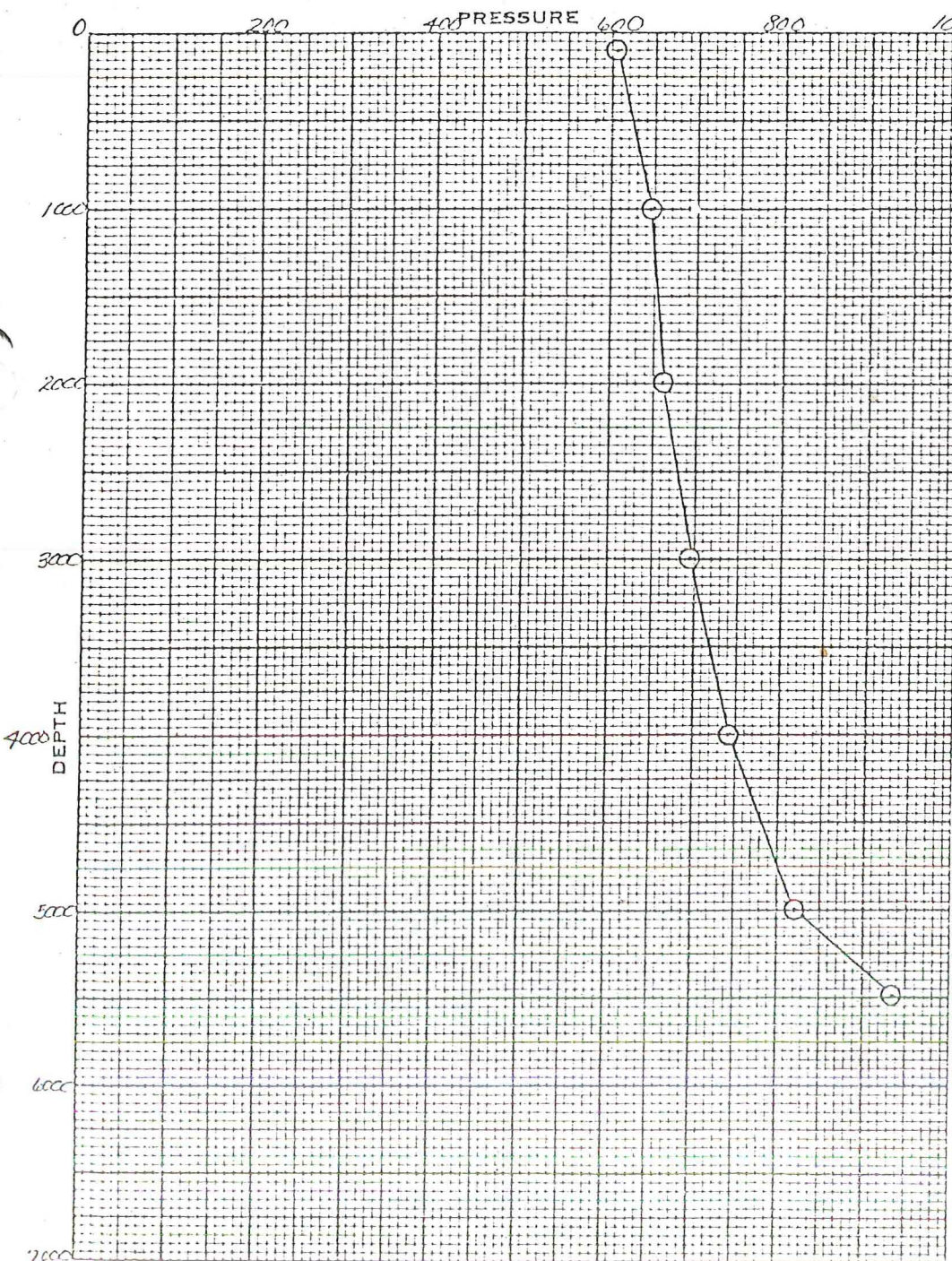
HOLE DESCRIPTION: _____ INSTRUMENT 0 - 4000 PSI

SERIAL NO 7198

PURPOSE _____ MAX TEMP 539.3 °F @ 5497'

REMARKS: _____

STABILIZATION PERIOD _____



PRESSURES.	GAUGE	BOHS
CASING. PSI		

DEPTH	PRESSURE	GRADIENT
100	606.4	
1000	647	
2000	662	
3000	694	
4000	743	
5000	821	
5497	934	

BY: J.M. & J.B.

GEO THERMAL DIVISION
SUBSURFACE TEMPERATURE SURVEY

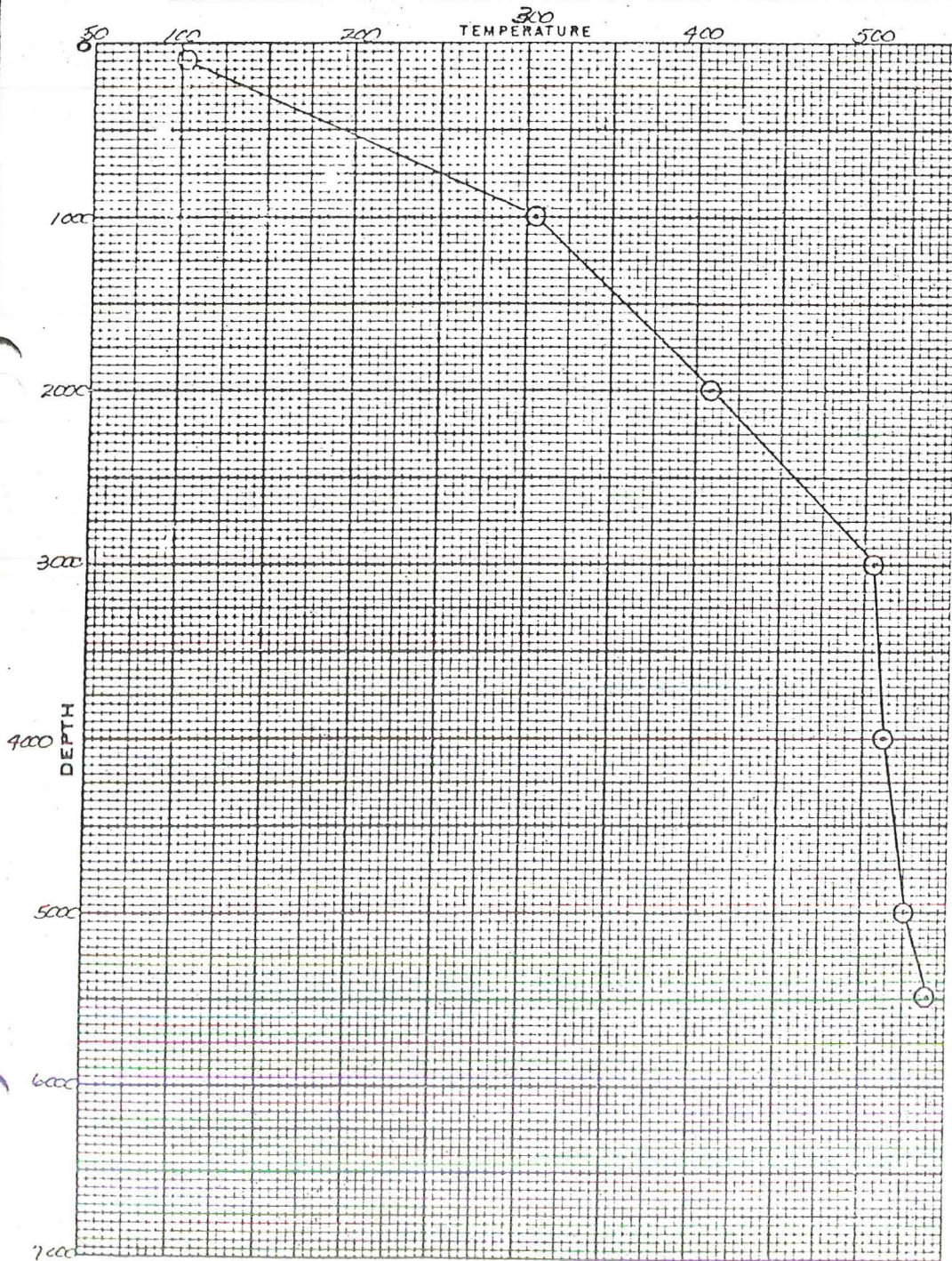
B15-S15-PT

76

OWNER Union Oil Company FIELD Valle Grande WELL NAME Baca #15
CASING _____ ELEV _____ DATE 10/23/75
LINER DESCRIPTION _____ ZERO POINT G.L. +6
DEPTH 5498'

HOLE DESCRIPTION: _____ INSTRUMENT _____ FAH
SERIAL NO 10055

PURPOSE _____ MAX TEMP 539.3 °F @ 5497'
REMARKS _____



STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB	
CASING PSI			
DEPTH	TEMP.	DEPTH	TEMP.
100	102		
1000	306.4		
2000	408.4		
3000	506.1		
4000	512.3		
5000	526		
5497	539.3		

BY: J.M. & J.B.

76

UNION

DEL PYLE

GEOHERMAL DIVISION OCT 22 1975

SUBSURFACE SURVEY

Field Work Sheet

B15-514-PT

OWNER Union Oil Co. FIELD Ulla Grande WELL NAME BACA #15
 CASING 20" @ 210'; 13 1/2" @ 127' ELEV. 9117' DATE: 10-8-75
 LINER DESCRIPTION: 9 5/8" @ 2509'; 2509 to TD = Open Hole ZERO POINT GL # 6'
 DEPTH 5498'

TUBING DETAIL:

PURPOSE

REMARKS:

Element - 0-4250 PSTG SP 7198 Clock - 12 hr 15 Turn

ELEMENT 82° - 686°F SERIAL NO. 10055 CLOCK 12 hr - 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-0952 T-0949 DISENGAGE STYLUS P-1725 T-1725

WELL HEAD 603

PICKUP @ 5498' TIME ON BOTTOM 1105-1635 MAX. °F 537.5

WELL STATUS Shot in

SHUT IN: 0722 hrs 7-14-75 ON PRODUCTION:

RATE

Pressure

Temperature

	DEPTH	DEFL.	P-T	GRAD.	CORR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1105	5498	.1131	921.6		7.001	1105	5498	1.1435	532.5								
1205	"	.421	-		-	-	-	1.1444	537.5								
1305	"	.421	921.6		7.001	-	-	1.1444	537.5								
1405	"	.421	-		-	-	-	-	-								
1505	"	.421	921.6		-	-	-	-	-								
1605	"	.421	-		-	-	-	-	-								
1705	"	.421	921.6		7.001	-	-	-	-								
1805	"	.421	-		-	-	-	-	-								
1905	"	.421	921.6		-	-	-	-	-								
2005	"	.421	-		-	-	-	-	-								
2105	"	.421	921.6		7.001	1635	5498	1.1444	537.5								

COMMENTS:

BY: Adi

76

UNION

DEL PYLE

SEP 25 1975

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-513 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 9/19/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT GL + C'
 DEPTH 5500'

TUBING DETAIL:

PURPOSE

REMARKS:

ELEMENT - 0-4250 PSIG SN 7198 CLOCK - 12 hr 15 TURN
 ELEMENT - 82° - 656°F SERIAL NO. 10055 CLOCK - 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0958; T-1001 DISENGAGE STYLUS P-1645; T-1645
 WELL HEAD 600 PSIG
 PICKUP @ 5500' TIME ON BOTTOM 1207-1607 MAX. °F 538.7
 WELL STATUS - SHUT IN
 SHUT IN: 0722 hrs 7/14/75 ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-°F	GRAD.	ID	TIME	DEPTH	DEFL.	°-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1104	100	.271	603.8		- .009	1104	100	.083	108.5								
1115	1000	.275	612.3		- .008	1115	1000	.683	304.1								
1127	2000	.290	644.1		0	1127	2000	1.030	414.2								
1140	3000	.305	676.8		0	1140	3000	1.338	506.7								
1153	4000	.328	724.6		0	1153	4000	1.360	513.2								
1205	5000	.362	796.6		+ .001	1205	5000	1.400	525.0								
1207	5500	.411	900.4		+ .001	1207	5500	1.446	538.1								
1237	5500	.414	906.8		+ .001	1237	5500	1.448	538.7								
1307	5500	.414	906.8		+ .001	1307	5500	1.448	538.7								
1337	5500	.414	906.8		+ .001	1337	5500	1.448	538.7								
1407	5500	.414	906.8		+ .001	1407	5500	1.448	538.7								
1437	5500	.414	906.8		+ .001	1437	5500	1.448	538.7								
1507	5500	.414	906.8		+ .001	1507	5500	1.448	538.7								
1537	5500	.414	906.8		+ .001	1537	5500	1.448	538.7								
1607	5500	.414	906.8		+ .001	1607	5500	1.448	538.7								

COMMENTS:

BY: JMA/JAB

116

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B15 513 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. _____ DATE: 9/18/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509'-TD = OPEN HOLE ZERO POINT GL +6'
 DEPTH 5500'

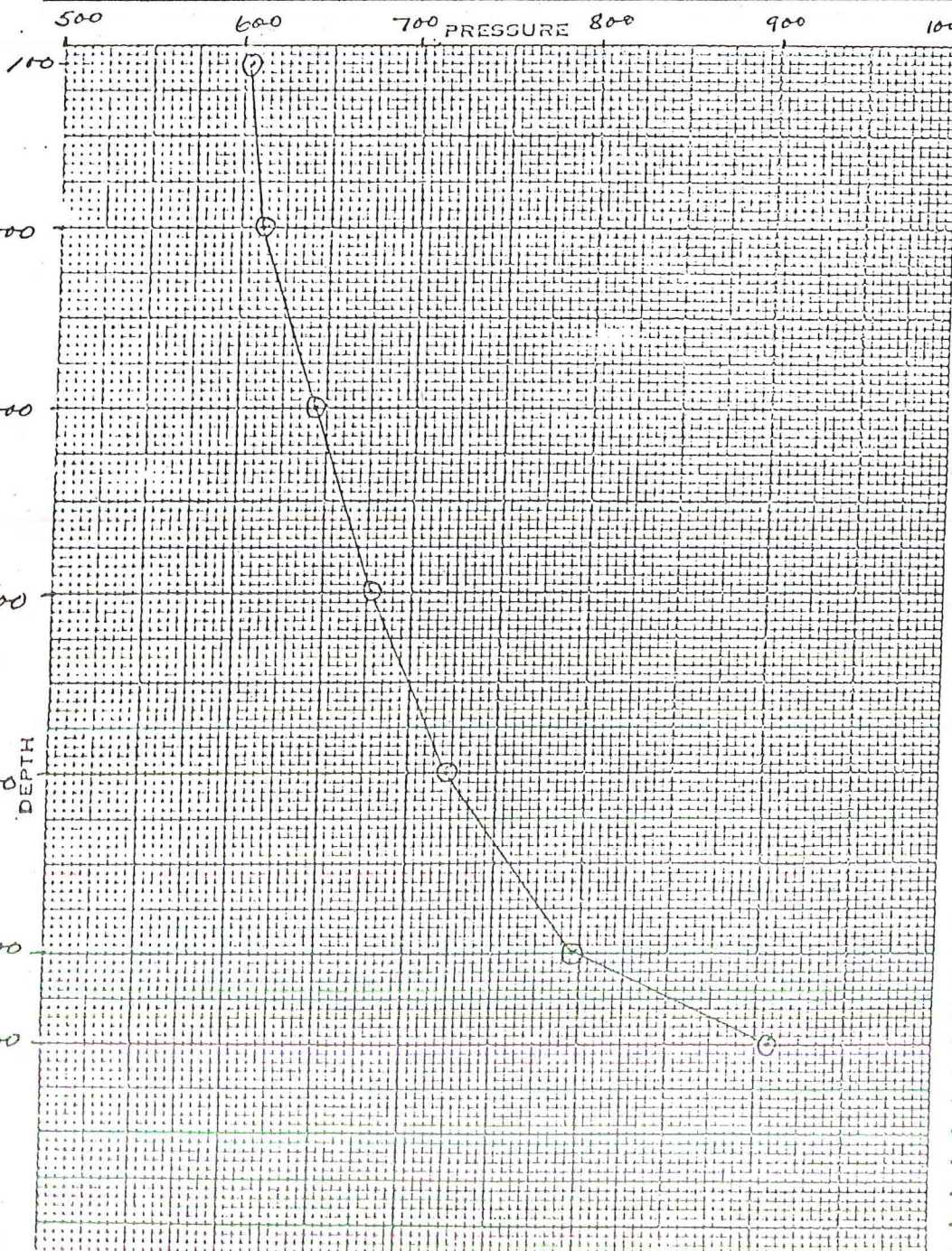
HOLE DESCRIPTION: _____

INSTRUMENT 0-4250
 SERIAL NO 7178

PURPOSE _____

MAX. TEMP 538.7 °F @ 5500'

REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	SCHEMATIC
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	603.8	
1000	612.5	.009
2000	644.1	.032
3000	676.8	.033
4000	724.6	.048
5000	796.6	.072
5500	900.4	.220
5500	906.8	
5500	906.8	
5500	906.8	
5500	906.8	
5500	906.8	
5500	906.8	
5500	906.8	

JW/JS

76

GEO THERMAL DIVISION

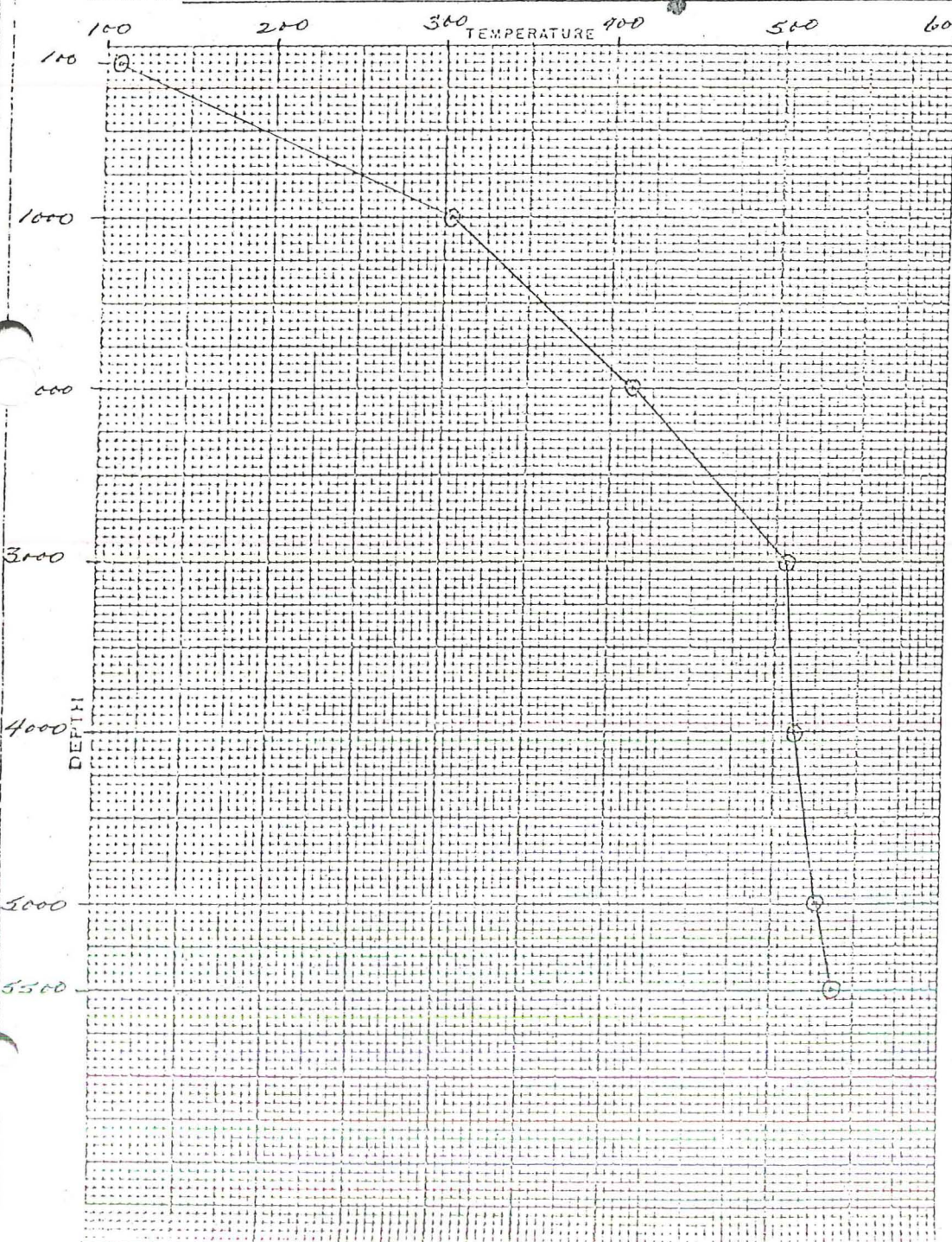
SUBSURFACE TEMPERATURE SURVEY

B15 513 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 9/18/75
 LINE DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT GL + 6'
 DEPTH 5500'

WELL DESCRIPTION: _____ INSTRUMENT 82°-686
 SERIAL NO 10055

PURPOSE _____ MAX TEMP. 538.7°F @ 5500
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	Gauge	Scale
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	108.5		
1000	304.1		
2000	411.2		
3000	506.7		
4000	513.2		
5000	525.0		
5500	538.1		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		
5500	538.7		

JH/LB

BY: _____



BACA-15

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B15-512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210', 13 3/8" AT 1273' ELEV. 9117' DATE: 8/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509 - TD = OPEN HOLE ZERO POINT CL + 12'
 DEPTH 5500'

TUBING DETAIL:

PURPOSE:

REMARKS:

ELEMENT 0-4250 PSIG SN 7198 CLOCK -12 hr 15 TURN
 ELEMENT 82° - 686° SERIAL NO. 10055 CLOCK -12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0930; T-0926 DISENGAGE STYLUS P-1737 - T-1737
 WELL HEAD SEE ATTACHED CHART
 PICKUP @ 5500' TIME ON BOTTOM 100 - 1600 MAX. °F 534.4
 WELL STATUS STATIC
 SHUT IN: 7/14/75 0722 hrs ON PRODUCTION:
 RATE

PRESSURE

PRESSURE CONT

TEMPERATURE C/W/T

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1000	5500	.411	900.4		+ .001	1653	2000	.296	650.9		0	1445	5500	1.433	534.4		
	"	.416	911.0		+ .001	1705	1000	.287	629.2		-.008	1500	"	1.433	534.4		
	"	.416	911.0		+ .001	1717	100	.280	612.3		-.008	15	"	1.433	534.4		
	"	.416	911.0		+ .001							30	"	1.433	534.4		
1100	"	.415	908.9		+ .001							45	"	1.433	534.4		
15	"	.415	908.9		+ .001							1600	"	1.433	534.4		
30	"	.416	911.0		+ .001							1615	5000	1.397	524.1		
45	"	.416	911.0		+ .001							1629	4000	1.359	512.9		
1200	"	.416	911.0		+ .001							1641	3000	1.335	505.8		
15	"	.416	911.0		+ .001	1000	5500	1.387	521.6			1653	2000	1.280	489.6		
30	"	.416	911.0		+ .001	15	"	1.433	534.4			1705	1000	.766	330.3		
45	"	.416	911.0		+ .001	30	"	1.433	534.4			1717	100	.180	139.1		
1300	"	.416	911.0		+ .001	45	"	1.433	534.4								
15	"	.415	908.9		+ .001	1100	"	1.433	534.4								
30	"	.415	908.9		+ .001	15	"	1.433	534.4								
45	"	.415	908.9		+ .001	30	"	1.433	534.4								
1400	"	.415	908.9		+ .001	45	"	1.433	534.4								
15	"	.414	906.8		+ .001	1200	"	1.433	534.4								
30	"	.413	904.7		+ .001	15	"	1.433	534.4								
45	"	.413	904.7		+ .001	30	"	1.433	534.4								
1500	"	.414	906.8		+ .001	45	"	1.433	534.4								
15	"	.414	906.8		+ .001	1300	"	1.433	534.4								
30	"	.414	906.8		+ .001	15	"	1.433	534.4								
45	"	.415	908.9		+ .001	30	"	1.433	534.4								
1600	"	.416	911.0		+ .001	45	"	1.433	534.4								
1615	5000	.367	796.6		+ .001	1400	"	1.433	534.4								
1629	4000	.330	728.8		0	15	"	1.433	534.4								
1641	3000	.309	684.3		0	30	"	1.433	534.4								

TEMPERATURE

COMMENTS:

BY: J. BOWEN

GEO THERMAL DIVISION

SUDDSURFACE TEMPERATURE SURVEY

1315 512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 26" AT 210" ; 13 3/4" AT 1273' ELEV. 917' DATE: 8/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD = OPEN HOLE ZERO POINT CL + 12
 DEPTH 5500

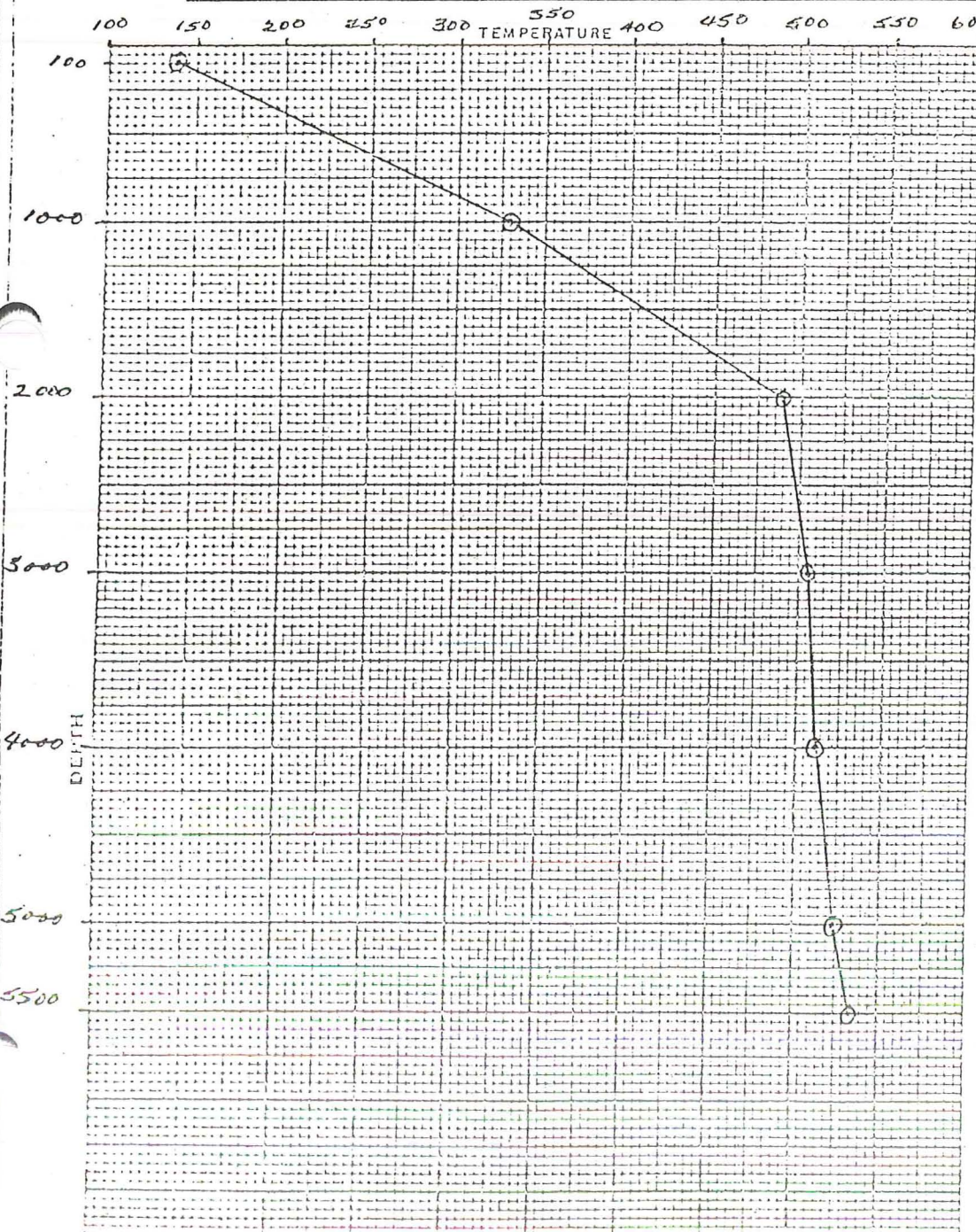
HOLE DESCRIPTION: _____

INSTRUMENT 82° - 686° F
 SERIAL NO 10055

PURPOSE _____

MAX TEMP. 534.4°F @ 5500

REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES.	GAUGE	SCHEM.
CASING, PSI		

DEPTH	TEMP.	DEPTH	TEMP.
100	139.1		
1000	330.3		
2000	487.6		
3000	505.8		
4000	512.9		
5000	524.1		
5500	534.4		

J. BOWEN

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

BIS 512 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANIX WELL NAME BACA #15
 CASING 20" AT 710' ; 13 3/8" AT 1273 ELEV. 9117' DATE: 8/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509'-TD = OPEN HOLE ZERO POINT GL + 12'
 DEPTH 5500'

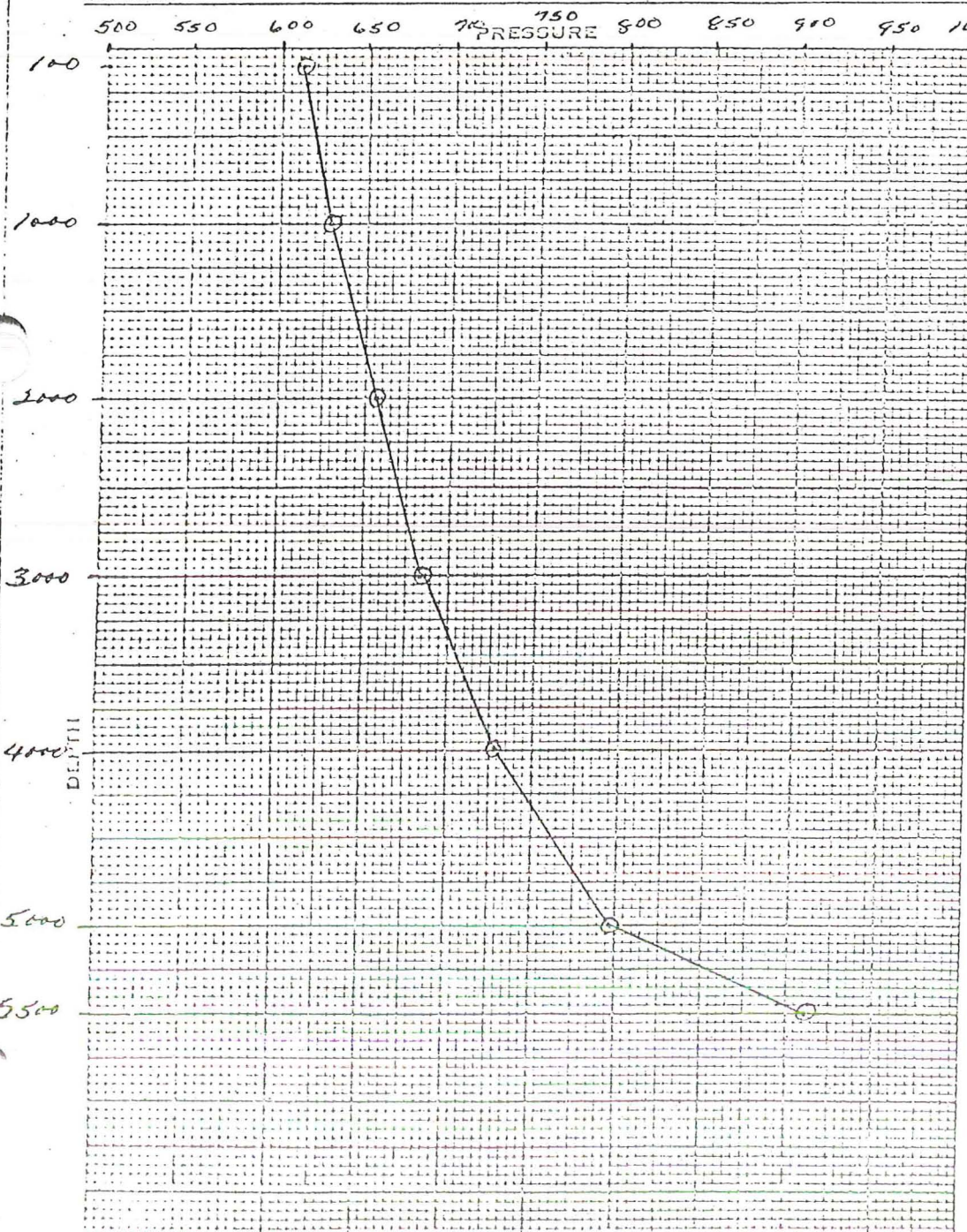
HOLE DESCRIPTION:

INSTRUMENT 0-4250 P.
 SERIAL NO 7198

PURPOSE

MAX. TEMP 534.4° @ 5500'

REMARKS:



PROBURIS.	GAUGE	SONE
CASING, PSI		

DEPTH	PRESSURE	GRADIENT
100	—	612.3
1000	—	629.2
2010	—	656.8
3000	—	684.3
4000	656.8	728.8
5000	629.2	796.6
5500	612.3	911.0

J. Bowen

76

UNION

JACK

GEO THERMAL DIVISION

SUBSURFACE SURVEY
Field Work Sheet

B15-5-11 P/T

OWNER UNION Oil Co. FIELD Valle GRANDE WELL NAME BACA # 15
 CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 7/31/75
 LINER DESCRIPTION: 9 3/8" AT 2509'; 2509' - TO = OPEN HOLE ZERO POINT GL HA'
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT 0-4250 PSIG SN-7198 CLOCK-12 HR 15 TURNS
 ELEMENT 82°-686° SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0857/T-0859 DISENGAGE STYLUS P-1130 T-1131
 WELL HEAD 603 PSIG 0-1000 T/G
 PICKUP @ 5500 TIME ON BOTTOM 0931-1103 MAX. °F 534.1
 WELL STATUS STATIC
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	CORR	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0731-1007	5500	.404	886		+ .001	"	5500	1.432	534.1								
0809	5000	.354	780		+ .001	"	5000	1.392	522.9								
0830	5100	.362	797		+ .001	"	5100	1.394	523.2								
0851	5200	.372	818		+ .001	"	5200	1.403	526.0								
0942-1057	5300	.382	839		+ .001	"	5300	1.415	529.3								
0853-1103	5400	.394	864.4		+ .001	"	5400	1.425	532.1								

COMMENTS:

BY: JM HB



UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY
Field Work Sheet

13-15 5-10 P/

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
CASING 20" AT 210'; 13 3/8" AT 1273' ELEV. 9117' DATE: 7/25/75
LINER DESCRIPTION: 9 5/8" AT 2509'; 2509' - TD = OPEN HOLE ZERO POINT GL + 12'
DEPTH 5500

TUBING DETAIL:

PURPOSE GRADIENT

REMARKS:

ELEMENT - 0-4250 PSIG SN - 7198 CLOCK - 12 HR 15 TURN
ELEMENT - 82°-686° SERIAL NO. 10055 CLOCK - 12 HR 15 TURN STABILIZATION PERIOD
ENGAGE STYLUS P-1015; T-1019 DISENGAGE STYLUS P-1326; T-1326
WELL HEAD 598 PSIG 0-1000 T/R
PICKUP @ 5500' TIME ON BOTTOM 1235-1245 MAX. °F 533.5
WELL STATUS STATIC
SHUT IN: 7/14/76 0722 HRS ON PRODUCTION:
RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
05-1115	100	.279	620.8	0	-008	"	100	.163	134.2								
07-1115	1000	.287	631.4	.012	-008	"	1000	.780	309.6								
09-1115	1500	.290	644.0	.025	-004	"	1500	.893	370.8								
11-1115	2000	.298	661.0	.034	0	"	2000	1.270	486.7								
01-1211	3000	.312	690.7	.030	0	"	3000	1.326	503.2								
02-1222	4000	.333	735.2	.044	0	"	4000	1.350	510.2								
04-1234	5000	.369	811.4	.076	+001	"	5000	1.385	520.6								
05-1245	5500	.416	911.0	.199	+001	"	5500	1.430	533.5								

COMMENTS:

BY: JM JB

76

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B-15 5-10 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BADA #15
 CASING 20" AT 310' ; 13 3/8" AT 1273' ELEV. 9117 DATE 7/25/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' TD = OPEN HOLE ZERO POINT C.L. + 12'
 DEPTH 5500

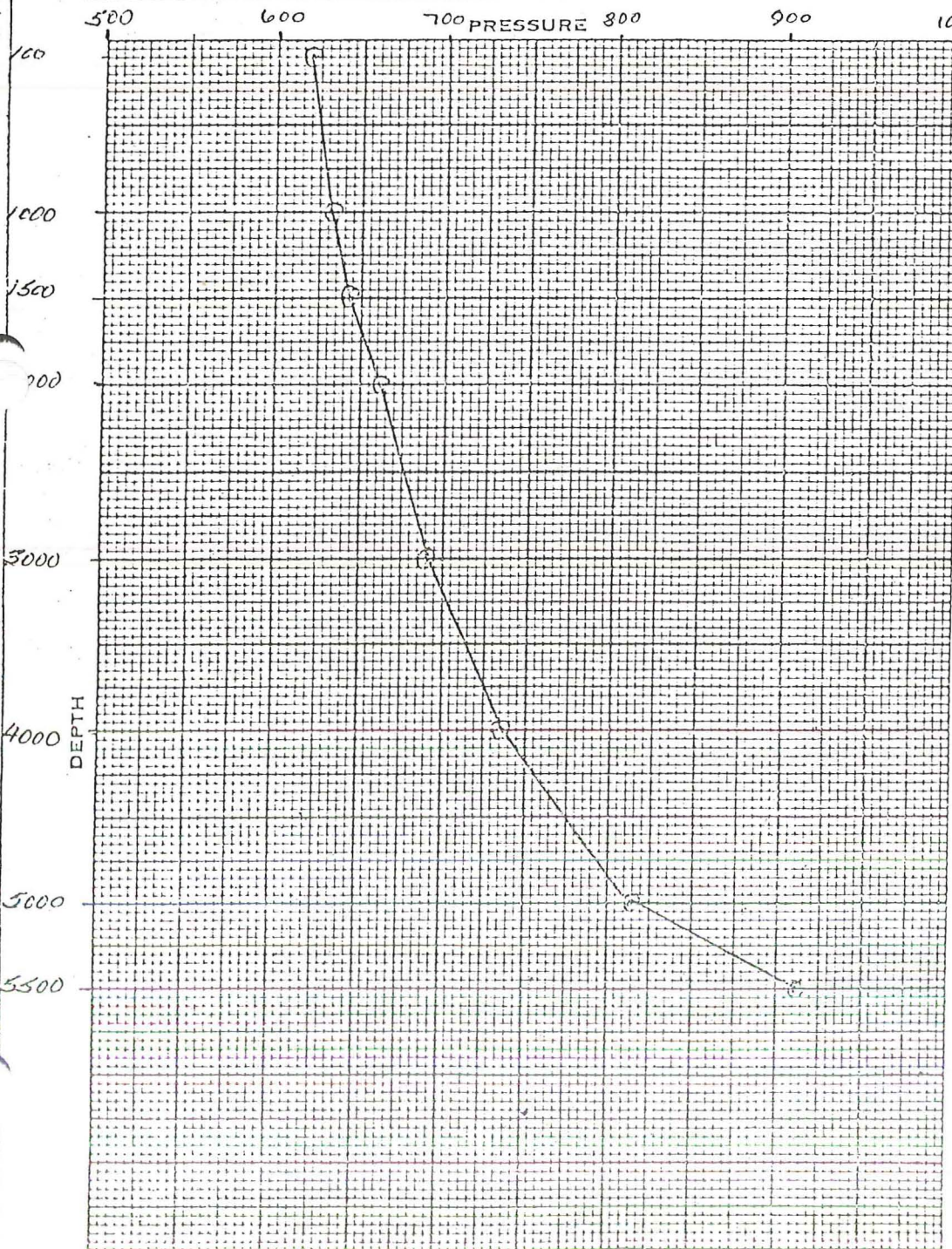
HOLE DESCRIPTION:

INSTRUMENT 0-4250 PS
 SERIAL NO 7198

PURPOSE GRADIENT

MAX TEMP 533.5°F @ 5500

REMARKS:



PRESURES.	GAUGE	BOND
CASING, PSI	<u>558</u>	

DEPTH	PRESSURE	GRADIENT
100	620.8	0
1000	631.4	.012
1500	644.0	.025
2000	661.0	.034
3000	690.2	.030
4000	735.2	.044
5000	811.4	.076
5500	911.0	.199

JM + JB

BY:

GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

13-15 S-10 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15
 CASING 20" AT 210', 13 3/8" AT 1273' ELEV. 9117 DATE: 7/25/75
 LINER DESCRIPTION: 9 5/8" AT 2509 ; 2509-TD=OPEN HOLE ZERO POINT 6.4 + 12
 DEPTH 5500'

HOLE DESCRIPTION: _____

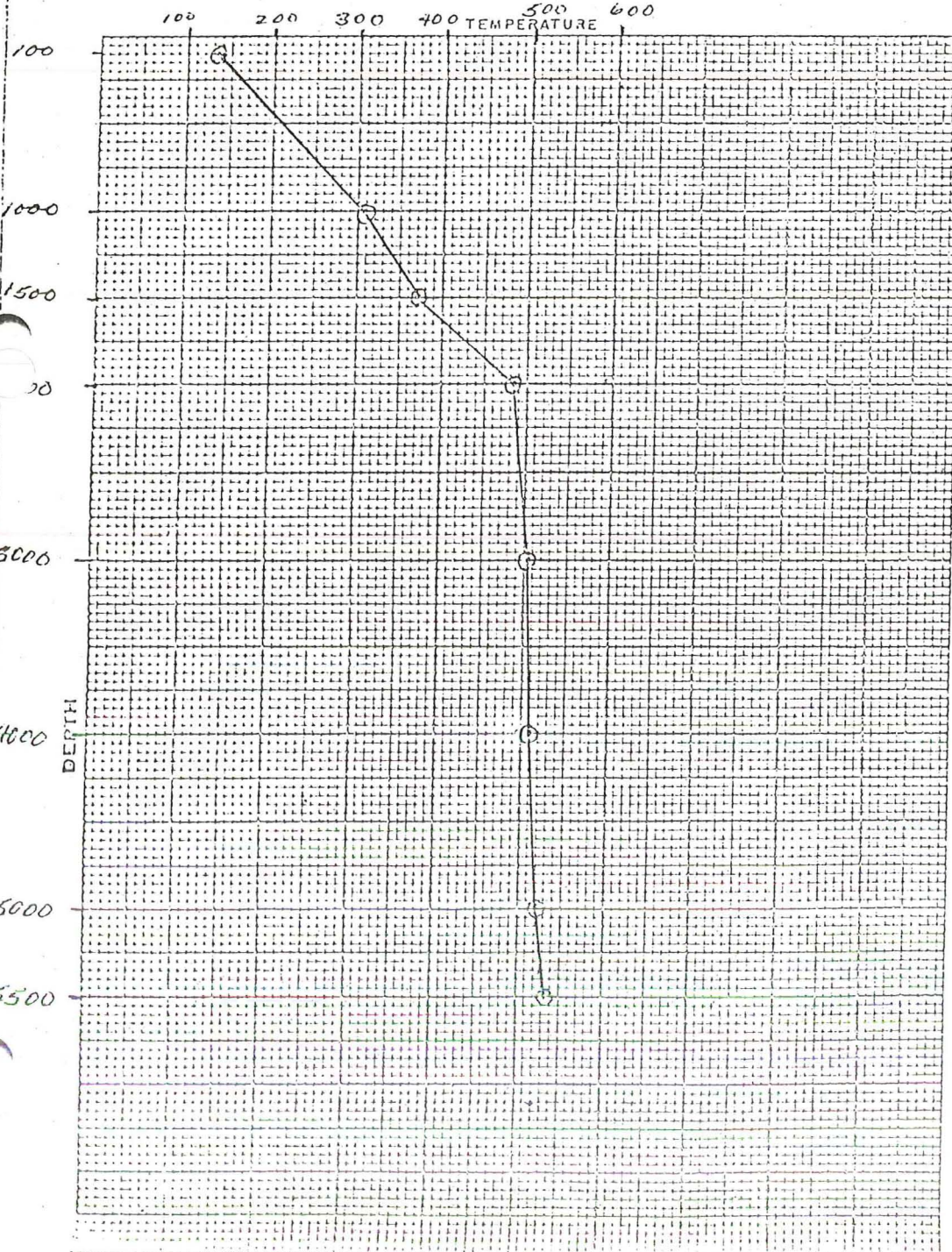
INSTRUMENT 82° - 686° FAH.
 SERIAL NO 10055

PURPOSE GRADIENT

MAX TEMP. 533.5°F @ 5500

REMARKS: _____

STABILIZATION PERIOD _____



PRESSURE	GAUGE	BOB
	598	

DEPTH	TEMP.	DEPTH	TEMP.
100	134.2		
1000	309.5		
1500	370.8		
2000	486.7		
2000	503.2		
4000	510.2		
5000	520.4		
5500	533.5		

JH JB

BY: _____

76

UNION

Jack

GEOTHERMAL DIVISION

SUBSURFACE SURVEY B# 15-59-P/T
Field Work Sheet

OWNER UNION Oil Co. Calif. FIELD Valle Grande
WELL NAME BACA # 15
CASING 20" @ 210'; 13 3/8" @ 1273' ELEV. ?
DATE: 7/23/75
LINER DESCRIPTION: 9 5/8" @ 2509'
ZERO POINT GL + 12'
2509 - T.D. OPEN HOLE
DEPTH 5500'

TUBING DETAIL:

PURPOSE Shut in build up

REMARKS:

P-O-4250 7198 12 hr. 13375 L 15
ELEMENT T-82-686 SERIAL NO. 10055 CLOCK 12 hr. 1409/L TURN 15 STABILIZATION PERIOD
ENGAGE STYLUS T-1202/P-1207 DISENGAGE STYLUS P&T-1434
WELL HEAD 599
PICKUP @ 5500 TIME ON BOTTOM 1236-1336 MAX. °F 530.69
WELL STATUS SHUT IN
SHUT IN: 7/14/75 0722 hrs. ON PRODUCTION:
RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
12	5500	.41	906.8	±.001	1236	"	1.420	530.7								
3	5500	.41	906.8	±.001	1306	"	1.420	530.7								
3	5500	.41	906.8	±.001	1336	"	1.420	530.7								

COMMENTS:

BY: J.M. H.B.

JACK

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

BH15-58-PT

OWNER UNION OIL CO. CALIF. FIELD VALLE GRANDE WELL NAME BAWA 7115
 CASING 20" @ 210' 1 1/2" ELEV. ? DATE: 7/13/75
 LINER DESCRIPTION: 9 5/8" @ 250' ZERO POINT 61712'
2509' - T.D. OPEN HOLE DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

P-5-4250 7195 1010 13375 L 15
 ELEMENT T-542-136 SERIAL NO. 10055 CLOCKW/5 14091 TURN/5 STABILIZATION PERIOD
 ENGAGE STYLUS P-544 T-542 DISENGAGE STYLUS P-1015 T-1019
 WELL HEAD 578 0-60070
 PICKUP @ 5500 TIME ON BOTTOM 0921-1091 MAX. °F 527
 WELL STATUS STATIC ALMOST
 SHUT IN: 7/14/75 @ 792 HRS ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

PRESSURE					TEMPERATURE					
TIME	DEPTH	DEFL.	P-T	GRAD.	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
21	5500	.376	527.4			5500	1.405	526.4		
10	5500	.401	529.2			5500	1.407	527		
10-1	5500	.401	529.2			5500	1.407	527		

COMMENTS:

BY: OMA O.R. U.P.

76

UNION

J HARTZ

GEOTHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B# 15-57-P/T

OWNER UNION Oil Co. of Calif FIELD Valle Grande WELL NAME BACA #15
 CASING 20" @ 210'; 13 7/8" @ 1273' ELEV. ? DATE: 7/16/75
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT GL + 12'
2509' - T.D. - OPEN HOLE DEPTH

TUBING DETAIL:

PURPOSE Shut in Build up

REMARKS:

P-0-4250 PSIG 7198 12hr - 13375L 15
 ELEMENT T-82-686°F SERIAL NO. 10055 CLOCK 12hr 14091L TURN/STABILIZATION PERIOD
 ENGAGE STYLUS P-1038 T-1423 DISENGAGE STYLUS P-1035 T-1423
 WELL HEAD 578 PSIG
 PICKUP @ 5500' TIME ON BOTTOM 1205-1305 MAX. °F 518.2
 WELL STATUS SHUT IN
 SHUT IN: 7/14/75 @ .0722 hr/SON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	/D	TIME	DEPTH	DEFL.	P-T	GRAD.	/D	TIME	DEPTH	DEFL.	P-T	GRAD.	/D
057-1147	100	.260	581	0	0	"	100	.303	181	0							
09	1000	.262	585	.004	0	"	1000	.820	347	.184							
76	2000	.265	591	.006	0	"	2000	1.273	488	.141							
31-1141	3000	.279	621	.030	0	"	3000	1.293	493	.005							
42-1152	4000	.299	663	.042	0	"	4000	1.313	499	.006							
54-1204	5000	.332	733	.070	0	"	5000	1.343	508	.009							
1205	5500	.382	839	.212	+ .001	"	5500	1.369	516	.016							
1235	5500	.382	839	-	+ .001	"	5500	1.376	518	-							
1305	5500	.382	839	-	+ .001	"	5500	1.379	518.2	-							

COMMENTS:

BY: JM JB HB

76

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

B#15-37-P1T

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" @ 210' ; 13 3/8" @ 1273' ELEV. ? DATE: 7/16/75
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT GL+12'
2509' - T.D. OPEN HOLE DEPTH 5509'

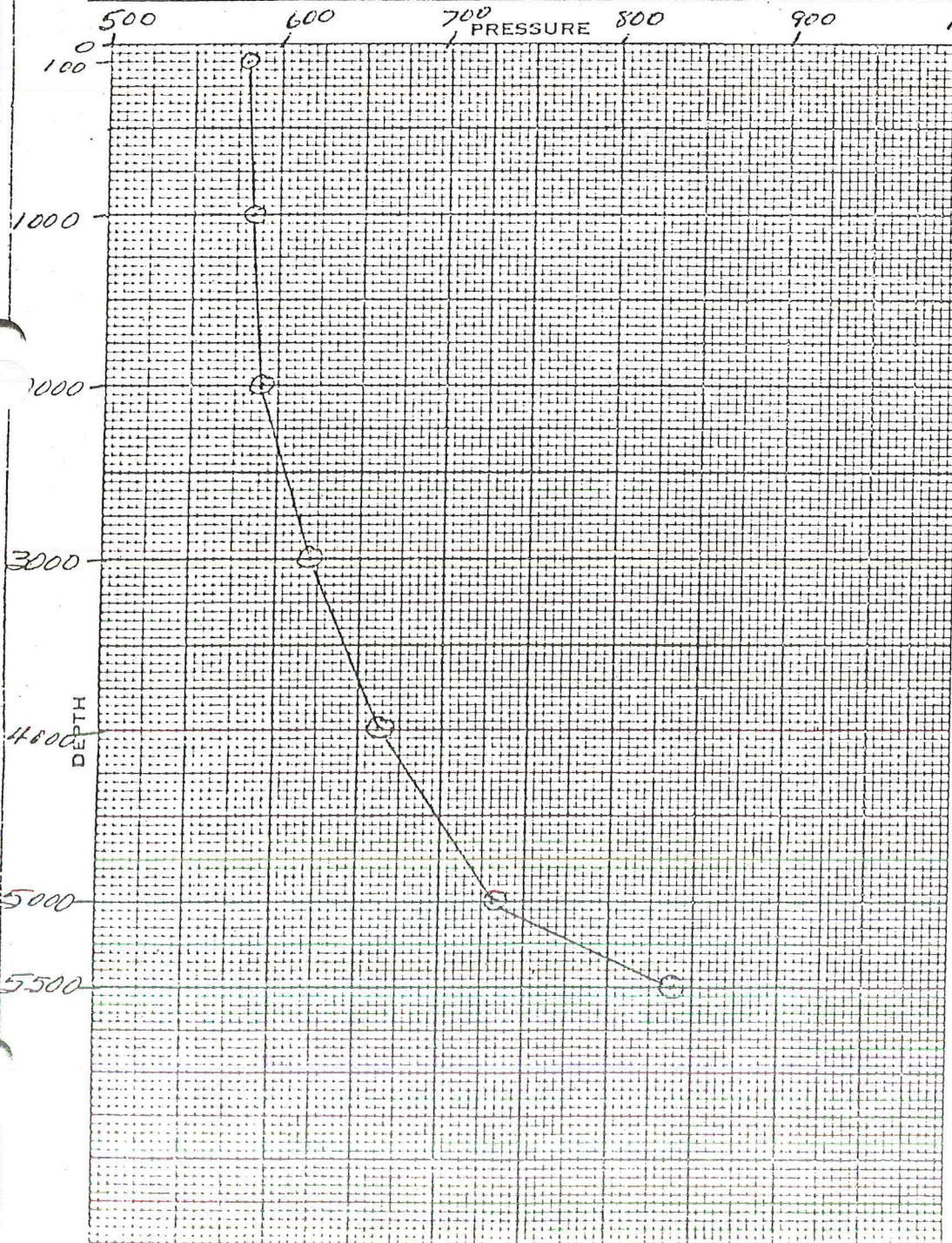
HOLE DESCRIPTION:

INSTRUMENT 0-4250
 SERIAL NO 7198

PURPOSE

MAX TEMP 518.2 °F @ 5500

REMARKS:



100' STABILIZATION PERIOD

PRESSURE	GAUGE	BCH
CASING. PSI	578	100' 580

DEPTH	PRESSURE	GRADIENT
100	581	0
1000	585	.004
2000	591	.008
3000	621	.030
4000	663	.042
5000	733	.070
5500 ^{ps}	839	.212

NOTES: MAXIMUM PSIC

BY: J.M. J.B. H.13

GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

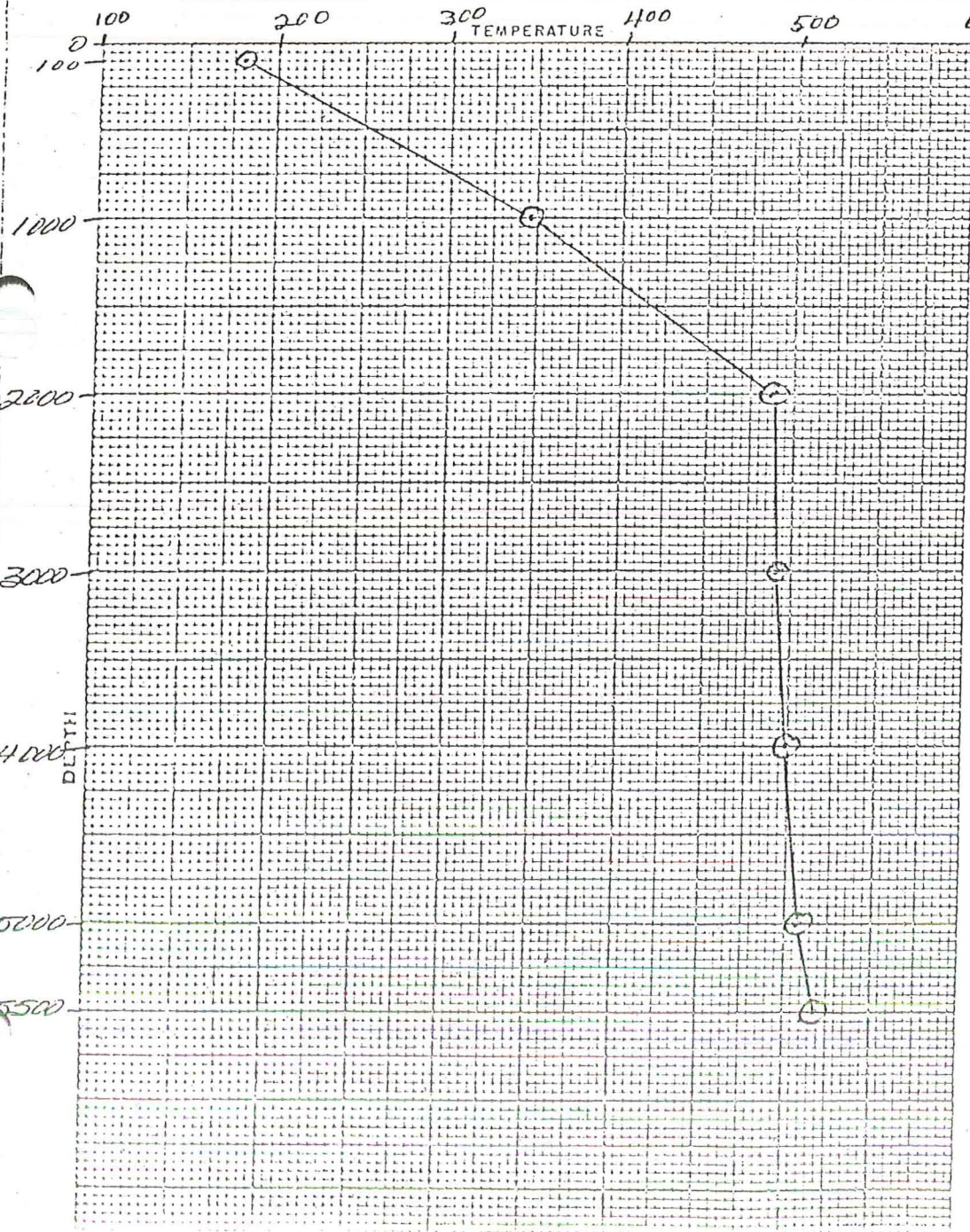
B#15-57-P1r

56

OWNER UNION OIL CO. OF CALIF FIELD VALLE GRANDE WELL NAME BRA#15
 CASING 20" @ 210' ; 13 3/4" @ 1973' ELEV. ? DATE: 7/16/75
 LINER DESCRIPTION: 9 5/8" @ 2509' ZERO POINT GLT 19'
2509' - T.D. - OPEN HOLE DEPTH 5509'

HOLE DESCRIPTION: _____ INSTRUMENT 820-69601 FAH.
 SERIAL NO 10055

PURPOSE _____ MAX TEMP. 518.2° F @ 5500'
 REMARKS: _____



PRESSURE	GAUGE	DEPTH
CASING, PSI	578	100' 58"

DEPTH	TEMP.	DEPTH	TEMP.
100	181		
1000	347		
2000	453		
3000	493		
4000	499		
5000	508		
5500	518.2		

NOTE: MAXIMUM OF _____

76

UNION

GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-6 PIT

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15

CASING 20" AT 210', 13 7/8" AT 1273' ELEV. ? DATE: 7/15/75

LINER DESCRIPTION: 9 5/8" AT 2509'; 2509'-TD OPEN HOLE ZERO POINT CL+12'

DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT - 0-4250 PSIG SN 7198 CLOCK 12 HR 15 TURN

ELEMENT - 82°-686°F SERIAL NO. 10055 CLOCK 12 HR 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1002 T-1000 DISENGAGE STYLUS P-1540; T-1540

WELL HEAD

PICKUP @ 5500' TIME ON BOTTOM 1030-1530 MAX. °F

WELL STATUS STATIC

SHUT IN: 7/14/75 0222 HRS ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
1030	5500	1.366	805.1		+ .001	1030	5500	1.328	503.8								
1100	"	1.366	805.1		+ .001	1100	"	1.329	504.1								
1150	"	1.366	805.1		+ .001	1150	"	1.330	504.4								
1200	"	1.366	805.1		+ .001	1200	"	1.331	504.7								
1230	"	1.366	805.1		+ .001	1230	"	1.333	505.2								
1300	"	1.366	805.1		+ .001	1300	"	1.335	505.8								
1330	"	1.366	805.1		+ .001	1330	"	1.337	506.4								
1400	"	1.366	805.1		+ .001	1400	"	1.338	506.7								
1430	"	1.366	805.1		+ .001	1430	"	1.340	507.3								
1500	"	1.366	805.1		+ .001	1500	"	1.342	507.9								
1530	"	1.367	807.2		+ .001	1530	"	1.344	508.5								

COMMENTS:

BY: JM JAS HTB

76



GEOHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-16 S-5 P/T

OWNER WALLEN OIL COMPANY FIELD VALLE GRANDE WELL NAME BALU #15
 CASING 20" AT 210' 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509 - TD OPEN HOLE ZERO POINT GLT + 12'
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BOTTOM HOLE BUILD UP

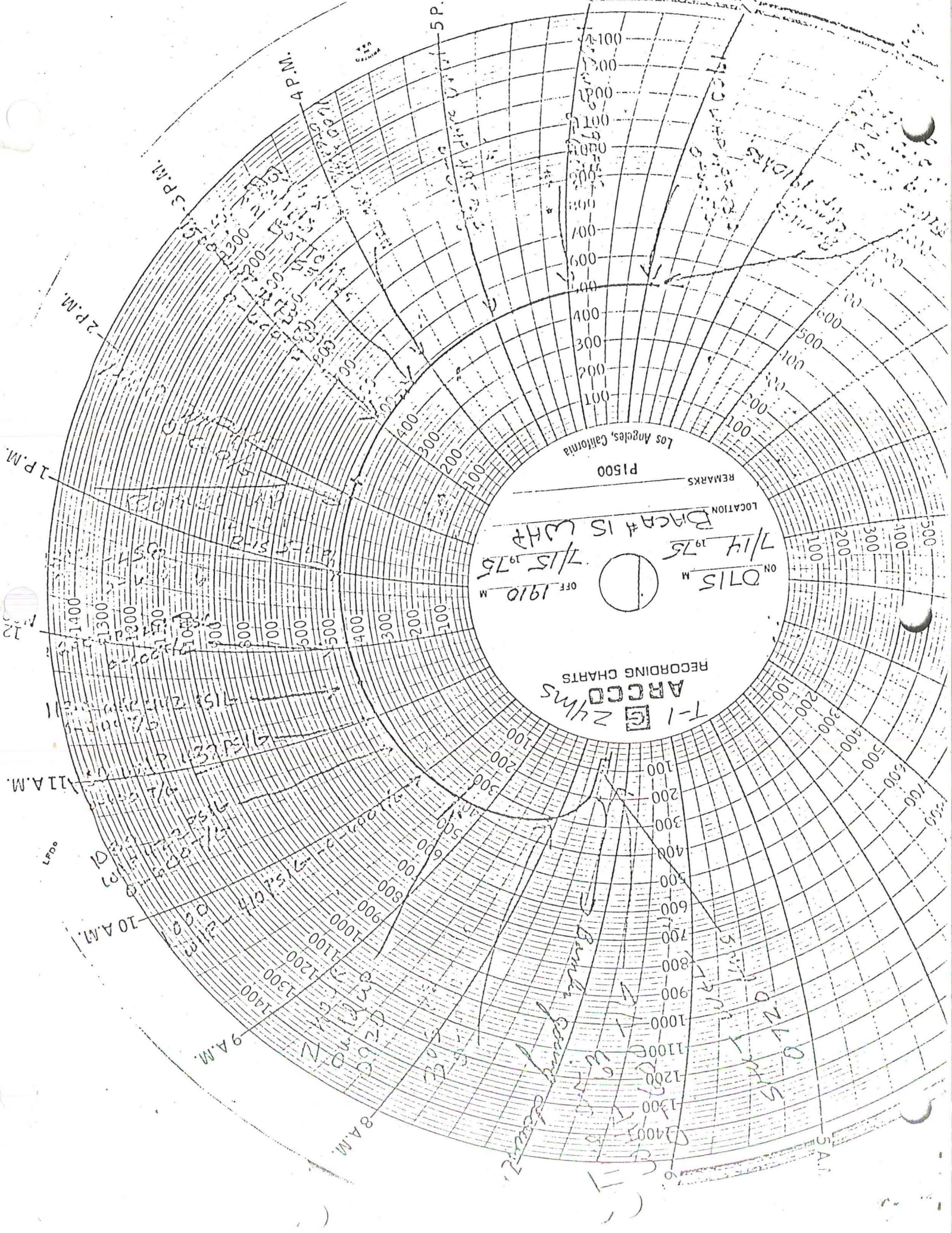
REMARKS:
 ELEMENT - 0-4250 PSIG SN 7198 CLCK-12HR 15 TURN
 ELEMENT - 82°-656°F SERIAL NO. 10055 CLOCK-12HR 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1509 ; T-1513 DISENGAGE STYLUS P-1938 ; T-1940
 WELL HEAD SEE CHART
 PICKUP @ 5500' TIME ON BOTTOM 1540-1910 MAX. °F 477.2°F
 WELL STATUS STATIC
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

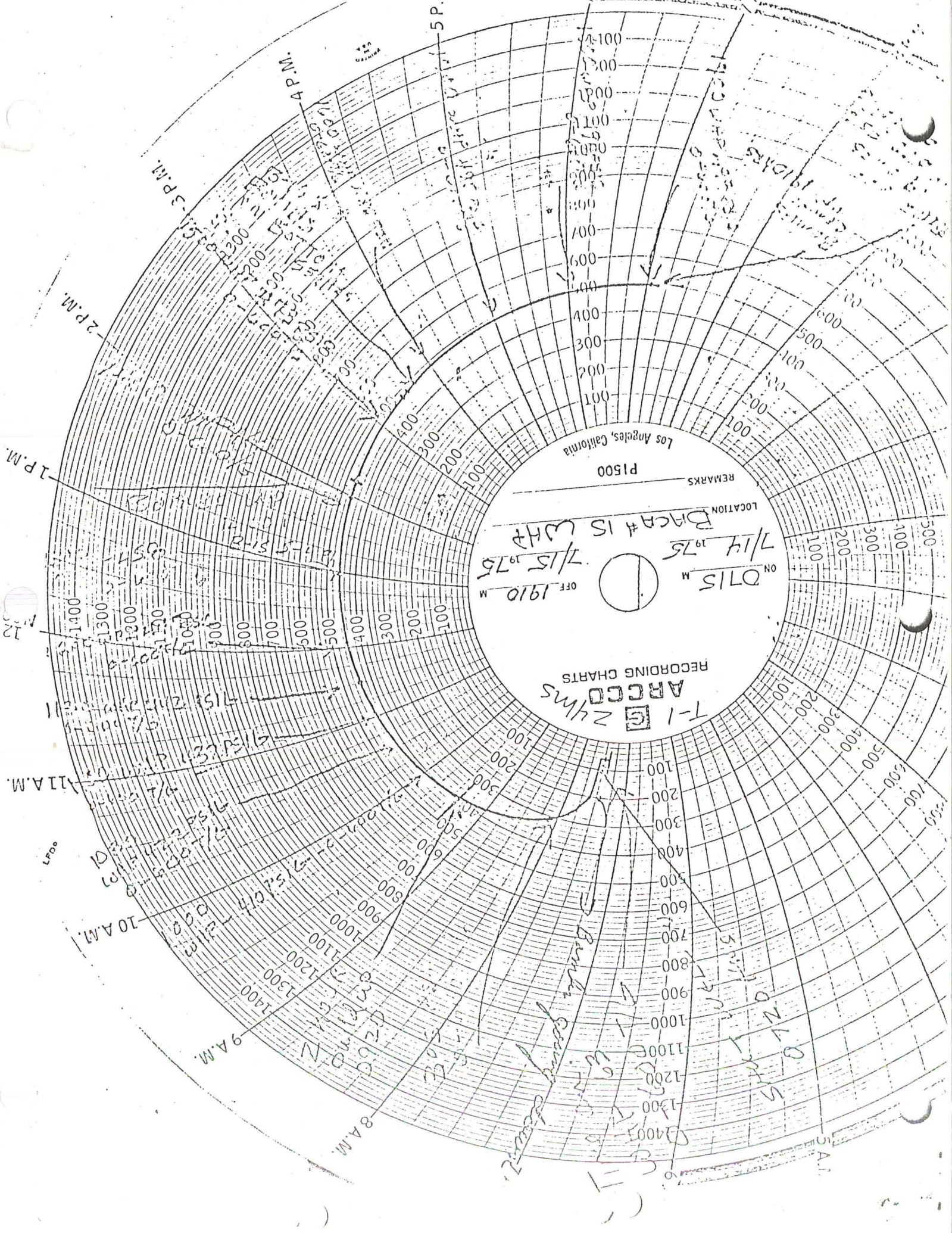
PRESSURE					TEMPERATURE											
DEPTH	DEFL.	P - F	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID	TIME	DEPTH	DEFL.	P - T	GRAD.	ID
1540	.518	703.4		0	1540	5500	1.211	469.2								
1610	.320	707.6		0	1610	"	1.214	470.1								
1640	.521	709.7		0	1640	"	1.218	471.0								
1710	.322	711.9		0	1710	"	1.221	472.2								
1740	.523	714.0		0	1740	"	1.225	473.1								
1810	.324	716.1		0	1810	"	1.229	474.6								
1840	.525	718.2		0	1840	"	1.235	476.3								
1910	.326	720.3		0	1910	"	1.238	477.2								

COMMENTS:



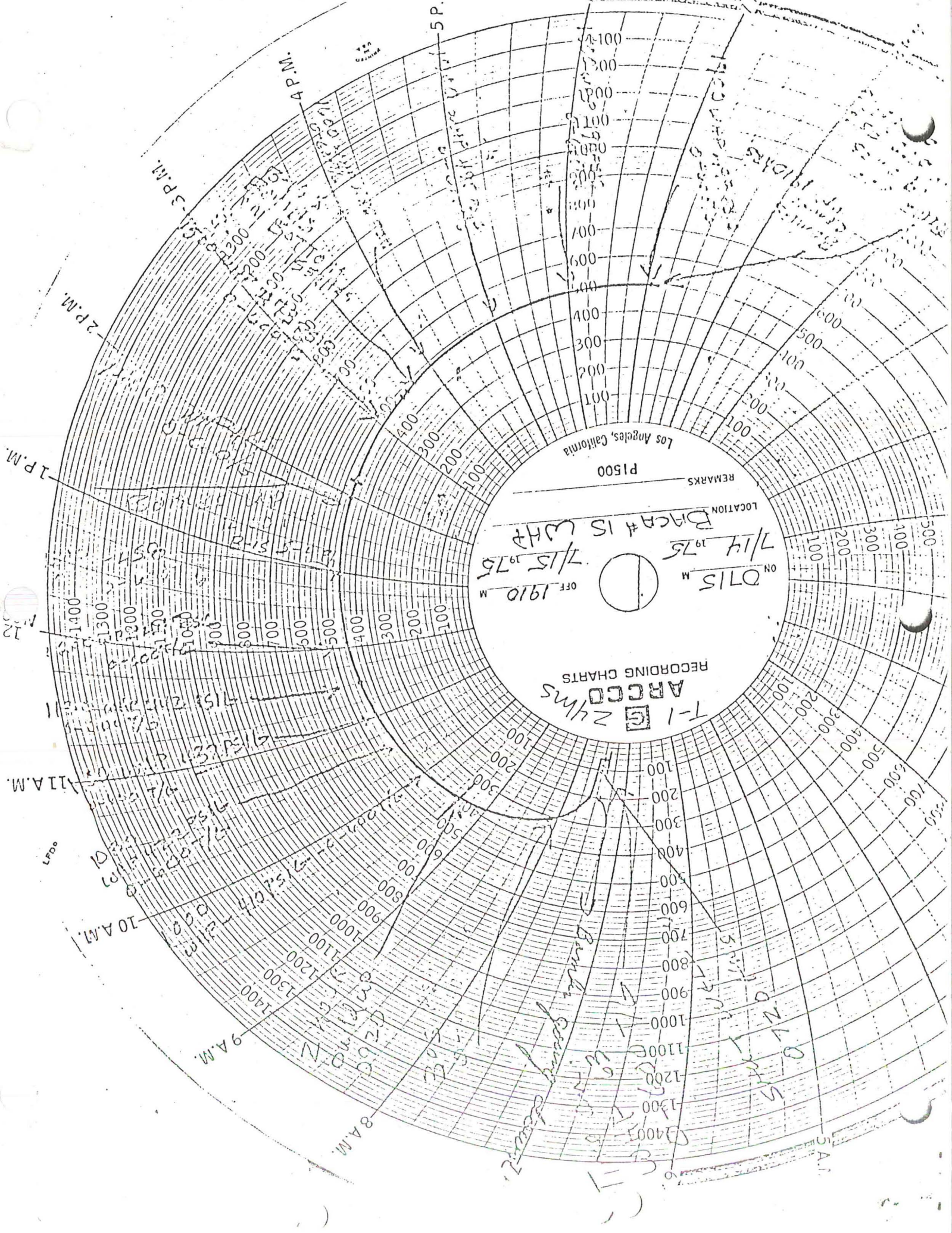
ARCO T-1 G 24ms RECORDING CHARTS

ON 7/15 1975
 OFF 1910 M
 LOCATION BACA # 15 WHP
 REMARKS P1500 Los Angeles, California



ARCO T-1 G 24ms RECORDING CHARTS

ON 7/15 1975
 OFF 1910 M
 LOCATION BACA # 15 WHP
 REMARKS P1500 Los Angeles, California



ARCO T-1 G 24ms RECORDING CHARTS

ON 7/15 1975
 OFF 1910 M
 LOCATION BACA # 15 WHP
 REMARKS P1500 Los Angeles, California

76



GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-4 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BABA #15
 CASING 20" AT 210"; 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509'; 2509 - TD OPEN HOLE ZERO POINT GL+12'
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:

ELEMENT- 0-4250 PSIG SN-7198 CLOCK-121+R 15 TURN
 ELEMENT- 82°-686° SERIAL NO. 10055 CLOCK-121+R 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0650; T-0653 DISENGAGE STYLUS P-1429; T-1431
 WELL HEAD SEE CHART
 PICKUP @ 5500' TIME ON BOTTOM 0730-1400 MAX. 'F
 WELL STATUS STATIC
 SHUT IN: 7/14/75 0722 HRSON PRODUCTION:
 RATE

TEMPERATURE

TEMPERATURE

TIME	DEPTH	DEFL.	W-T	GRAD.	ID	TIME	DEPTH	DEFL.	W-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0730	5500	1.031	414.5			1030	5500	1.137	446.8								
0731	"	1.036	415.9			1100	"	1.147	449.9								
0732	"	1.040	417.2			1130	"	1.157	452.9								
0733	"	1.045	418.7			1200	"	1.163	454.7								
0734	"	1.048	419.6			1250	"	1.170	456.9								
0735	"	1.050	420.3			1300	"	1.178	459.3								
0736	"	1.053	421.2			1330	"	1.184	461.1								
0737	"	1.055	421.7			1400	"	1.189	462.7								
0738	"	1.057	422.4														
0739	"	1.058	422.5														
0740	"	1.059	422.9														
0745	"	1.066	425.1														
0750	"	1.070	426.3														
0755	"	1.075	427.9														
0800	"	1.077	428.5														
0805	"	1.079	429.1														
0810	"	1.082	430.0														
0815	"	1.084	430.6														
0820	"	1.088	431.8														
0825	"	1.090	432.5														
0830	"	1.092	433.0														
0845	"	1.099	435.2														
0900	"	1.105	437.0														
0915	"	1.112	439.2														
0930	"	1.118	441.0														
0945	"	1.122	442.2														
1000	"	1.127	443.7														
1015	"	1.132	445.2														

COMMENTS:

BY: JM JB HB

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-4 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 210'-20" 13 3/8" AT 1273' ELEV. ? DATE: 7/14/75
 LINER DESCRIPTION: 9 5/8" AT 2509' ; 2509' - TD - OPEN HOLE ZERO POINT CL 12"
 DEPTH 5500'

TUBING DETAIL:

PURPOSE SHUT IN BUILD UP

REMARKS:
 ELEMENT 0-4250 PSIG SN 7198 CLOCK - 12 hr 15 TURN
 ELEMENT 82°-6.86° SERIAL NO. 10055 CLOCK - 12 hr 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0650 T-0653 DISENGAGE STYLUS P-1429 T-1431
 WELL HEAD SEE CHART
 PICKUP @ 5500' TIME ON BOTTOM 0730-1400 MAX. °F 462.6
 WELL STATUS STATIC
 SHUT IN: 7/14/75 0722 HRS ON PRODUCTION:
 RATE

PRESSURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
0750	5500	.170	383		0	1030	5500	.277	616.5		0						
0800	"	.171	385		0	1100	"	.284	621.4		0						
0810	"	.172	387.4		0	1130	"	.290	624.0		0						
0823	"	.173	390		0	1200	"	.294	632.5		0						
0834	"	.175	394.2		0	1230	"	.297	639.0		0						
0835	"	.177	399		0	1300	"	.301	647.4		0						
0836	"	.180	405.4		0	1330	"	.305	656.0		0						
0837	"	.183	412.2		0	1400	"	.309	664.3		0						
0858	"	.185	416.7		0												
0839	"	.187	421.2		0												
0840	"	.189	426.0		0												
0845	"	.195	437.2		0												
0850	"	.202	455.0		0												
0855	"	.209	471.0		0												
0800	"	.214	482.0		0												
0805	"	.219	493.2		0												
0810	"	.222	500.0		.001												
0815	"	.226	508.5		-.001												
0820	"	.229	515.0		-.001												
0825	"	.232	521.2		-.001												
0830	"	.235	527.5		-.001												
0845	"	.244	547.0		-.001												
0900	"	.251	561.4		.001												
0915	"	.258	576.3		-.001												
0930	"	.260	580.5		0												
0945	"	.264	589.0		0												
0950	"	.268	597.5		0												
1000	"	.273	608.0		0												

COMMENTS:

BY: JM JB HB

SURFACE PRESSURE BUILD UP

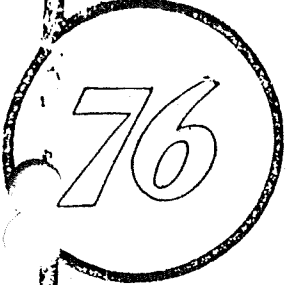
$P_{wh} = 63 \text{ PSIG}$ 2 PHASE = $P_1 - 49 \text{ PSIG}$ $\Delta P = 9.8 \text{ PSI}$
 $T_{wh} = 320^\circ \text{F}$

AVERAGE H₂O INJ. 110-160 GPM

TIME SHUT IN: 0722 HRS

Δt hr. MIN. SEC.	P_{wh} PSIG	Δt hr. MIN	P_{wh} PSIG
0722 : 10	80	0937:00	385
0722 : 20	110		
0722 : 30	142		
0722 : 40	171		
0722 : 50	181		
0723 : 00	192		
0724 : 00	198		
0725 : 00	205		
0726 : 00	211		
0727 : 00	215		
0728 : 00	222		
0729 : 00	226		
0730 : 00	231		
0732 : 00	236		
0737 : 00	242		
0742 : 00	259		
0747 : 00	271		
0752 : 00	285		
0757 : 00	293		
0802 : 00	299		
0807 : 00	306		
0812 : 00	312		
0817 : 00	319		
0822 : 00	324		
0837 : 00	331		
0852 : 00	346		
0907 : 00	355		
0922 : 00	377		

JAM JLS HRB



GEOTHERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 5-3 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210' 13 3/8" AT 1273' ELEV. ? DATE: 7/3/75
 LINER DESCRIPTION: 1 9/8" AT 2509 ; 2509' - 5505' = OPEN HOLE ZERO POINT 66' + 12'
 DEPTH 5505'

TUBING DETAIL:

PURPOSE FLOWING SURVEY

REMARKS:

ELEMENT - 0.4250 PSIC SN 7198 CLOCK 13375.2 16 TURN
 ELEMENT 82-686°F SERIAL NO. 10055 CLOCK 14091.6 18 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-1025 ; T-1020 DISENGAGE STYLUS P-1331 ; T-1333
 WELL HEAD 79 PSIC 0/1000 T/C
 PICKUP @ 4100' TIME ON BOTTOM 1220-1227 MAX. °F 398.6°
 WELL STATUS FLOWING SINCE 0950 HRS 6/27/75
 SHUT IN: _____ ON PRODUCTION: _____
 RATE _____

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
54-1	0	.036	81.1	0		"	0	.770	331.6	0							
4-1	500	.036	81.1	0		"	500	.805	342.6	.022							
2-7	1000	.036	81.1	0		"	1000	.836	352.5	.020							
2-27	1500	.066	148.6	1135	*	"	1500	.876	365.3	.024							
24-1131	2000	.075	168.9	.040		"	2000	.896	371.7	.014							
32-1144	2500	.082	184.7	.032		"	2500	.925	381.0	.019							
45-1154	3000	.083	186.9	.004		"	3000	.950	389.0	.016							
52-1209	3500	.090	202.7	.031		"	3500	.965	393.8	.010							
61-1218	4000	.093	209.5	.014		"	4000	.979	398.3	.009							
70-1227	4106	.094	211.7	.022		"	4106	.980	398.6	.003							

COMMENTS: CHARTS VERY DIFFICULT TO READ DUE TO VIBRATION
 * 1500' EXTREMELY DIFFICULT TO READ

BY: JM JB HA

GEO THERMAL DIVISION

SUBSURFACE TEMPERATURE SURVEY

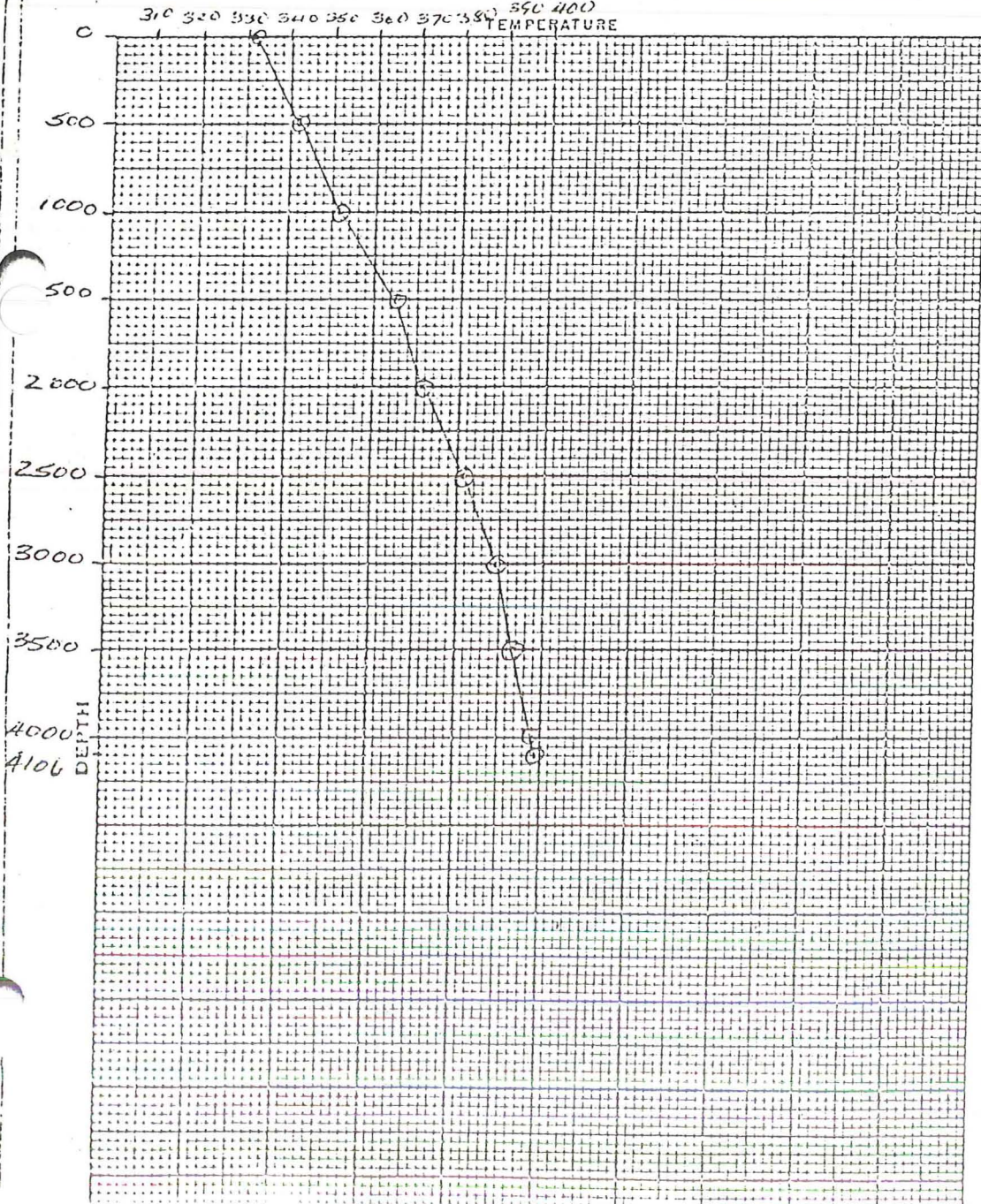
76

B-15 S-3 T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 2 1/2" 20" AT 210' 1 3/8" AT 1273' ELEV. ? DATE: 7/3/75
 LINER DESCRIPTION: 9 5/8" 2509' OPEN HOLE 2509-TD ZERO POINT CL+12'
 DEPTH. 5305'

HOLE DESCRIPTION: OPEN HOLE INSTRUMENT 820-686° FAH
 SERIAL NO 10055

PURPOSE FLOWING SURVEY MAX TEMP. 398.6° F @ 4106
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURE,	GAUGE	CORR.	
CASING, PSI	79		81.1

DEPTH	TEMP.	DEPTH	TEM
0	331.6		
500	342.6		
1000	352.5		
1500	365.3		
2000	371.7		
2500	381.0		
3000	389.0		
3500	393.8		
4000	398.3		
4100	398.6		

76

GEOHERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

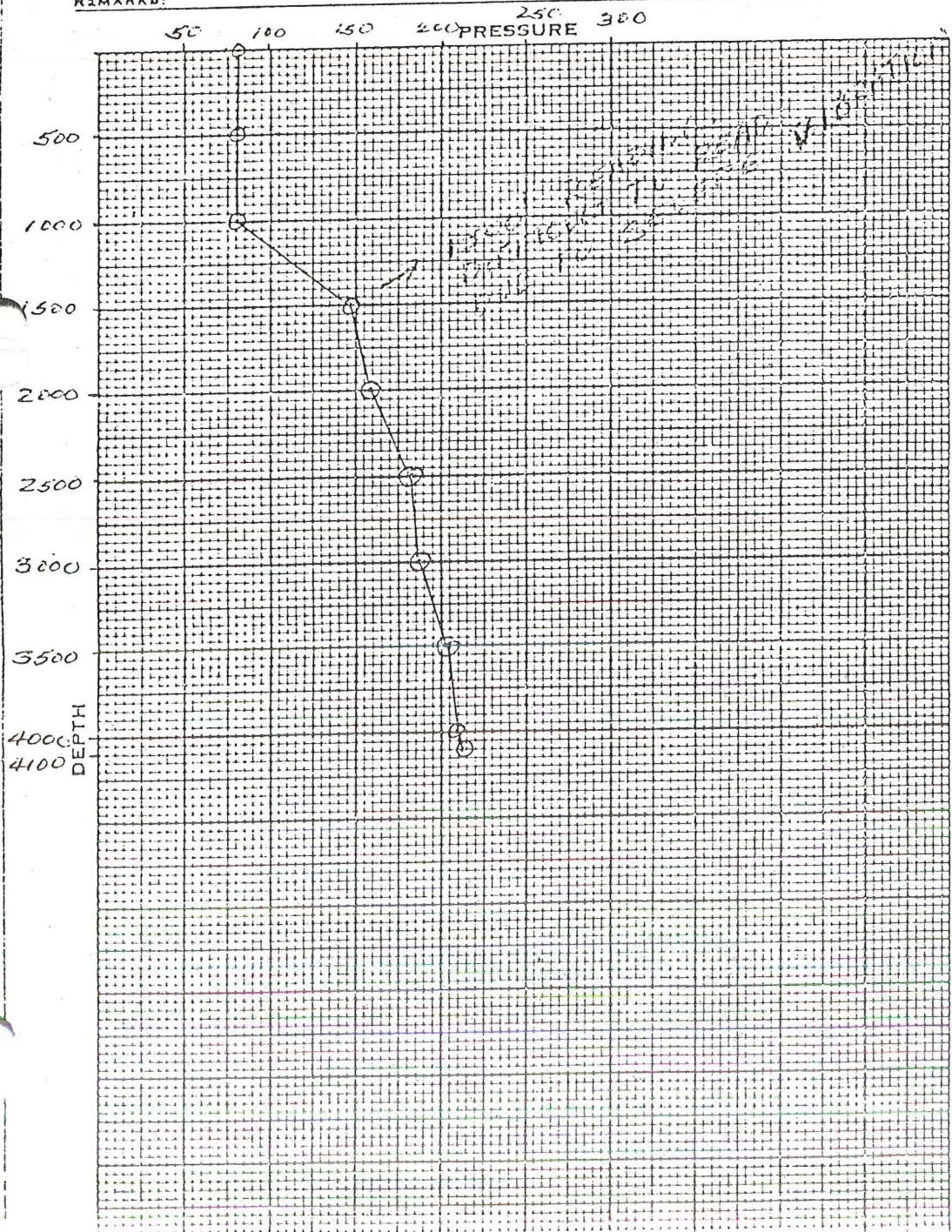
B-15 S-3 P

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING 20" AT 210" ; 13 3/8" AT 1273' ELEV. ? DATE 7/3/75
 LINER DESCRIPTION: 9 5/8" 1-2509' ZERO POINT CL+12
 DEPTH 5305

HOLE DESCRIPTION: OPEN HOLE INSTRUMENT 0-4250 PSI
 SERIAL NO. 7198

PURPOSE FLOWING SURVEY MAX TEMP 398.6 °F @ 4106'

REMARKS: _____ STABILIZATION PERIOD _____



PRESSURE	GAUGE	BOND
CASING, PSI	79 PSI @ 6	81.8 PSI @ 15

DEPTH	PRESSURE	GRADIENT
0	81.1	0
500	81.1	0
1000	81.1	0
1500	148.6	0.135
2000	168.9	0.040
2500	184.7	0.037
3000	186.9	0.004
3500	202.7	0.031
4000	209.5	0.014
4106	211.7	0.000

BY: JH JB HB

76

UNION

GEO THERMAL DIVISION

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-2 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA # 15

CASING ELEV. DATE: 6/26/75

LINER DESCRIPTION: ZERO POINT GL+12'

DEPTH 5505

TUBING DETAIL:

PURPOSE

REMARKS:

0-4250 PSIG 7198 CLOCK 13375-6 15

ELEMENT 82-686 SERIAL NO. 10055 CLOCK 14091-2 15 TURN STABILIZATION PERIOD

ENGAGE STYLUS P-1345; T-1330 DISENGAGE STYLUS P-1620; T-1630

WELL HEAD 652 PSIG 0-1000 T/E

PICKUP @ 5505 TIME ON BOTTOM 1509-1515 MAX. °F 529.6

WELL STATUS

SHUT IN: ON PRODUCTION:

RATE

PRESSURE

TEMPERATURE

PRESSURE						TEMPERATURE											
TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
100	100	.296	656.8			100		.120	120.4								
1000	1000	.298	661.1			1000		.493	243.7								
2100	2100	.311	688.6			2000		1.270	486.6								
3140	3140	.323	714.0			3000		1.305	496.9								
4158	4158	.346	762.7			4000		1.326	503.2								
5107	5000	.398	872.9			5000		1.360	513.2								
51515	5505	.441	944.0			5505		1.416	524.6								

COMMENTS: NOTE B-15 S-2 WAS RUN TO CONFIRM B-15 S-1

BY: [Signature]

76

UNION

GEO THERMAL DIVISION

JACK

SUBSURFACE SURVEY

Field Work Sheet

B-15 S-1 P/T

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACH #15
 CASING ELEV. DATE: 6/26/75
 LINER DESCRIPTION: ZERO POINT G.L. + 12'
 DEPTH 5505'

TUBING DETAIL:

PURPOSE

REMARKS:

0-4250 PSIG SN 7198 CLOCK 13375-L 15 TURN
 ELEMENT 82°-686° SERIAL NO. 10055 CLOCK-12091-L 15 TURN STABILIZATION PERIOD
 ENGAGE STYLUS P-0935; T-0931 DISENGAGE STYLUS P-1302; T-1301
 WELL HEAD 652 PSIG 0-1000 T/B
 PICKUP @ 5505' TIME ON BOTTOM 1130-1140 hrs MAX. °F 529.6
 WELL STATUS
 SHUT IN: ON PRODUCTION:
 RATE

PRESSURE

TEMPERATURE

TIME	DEPTH	DEFL.	P-F	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID	TIME	DEPTH	DEFL.	P-T	GRAD.	ID
09	100	.296	656.8			"	100	.120	120.4								
10	1000	.298	661.1			"	1000	.493	243.7								
11	2000	.311	688.6			"	2000	1.270	486.6								
12-057	3000	.323	714.0			"	3000	1.305	496.9								
12-1117	4000	.346	762.7			"	4000	1.326	503.2								
12-1124	5000	.398	872.9			"	5000	1.360	513.2								
12-1140	5505	.441	964.0			"	5505	1.416	529.6								

COMMENTS:

BY: JHA CR

76

GEOHERMAL DIVISION

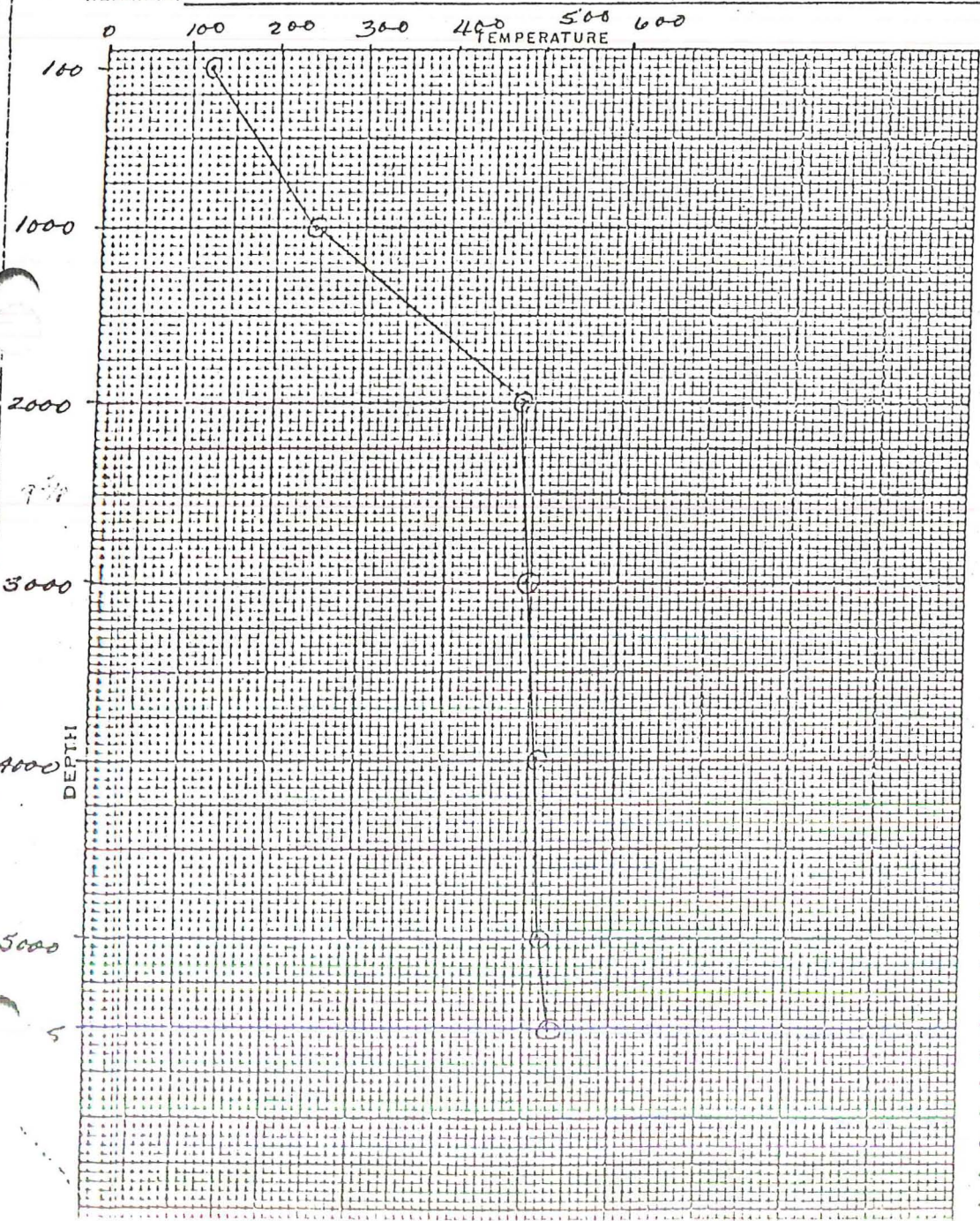
SUBSURFACE TEMPERATURE SURVEY

B-15 S-1 P/1

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
 CASING _____ ELEV. _____ DATE: 6/26/75
 LINER DESCRIPTION: _____ ZERO POINT GL + 12'
 _____ DEPTH. 5505

HOLE DESCRIPTION: _____ INSTRUMENT 82°-6.86° FA
 _____ SERIAL NO 10055

PURPOSE _____ MAX. TEMP. 529.6 °F @ 5505
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURE,	GAUGE	DEPTH
CASING, PSI	652	654

DEPTH	TEMP.	DEPTH	TEMP.
100	120.4		
1000	243.7		
2000	486.6		
3000	496.9		
4000	503.2		
5000	513.2		
5505	529.6		

GEO THERMAL DIVISION

SUBSURFACE PRESSURE SURVEY

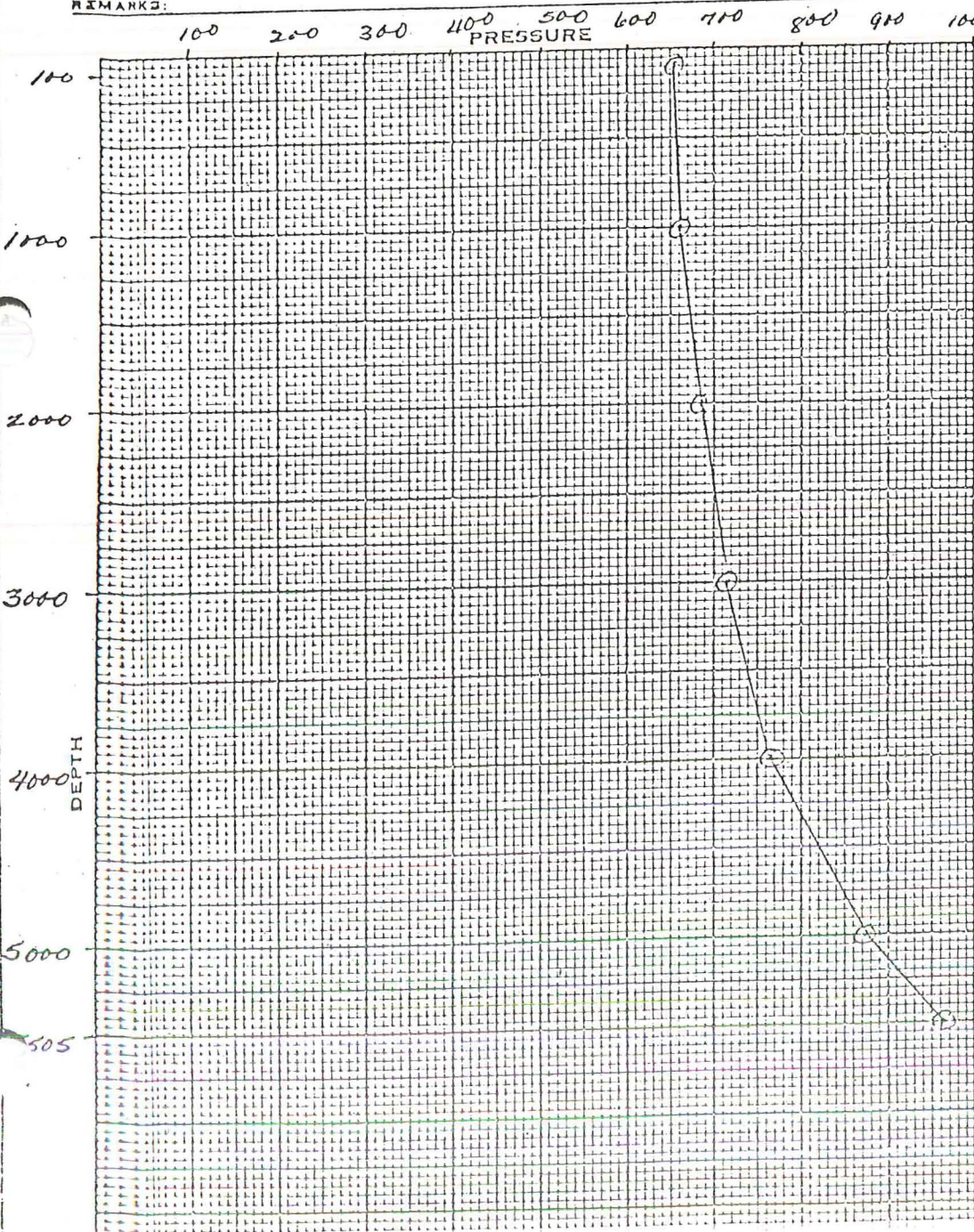
B-15 S-1 P1

OWNER UNION OIL COMPANY FIELD VALLE GRANDE WELL NAME BACA #15
CASING _____ ELEV. _____ DATE: 6/26/75
LINER DESCRIPTION: _____ ZERO POINT CL + 12'
DEPTH 5505

HOLE DESCRIPTION: _____ INSTRUMENT 0-9250 RSIG PSI
SERIAL NO 7198

PURPOSE _____ MAX. TEMP 524.6 °F @ 5505

REMARKS: _____ STABILIZATION PERIOD _____



PRESSURE	GAUGE	BOHR
CASING, PSI	652	654

DEPTH	PRESSURE	GRADIENT
100	656.8	
1000	661.1	
2000	688.6	
3000	714.0	
4000	762.7	
5000	872.5	
5505	964.0	