



GL03920

December 8, 1981

TO: Mohinder Gulati

FM: Rich Eliason
Paul Atkinson P.A.RE: BACA-13, REDONDO CREEK FIELD: SUMMARY AND PRODUCTION
ANALYSIS OF FLOWTEST #5, MARCH 5 TO APRIL 21, 1981

Summary

Baca 13 had a steam deliverability of 63,000 lb/hr at the end of a 47-day flowtest. This corresponds to a commercial wellhead pressure of 130 psig, a separator pressure of 100 psig and approximately 30% flash. The well exhibited an 80% annual decline rate during the 47 days. This result is similar to the decline in the early part of Flowtest #4, which, however, after 100 days of flowing showed little or no further decline. The well seems to be producing from a liquid reservoir in the 550°F to 570°F range.

Introduction

This report presents production data and analysis for Flowtest #5 which began on March 5, 1981 and ended 47 days later on April 21, 1981. For the remainder of this report, Flowtest #4 will be referred to as the Interference Test. Comparison of Flowtest #5 results will be made with both Flowtests #4, and #6 (which is currently underway).

Discussion

Figure 1 gives a chronological overview of the results of Flowtest #5. It should be noted that prior to March 23, 1981, the separator was not functioning and there is no valid two phase data before that time. Also, the noncondensable gases are plotted as a weight percent on the same graph as steam quality. The noncondensable gas information is also presented in Table 1.

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Figures 2 and 3 represent observed deliverability curves. Figure 2 is separator pressure vs flowrate and Figure 3 is wellhead pressure vs flowrate. A least squares fit was drawn for wellhead pressure vs steam rate. The slope of this line was used in subsequent comparisons with other flowtests.

Figure 4 shows producing quality vs separator pressure. The lines drawn are isenthalpic flash lines. Most of the points are scattered between 550°F and 570°F. This is a good indication that the steam is coming from a liquid reservoir in this temperature range.

A decline analysis was done for the period from March 23 to April 13, 1981. This period was chosen because separator pressure was nearly constant at 125 psig for those days. Figure 5 shows the mass rates vs time for this period. Figure 6 shows only the steam rate vs time and also the least squares fit that was calculated. This decline curve was calculated to be:

$$W_s = 66156 (\text{EXP} (-.4541 \times 10^{-2} \cdot t)) \text{ where } t \text{ is} \\ \text{in days}$$

From this information we would anticipate an 80% annual decline rate. Figure 7 shows the steam rate extrapolated for one year. This is probably a misleading conclusion, however, due to the short duration of Flowtest #5.

A comparison of Flowtest #5 with the Interference Test is both consistent and revealing. Figure 8 shows the production data vs time for the Interference Test. The slope of the deliverability curve from Flowtest #5 was used to adjust the wellhead pressures and steam rates of the Interference Test. This adjustment was made so that flowrate comparisons would be made at comparable pressures.

Although this was an approximate calculation, the results are very interesting. A separate decline analysis was done on three different periods of the Interference Test. The first period was 52 days, from October 14 to December 5, 1975. During this period there was an 11% per month steam decline. This period is similar in length to all of Flowtest #5 and the 11% monthly decline is nearly the same as the 13% monthly decline for Flowtest #5.

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The second period of the Interference Test was 56 days, and showed a 6.5% monthly decline. The last period was 87 days and showed little or no steam decline at all.

It can be concluded that Flowtest #5 and the Interference Test are consistent but Flowtest #5 did not last long enough to give a reasonable decline rate.

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Table 1

BACA 13 Flowtest No. 5
Noncondensable Gases

<u>Date</u>	<u>NCG % Wt</u>	<u>#Readings</u>
3/24/81	3.85 \pm .05	4
3/31/81	3.71 \pm .05	4
4/02/81	3.73 \pm .02	4
4/06/81	3.84 \pm .02	4
4/13/81	4.71 \pm .14	3
4/16/81	4.28 \pm .06	3
4/20/81	3.22 \pm .03	3

ESTDOE

STROBE

FLOWRATE, MLB/HR

400 100

PRESSURE, PSIG

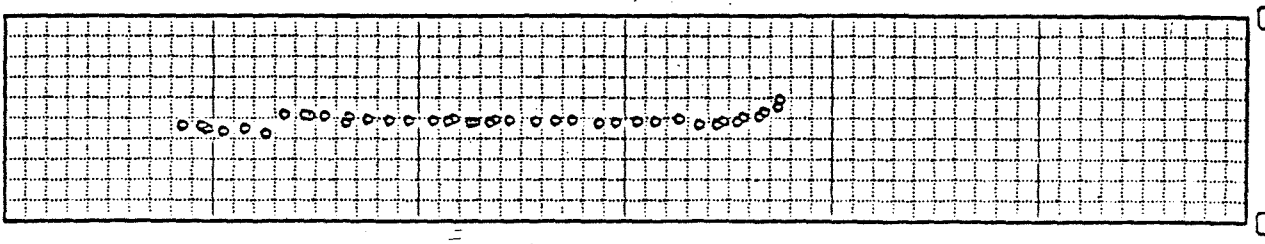
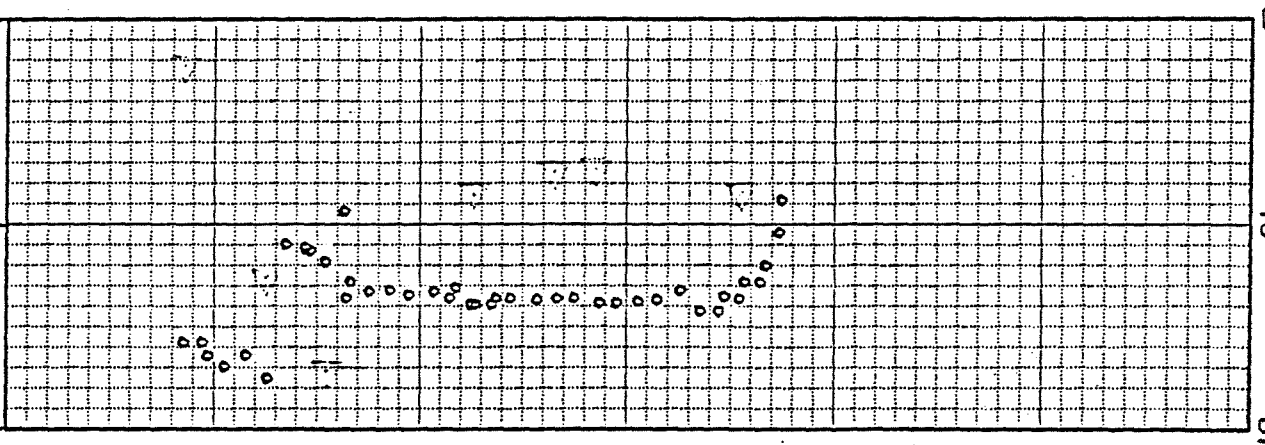
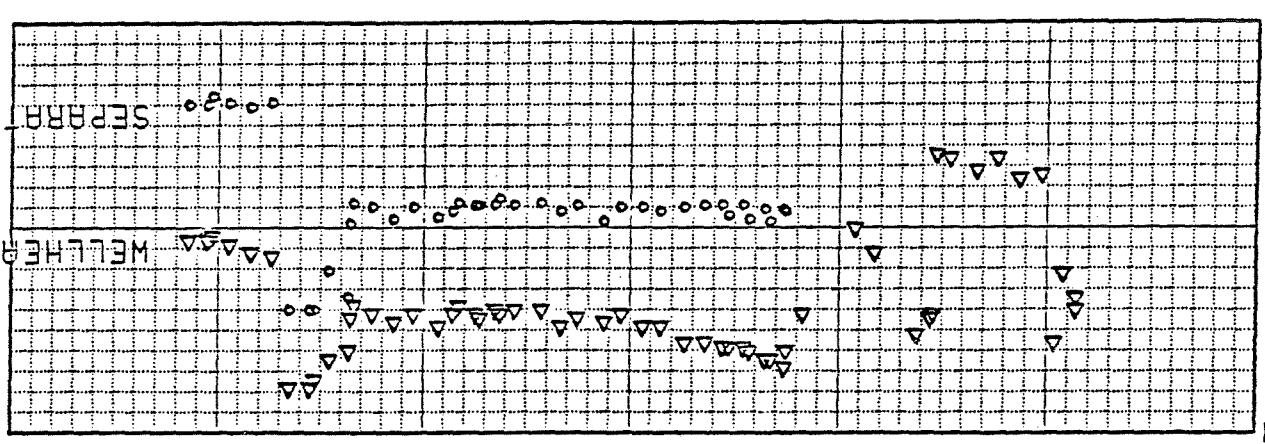
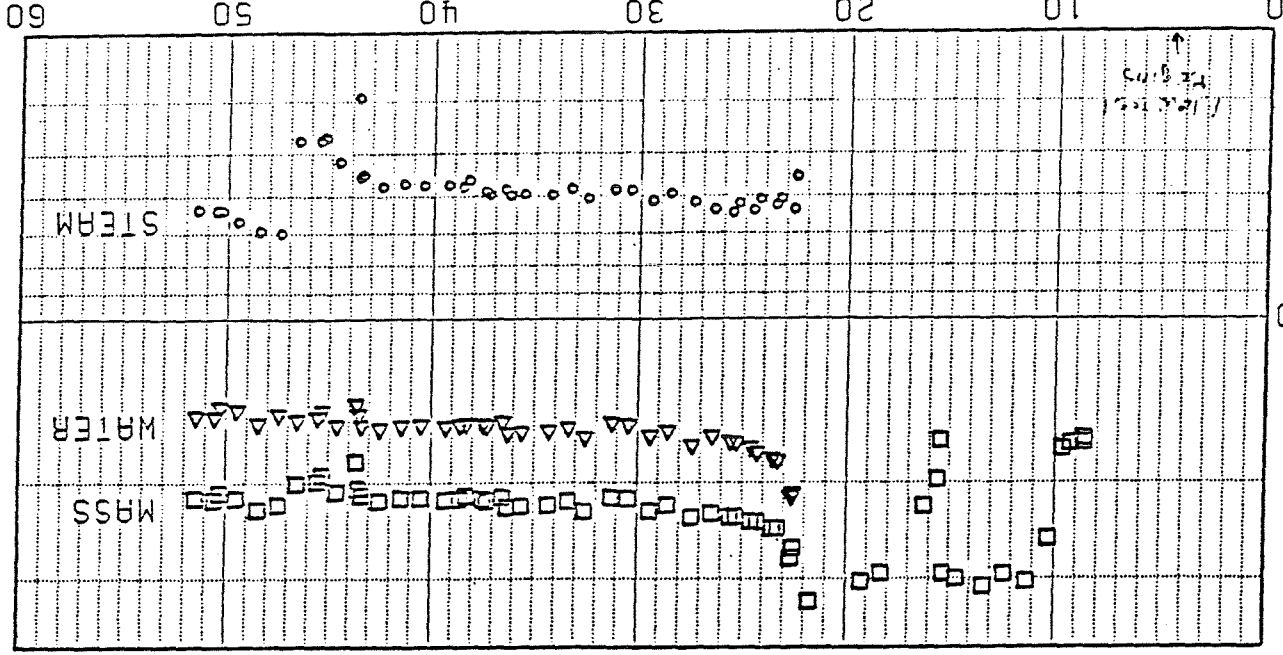
80 130 180

STEAM QUALITY, %

10 20 35

ENTHALPY, BTU/LB

800



BACH 13 FLOWTEST NO. 5

FIGURE 1

30 40 50

60

50

40

30

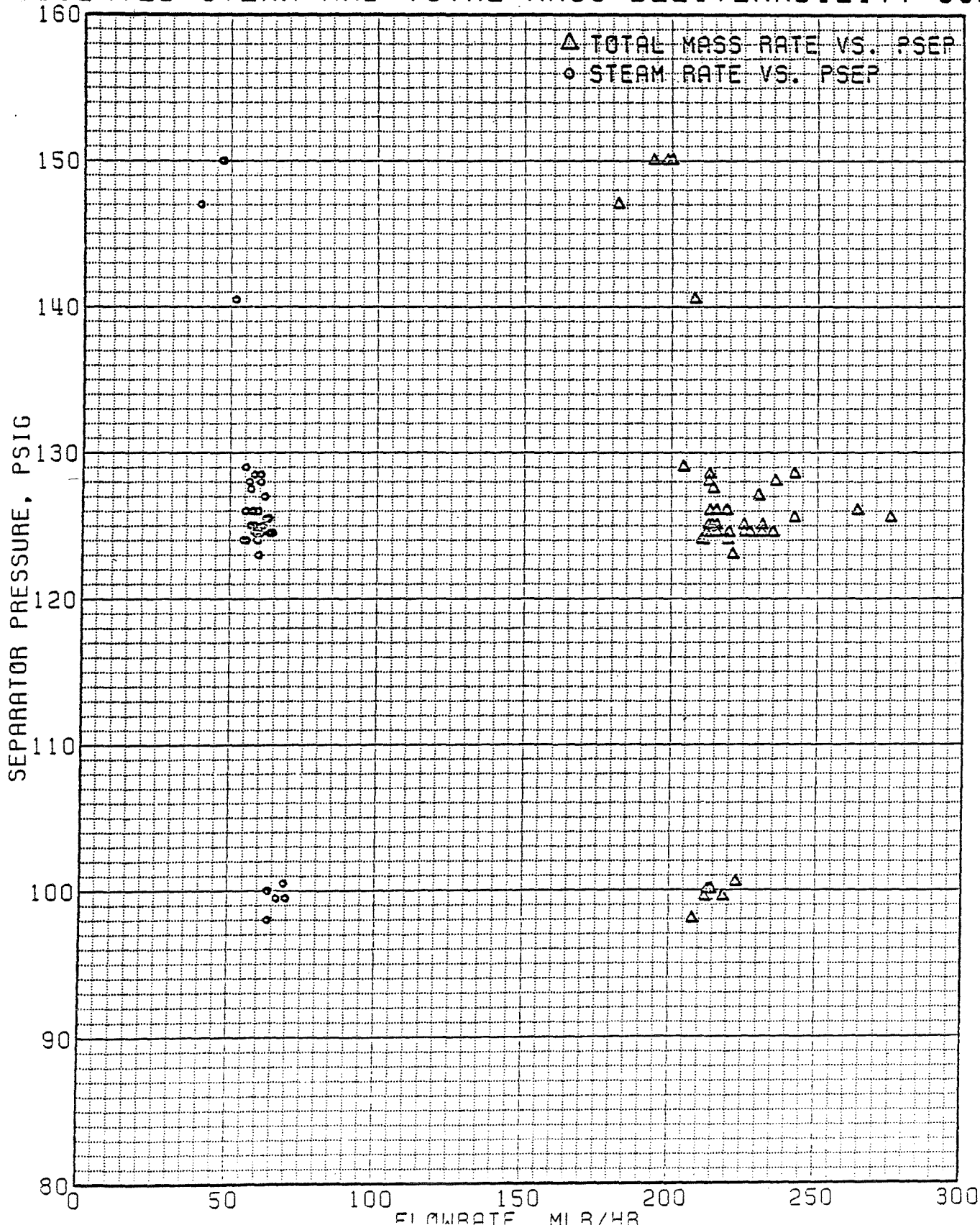
20

10

0

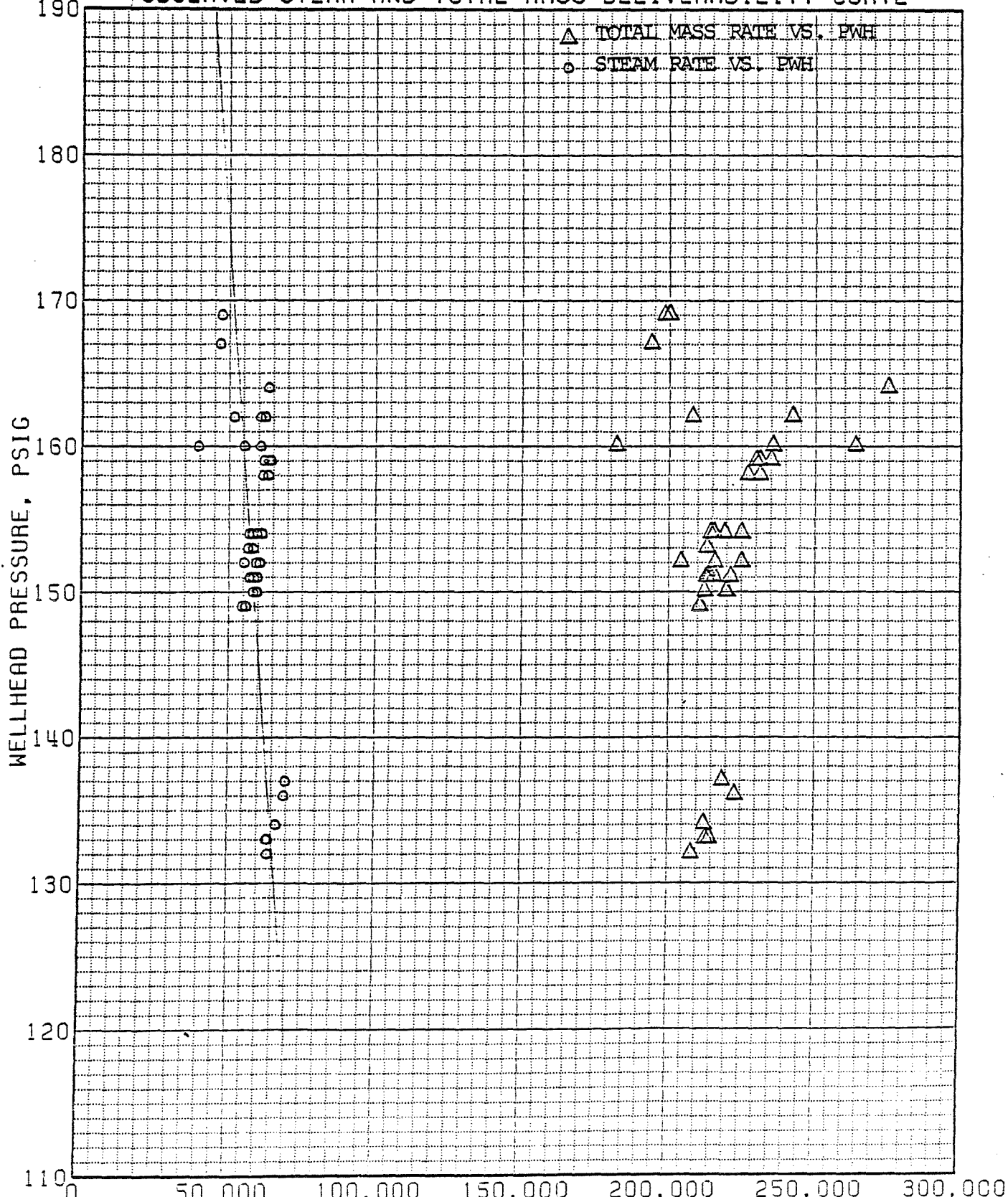
BACA 13 FLOWTEST NO. 5

OBSERVED STEAM AND TOTAL MASS DELIVERABILITY CURVE



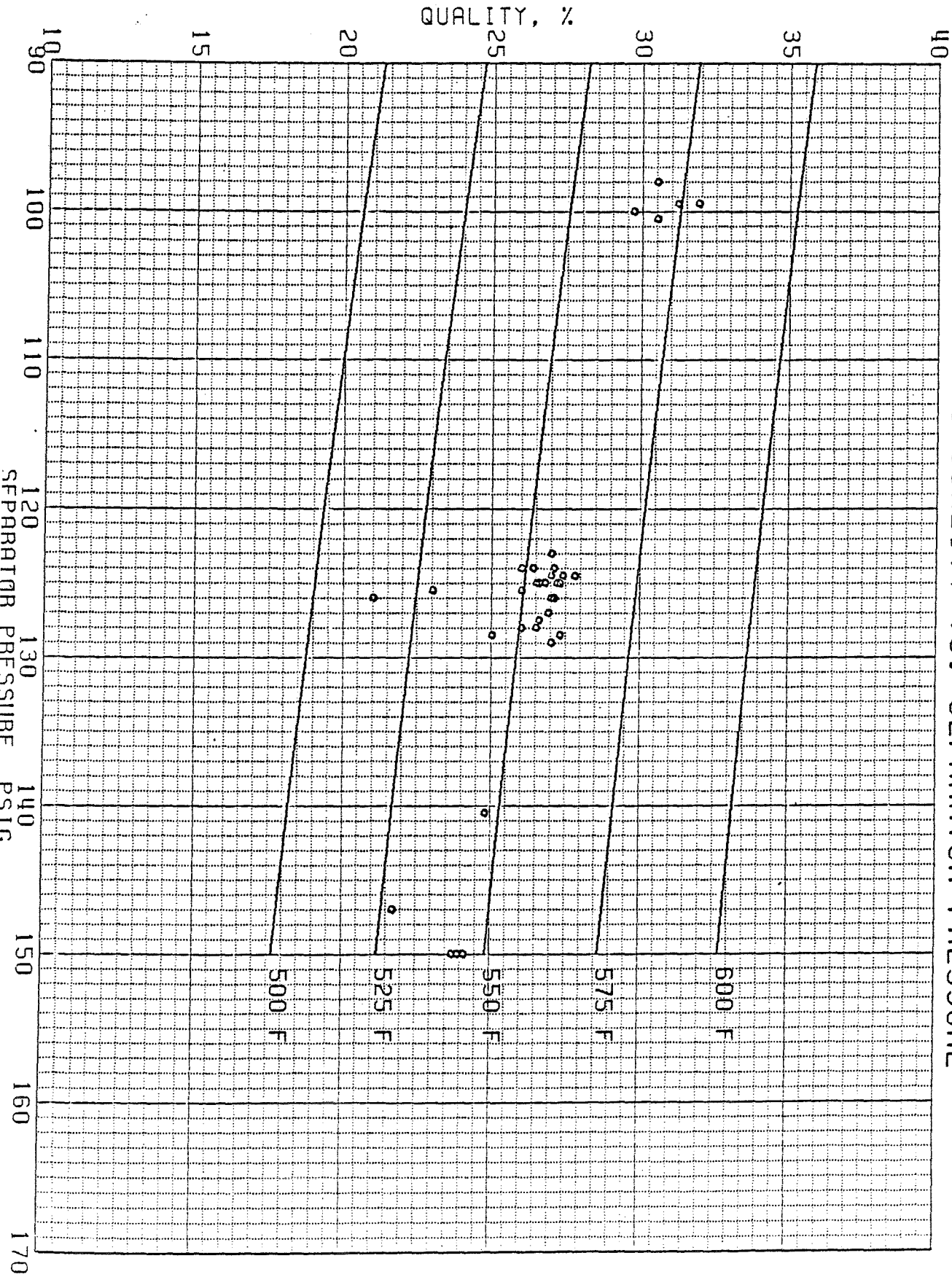
CSTDOE

BACA 13 FLOWTEST NO. 5
OBSERVED STEAM AND TOTAL MASS DELIVERABILITY CURVE



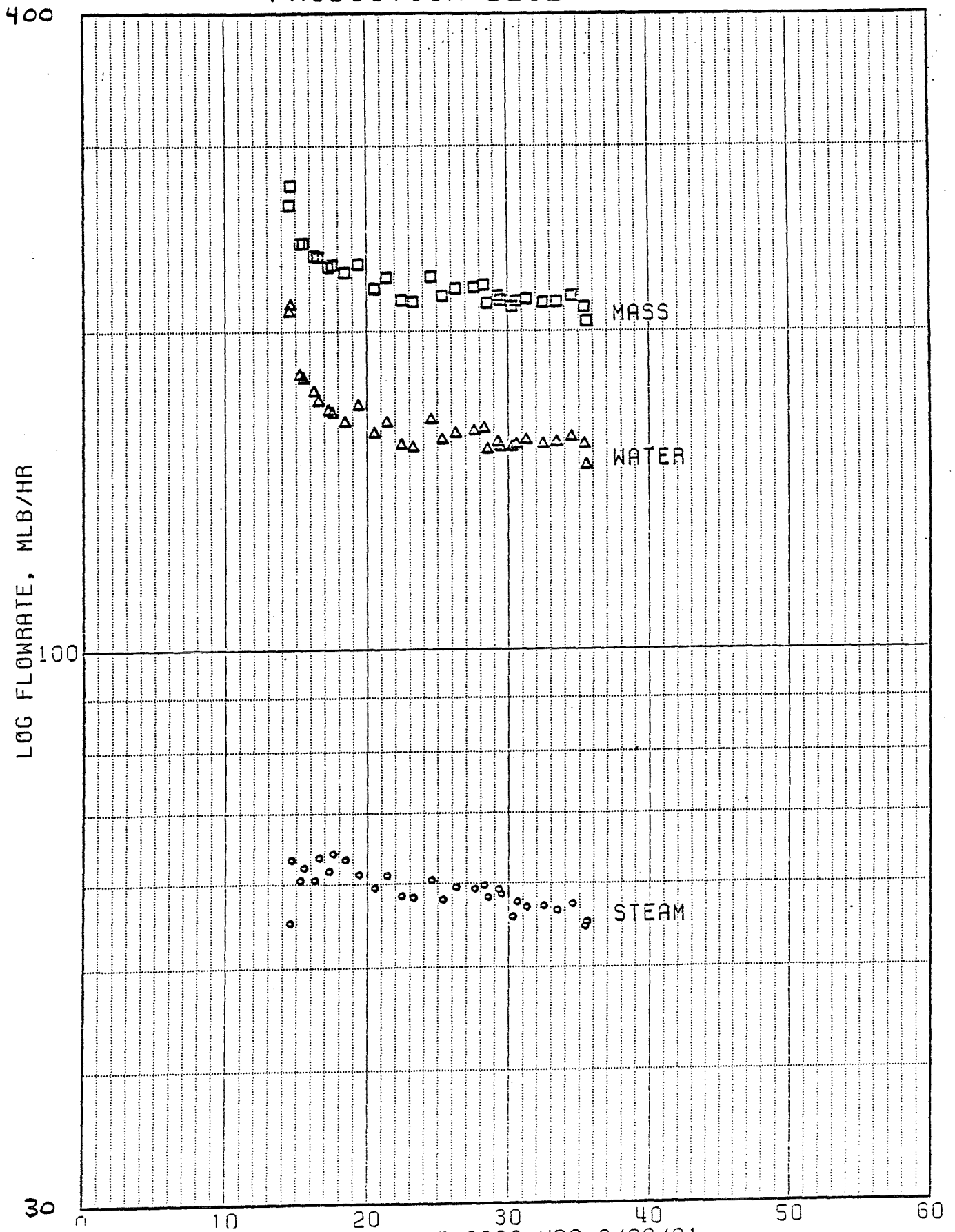
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BACA 13 FLOWTEST NO. 5
PRODUCING QUALITY VS. SEPARATOR PRESSURE



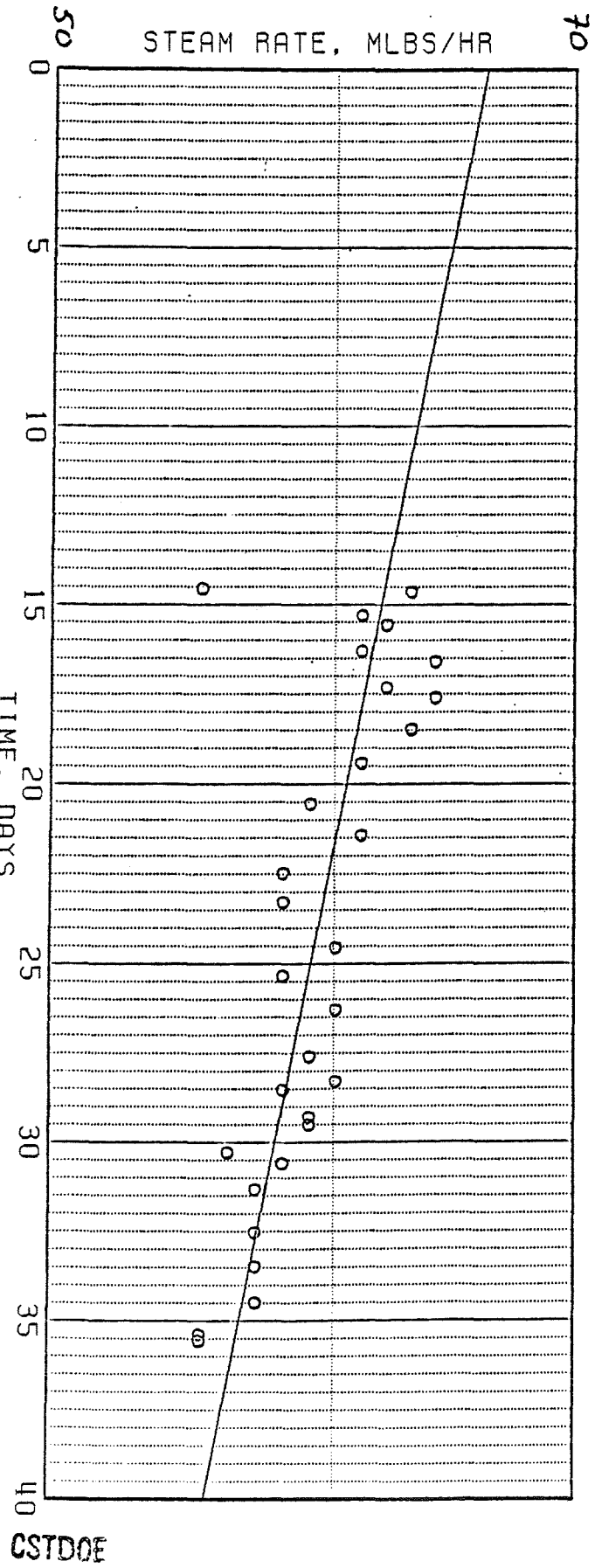
CSTDOE

BACA 13, FLOWTEST NO. 5, 125 PSIG SEPARATOR PRES.
PRODUCTION DECLINE CURVE



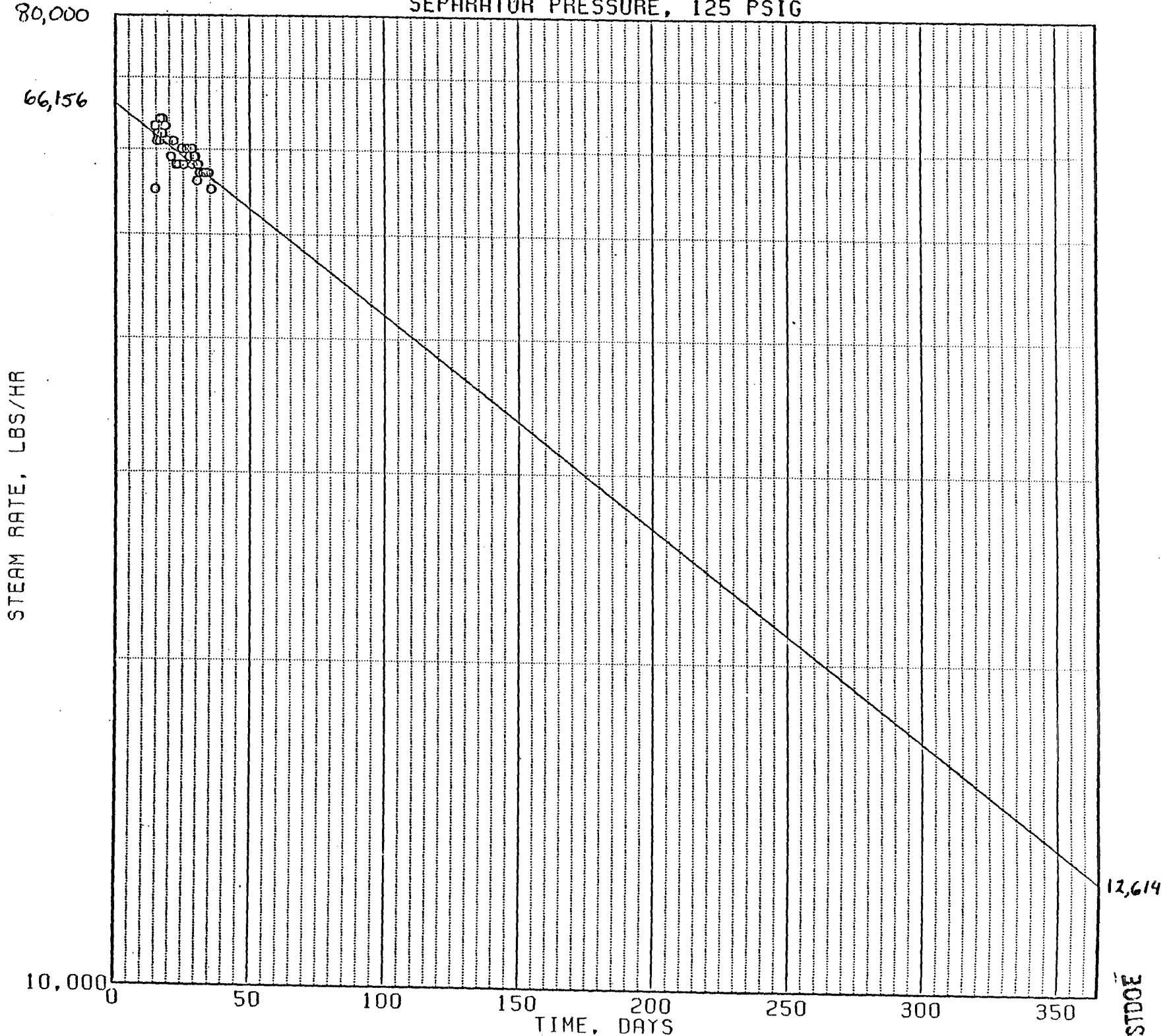
CSTDOE

BACA 13 FLOWTEST NO. 5: FORECASTING OF STEAM PRODUCTION



BACH 13 FLOWTEST NO. 5: FORECASTING OF STEAM PRODUCTION
SEPARATOR PRESSURE, 125 PSIG

FIGURE 7

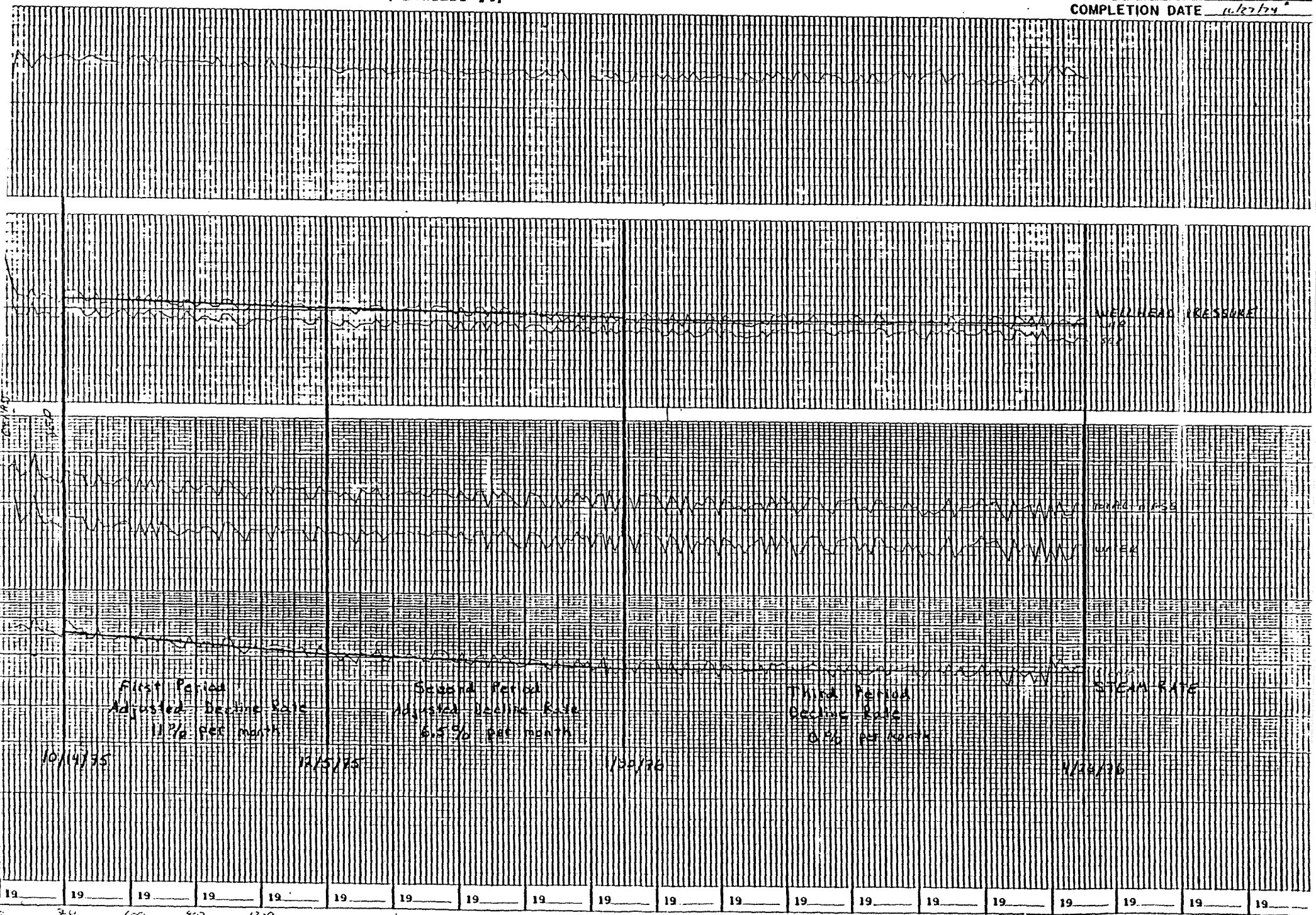


TDUE

FIGURE 8

BACA 13 INTERFERENCE TEST (FLOWTEST #4)

WELL BACA 13
COMPLETION DATE 11/27/74



WELL HEAD PRESSURE
110
80

TEMPERATURE
115.0
115.0

STEAM RATE

First Period
Adjusted Decline Rate
1 1/2% per month

Second Period
Adjusted Decline Rate
6.5% per month

Third Period
Decline Rate
0% per month

10/14/75

12/5/75

1/22/76

4/24/76

19 19 19 19 19 19 19 19 19 19 19 19 19 19 19 19 19 19 19 19

30 60 90 120 150 180 210 240 270 300 330 360 390 420 450 480 510 540 570 600 630 660 690 720 750 780 810 840 870 900 930 960 990

SEP.

MASS

DATE	TIME	WHP	PRES	STEAM	WATER	FLOW	FRAC	ENTHALPY
07/21/81	1620	150		75288	203557		.270	ASSUMED
07/22/81	1215	168	128	47695	233746	281441	.170	471 ADJUSTED
SEP. PRES. 128 TO 100 @ 1510.								
07/23/81	1148	158	99	61429	223669	285098	.216	495
07/24/81	1559	141	98	59931	188530	248461	.241	513
07/25/81	0935	150	99	59234	192156	251390	.236	513
07/26/81	1056	148	100	58405	176155	234570	.249	526
07/27/81	0730	147	99	59049	176215	235264	.251	527
07/28/81	0820	149	103	57181	174098	231279	.247	531
07/29/81	0847	151	105	57305	177945	235253	.244	524
07/30/81	0915	148	105	55858	170032	225890	.247	527
07/31/81	0846	149.5	106	56135	173935	230120	.244	525
08/01/81	0945	152	108	58074	173906	231980	.250	531
08/02/81	0830	149	106	55344	168970	224314	.247	527
08/03/81	0850	150	108	56138	167872	224010	.251	532
08/04/81	1130	151	108	55643	167872	223515	.249	530
08/05/81	0820	148	109	56404	159473	215877	.261	541
08/06/81	0830	145	109	55258	164773	220031	.251	532
08/07/81	0815	148	109	55479	159473	214952	.258	539
08/08/81	0900	149	109	54478	150634	205112	.266	545
08/09/81	0900	149	104	56473	158568	215041	.263	540
08/10/81	0900	144	103.5	54886	159650	214536	.256	534
08/11/81	0930	146	104	54627	161763	216390	.252	531
08/12/81	0830	148	109	55643	175871	231514	.240	523
08/13/81	0850	144	100	55873	154249	210122	.266	541
08/14/81	0930	144	100	56102	155363	211465	.265	540
08/15/81	0830	142	100.5	56345	155363	211708	.266	541

Baca 13 - Flow Test No. 6 (p 2 of 4)

08/16/81	0840	142	100	55281	151997	207278	.267	541
08/17/81	1100	143	101.5	54054	158627	212681	.254	531
08/18/81	0900	144	102	52926	147362	200288	.264	540
08/19/81	0820	142	102.5	54656	153070	207725	.263	534
08/20/81	0915	138	99	52754	161927	214681	.246	522
08/21/81	0900	142	103	54675	153081	207756	.263	539
08/22/81	0930	143	102	54425	151969	206394	.264	540
08/23/81	1000	144	104	54532	156393	210925	.259	536
08/24/81	1135	142	103.5	54059	151870	205929	.263	540
08/25/81	0900	143	104	54267	149571	203838	.266	543
08/25/81	1400	144	105.5	53929	150690	204619	.264	542
08/26/81	0910	144	105.5	53818	151827	205645	.262	540
08/26/81	1310	142	104	53596	154105	207701	.258	536
08/27/81	0720	142	101	54309	151969	206278	.263	539
08/27/81	0800	140	100	53708	151429	205137	.262	537
08/28/81	0830	139.5	101.5	52543	147335	199878	.263	539
08/28/81	1225	140	102	53671	149627	203298	.264	541
08/28/81	1355	142	104	53896	149586	203492	.265	542
08/28/81	1415	142	103	53896	149599	203495	.265	541
08/28/81	1430	142	102.5	53671	149627	203298	.264	541
08/28/81	1450	141	102.5	53784	149627	203411	.264	541
PRES TO 85 PSIG @ 1510								
08/29/81	1115	126	60	71122	140450	211572	.336	578
08/30/81	1100	126	61	69901	152102	222033	.315	559
08/31/81	0920	125	62.5	67821	150280	218101	.311	557
08/31/81	1250	125	65	68998	151067	220065	.314	561
08/31/81	1330	125	63	67175	149387	216562	.310	557
08/31/81	1515	126	62.5	66943	148538	215481	.311	557
08/31/81	1550	128	64	63764	150230	218994	.314	561
09/01/81	0855	127	64	65953	146694	213647	.313	560
09/02/81	0855	127	66	66409	151833	218292	.304	553

09/02/81	1405	123	65	65235	148440	214675	.309	557	
09/03/81	0915	124	64.5	65269	151067	216336	.302	550	
09/03/81	1330	123	65	65269	150190	215465	.303	552	
09/04/81	0845	123	65	64702	150184	214856	.301	551	
09/05/81	0900	124	63.5	61810	148472	210282	.294	543	
09/06/81	0950	125	63	62424	150263	212687	.294	542	
09/07/81	0930	125	67.5	63029	151001	214030	.295	545	
09/08/81	0840	125	67.5	64295	149256	213551	.301	551	
09/09/81	0900	125	68.5	63630	150098	213728	.298	549	
09/09/81	1315	125	68.5	61775	150050	211825	.292	544	13
09/10/81	0845	125	70	62341	149159	211500	.295	548	
09/10/81	1245	126	71.5	61338	151719	213057	.288	543	
09/10/81	1330	126	72	61520	150839	212359	.290	545	
09/11/81	0845	125	71.5	61154	149985	211139	.290	544	
09/12/81	0900	125	72	61520	150839	212359	.290	545	
09/13/81	0930	125	72.5	63088	151672	214760	.294	549	
09/14/81	0900	126	73.5	59714	153369	213083	.280	537	
09/14/81	1315	126	73.5	58223	149923	208146	.280	537	
09/15/81	0900	125	74	57348	149907	207255	.277	534	
09/15/81	1100	124	74.5	57662	149891	207553	.278	536	
09/16/81	0950	125	72.5	57989	150808	208797	.278	534	
09/17/81	1415	153	129	43607	160008	203615	.214	510	ADJ SEP PRES
09/18/81	0945	155	131	43007	158345	201352	.214	511	TO 125 @ 1245
09/19/81	1140	154	127	45023	157644	202667	.222	516	
09/20/81	0930	152	125	44149	154413	198562	.222	515	
09/21/81	0900	151	123	45213	155282	200495	.226	517	
09/22/81	1000	152	124	45102	154426	199523	.226	518	
09/22/81	1150	153	125	45535	150192	195727	.233	524	
09/22/81	1245	152	124.5	45535	151902	197437	.231	522	
09/23/81	1415	157	124	51873	155241	207114	.251	539	ABRUPT CHAN IN PRES @ 0825

09/24/81	0900	153	123	47274	153607	201274	.237	527
09/25/81	1045	154.5	125	46077	154386	200463	.230	522

13

Baca 13 - Flow Test No. 6 (1 of 1)

DATE	TIME	WHP	SEP.		TOTAL		FRAC	ENTHALPY
			PRES	STEAM	WATER	MASS FLOW.		
09/26/81	1035	155	124.5	49019	160118	209137	.234	525
09/27/81	0935	153	00000	49843	162798	212640	.234	500 AIR COMP
09/28/81	1015	155	126.5	46401	155187	201588	.230	523 PRESSOR PROBLEM
09/29/81	0910	155	127	46401	155173	201574	.230	523
09/30/81	0845	150	122	44588	153565	203153	.220	512
10/01/81	0845	154	125	45695	156856	202551	.226	519
10/02/81	0900	153	125.0	45695	152717	198412	.230	523

Baca No. 13 - Flow Test No. 6

DATE	TIME	WHP	SEP.	STEAM	WATER	TOTAL	FRAC	ENTHALPY
			PRES			MASS		
10/03/81	1045	153	124.5	45807	155214	201021	.228	520
10/04/81	1030	157	129	46369	155133	201502	.230	524
10/05/81	0930	154.5	126.5	46508	153527	200035	.233	525
10/06/81	0850	152	125	45262	150178	195440	.232	524
10/07/81	0700	152	125	45535	150178	195713	.233	525
10/08/81	0845	156.5	127.5	46833	149271	196104	.239	531
10/09/81	1100	154	125.5	47747	150178	197925	.241	532

Baca 13 Flow Test No. 6

(p 1 of 1)

DATE	TIME	WHP	PRES	STEAM	WATER	TOTAL	FRAC	ENTHALPY
						MASS FLOW.		
10/10/81	1600	151	123	46447	150217	196664	.236	527
10/11/81	0850	146	119.5	44267	147725	191992	.231	520
10/12/81	0845	149	120	45257	148592	193849	.234	523
10/13/81	0855	149	121.5	45051	145044	190095	.237	527
10/14/81	0855	149	122	45051	145926	190977	.236	526
10/15/81	0845	148	121	44700	145044	189744	.236	525
10/15/81	1200	150	123.5	45645	147635	193280	.236	527
10/16/81	1320	149	122	45051	145926	190977	.236	526

BACA 13 FLOWTEST 6



DATE	TIME	WHP	SEP.			TOTAL		ENTHALPY
			PRES	STEAM	WATER	MASS FLOW.	FRAC	
10/17/81	1100	155	126.5	47021	151836	193857	.237	529
10/18/81	1000	151	123	45213	144132	189345	.239	529
10/19/81	1000	152	124.5	46077	148462	194539	.237	528
10/20/81	1045	152	124	45914	144993	190907	.241	531
10/21/81	1115	153	125	46427	144968	191395	.243	533
10/22/81	1215	150	124.5	46345	145862	192207	.241	532
10/23/81	1020	148	120	45422	143315	188737	.241	529
10/24/81	1115	150	123	45213	143239	188452	.240	530
10/25/81	0800	152	126	46320	144943	191263	.242	533
10/26/81	1310	154	125	45968	144956	190924	.241	532
10/27/81	1105	147	119	44457	143327	187784	.237	525
10/28/81	0930	145	117	43701	146932	190633	.229	518
10/29/81	0930	147	119	44025	148618	192643	.229	518
10/30/81	1100	151	122	45320	146802	192122	.236	526

DATE	TIME	WHP	SEP.		TOTAL		FRAC	ENTHALPY
			PRES	STEAM	WATER	MASS FLOW.		
10/31/81	0835	147	120.5	44267	145082	189349	.234	523
11/01/81	0930	150	122	44234	143264	187498	.236	526
11/02/81	1020	151	124.5	44827	145875	190702	.235	526
11/03/81	1320	147.5	121	43800	140577	184377	.238	527
11/04/81	1200	152	124	45102	144993	190095	.237	528
11/05/81	1000	150	123.5	44827	144119	188946	.237	528
11/06/81	1000	148	122	43211	143389	186560	.232	522

TOTAL

SEP.

MASS

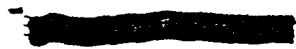
DATE	TIME	WHP	PRES	STEAM	WATER	FLOW.	FRAC	ENTHALPY
11/07/81	1015	152	124	44076	145119	189195	.233	524
11/08/81	1030	149	122	43914	145157	189071	.232	523
11/09/81	0900	150	122	43914	143376	187290	.235	525
11/10/81	0930	148.5	120	43424	146982	190406	.228	513
11/11/81	1410	151	124	44076	146878	190954	.231	522
11/12/81	0900	149.5	123	44264	143363	187627	.235	526
11/13/81	0950	148	120.5	43157	144334	187491	.230	520

R.O. ENGBREITSEN
 NOV 17 1981

DATA NO. 13 FLOWTEST 6

DATE	TIME	WHP	SEP.	PRES	STEAM	WATER	FLOW.	MASS	FRAC	ENTHALPY
11/14/81	1115	150	124	44345	145119	189464	.234	525		
11/15/81	1215	149	122.5	43643	143363	187006	.233	524		
11/16/81	1000	149.5	123	44264	145144	189408	.234	524		
11/17/81	1130	148	121	43751	146956	190707	.229	520		
11/18/81	1015	149	121	43937	143414	187351	.235	524		
11/19/81	1030	149	122	44182	145157	189339	.233	524		
11/20/81	0940	149	122.5	44182	144257	188439	.235	525		

R.O. ENGEBRETSSEN
 NOV 24 1981



DATE	TIME	SEP.			TOTAL			ENTHALPY
		WHP	PRES	STEAM	WATER	MASS FLOW.	FRAC	
11/21/81	0815	147	121	43320	146956	190276	.228	518
11/22/81	1115	149	122	44284	146053	190337	.233	523
11/23/81	1330	149	122	43751	145170	188921	.232	522
11/24/81	0930	150	123.5	43531	141548	185079	.235	526
11/25/81	0915	147	121	42773	142515	185293	.231	521
11/26/81	0945	149	122	43751	145170	188921	.232	522
11/27/81	1030	149	122	43833	145157	188990	.232	522

R. O. ENGBRETSSEN
DEC 1 1981

DATE	TIME	WHP	SEP. PRES	STEAM	WATER	TOTAL MASS FLOW.	FRAC	ENTHALPY
11/28/81	1000	148	123.5	43611	139696	183307	.238	528
11/29/81	1000	149	122	43371	138811	182182	.238	528
11/30/81	0930	148.5	122	43018	139758	182776	.235	525
12/01/81	1040	148	121	43401	141598	184999	.235	524
12/02/81	0915	145.5	120	42698	141636	184334	.232	521
12/03/81	1100	149	124	40543	145119	185662	.218	512
12/04/81	0915	153.5	129	41273	141386	182659	.226	521

END OF DATA

- BACA 13 FLOWTEST 6 *Encl. 1* -

- BACA 13 FLOWTEST 6

TOTAL

SEP.

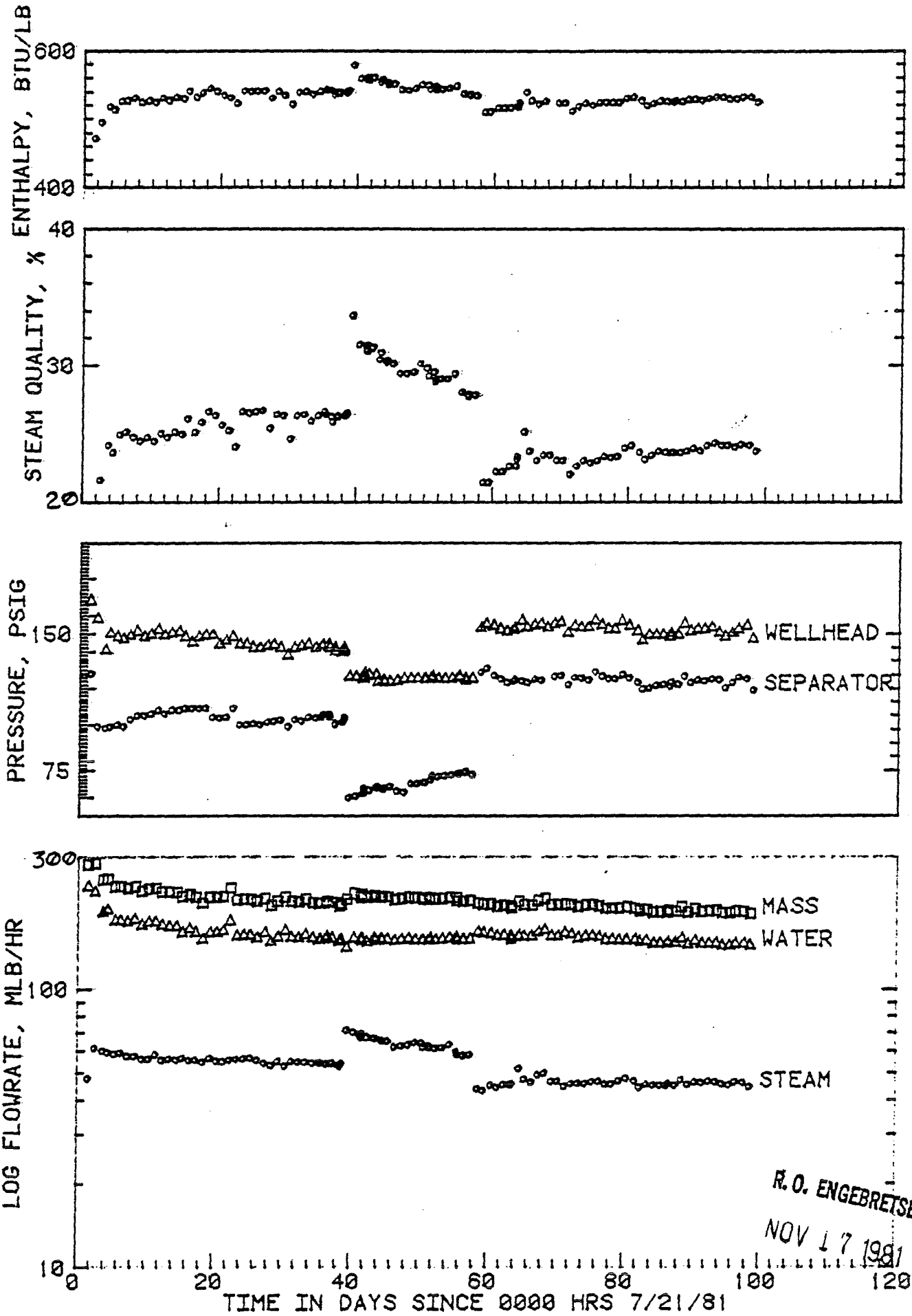
MASS

DATE TIME WHP PRES STEAM WATER FLOW. FRAC ENTHALPY

12/05/81	0915	150	125	42233	140563	182796	.231	524
12/06/81	0915	152	125	42934	140600	183534	.234	525
12/07/81	0930	151.5	125.5	42157	142402	184559	.228	521
12/08/81	1020	150	124	42005	143313	185318	.227	519
12/09/81	0940	151	126	42309	139635	181944	.233	525
12/10/81	1125	151.5	127	42170	142364	184534	.229	522
12/11/81	0940	150	125	42157	141510	183657	.229	522

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BACA NO. 13 FLOWTEST NO. 6: 7/21/81 - 11/13/81



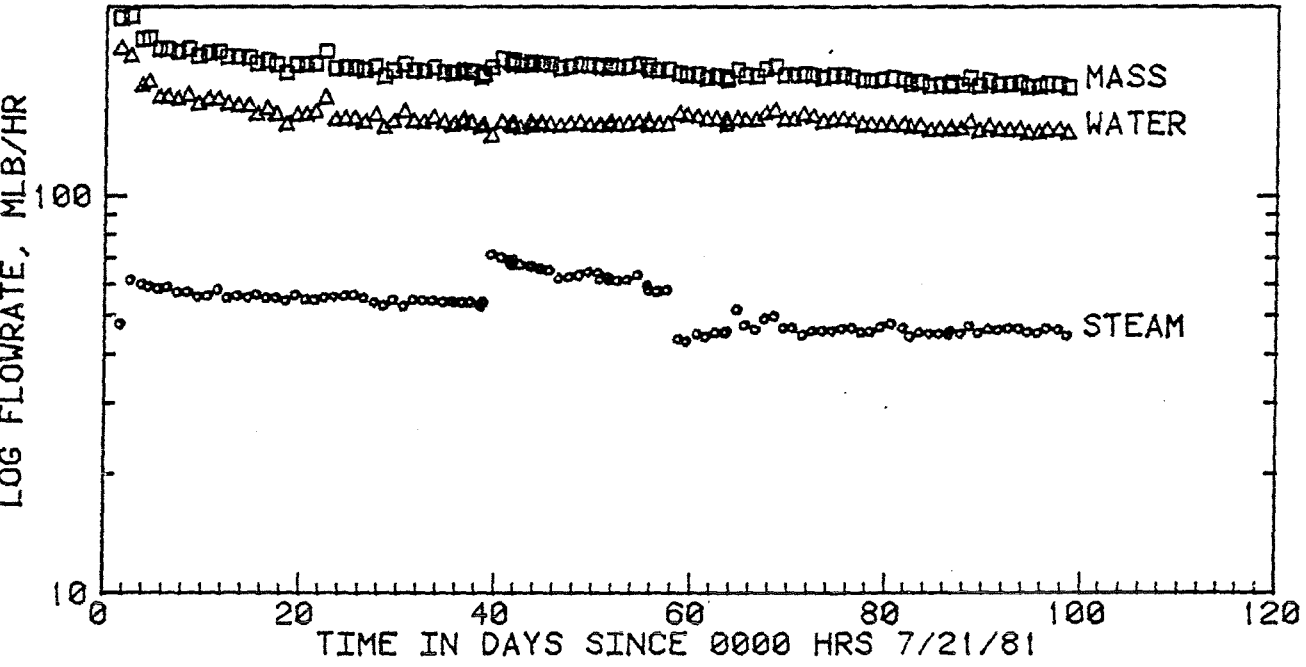
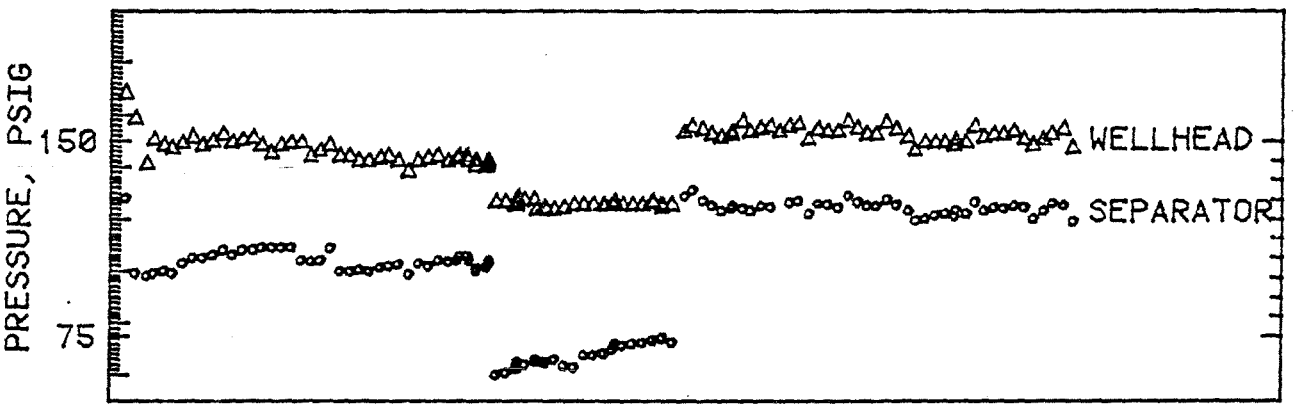
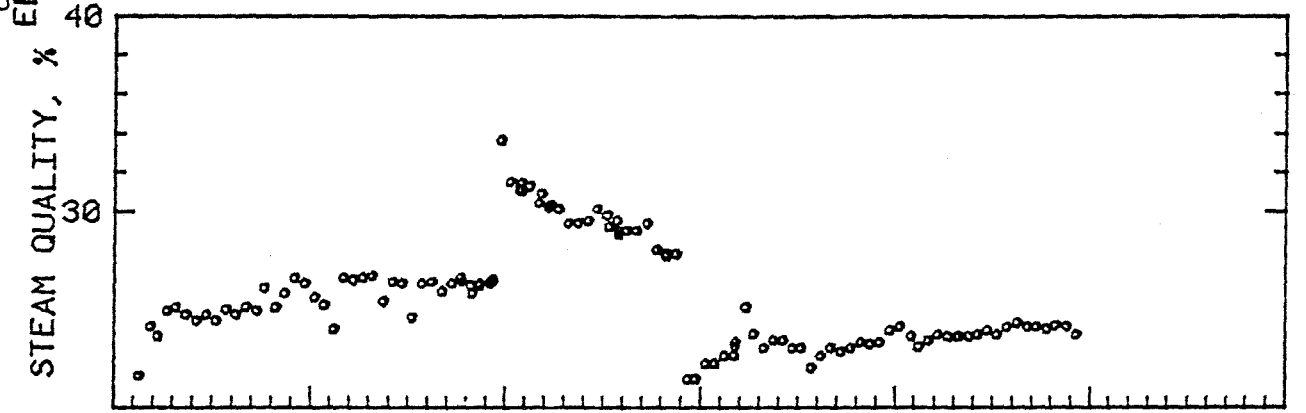
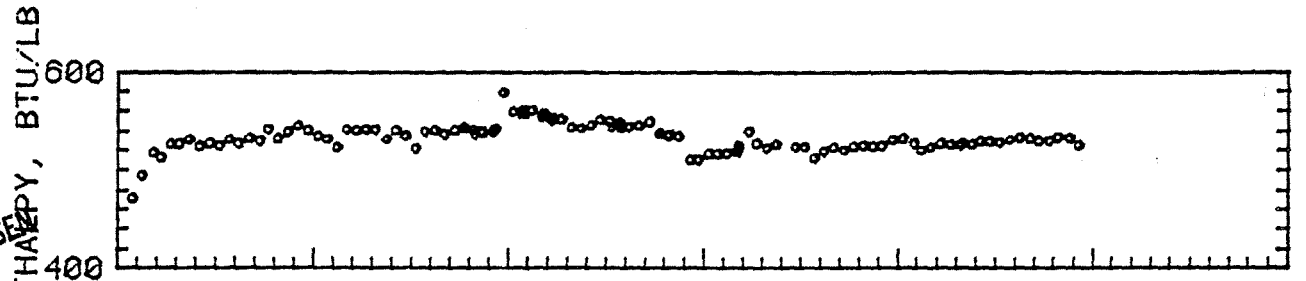
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NOV 17 1981

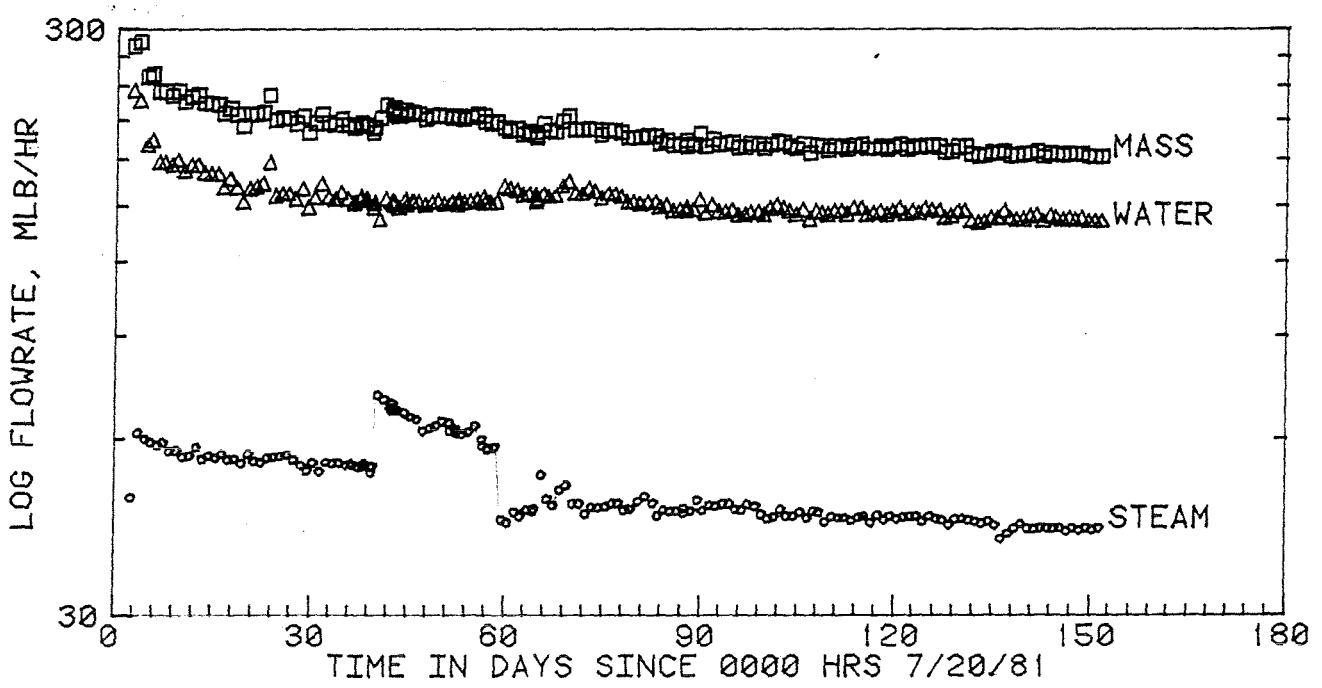
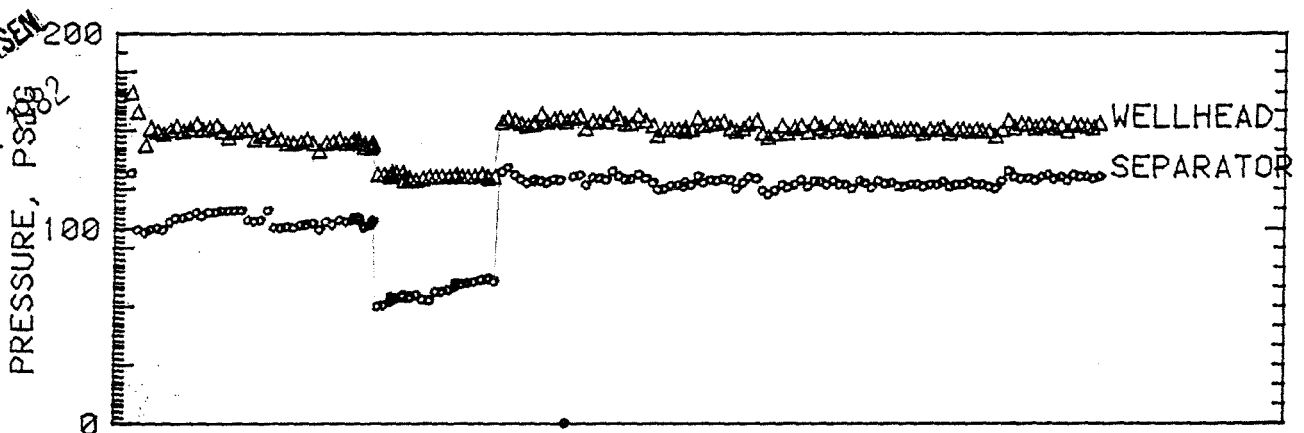
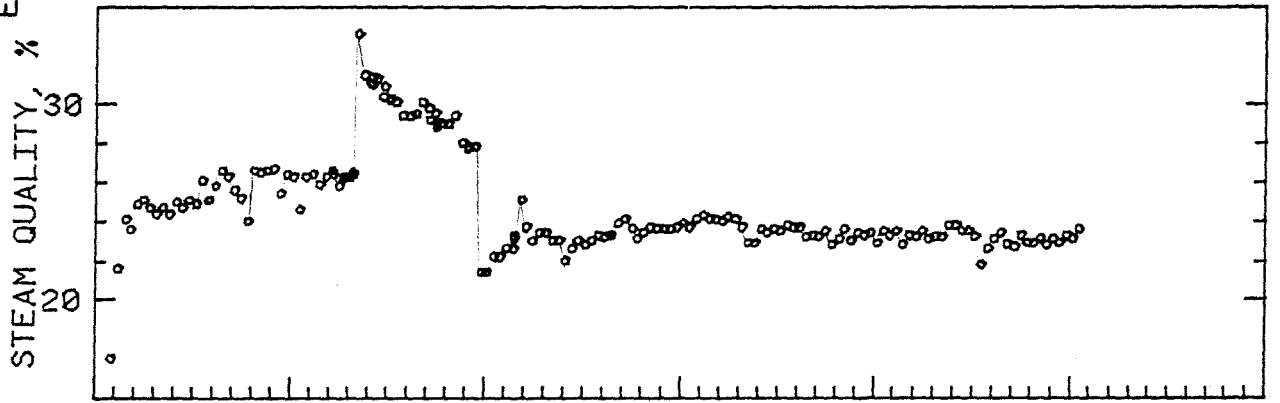
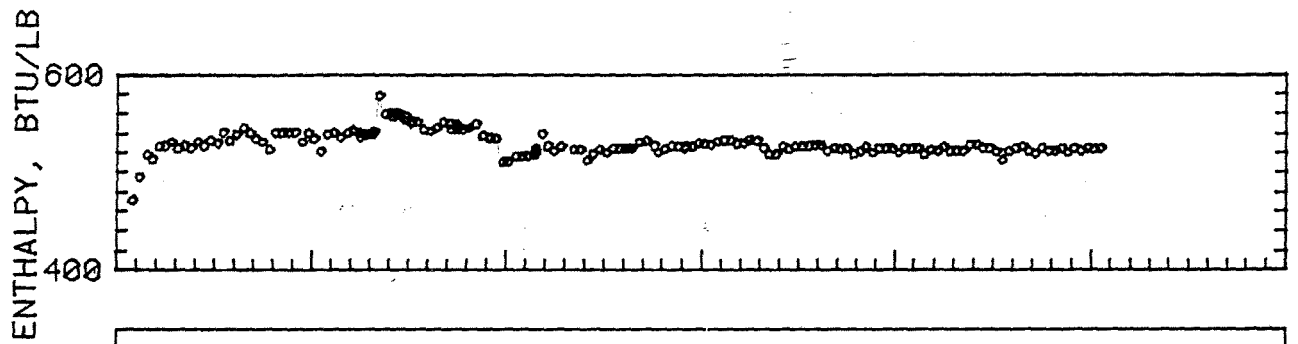
TIME IN DAYS SINCE 0000 HRS 7/21/81

BACA 13 FLOWTEST NO. 6: 7/21/81 -- 11/20/81

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NOV 24 1981

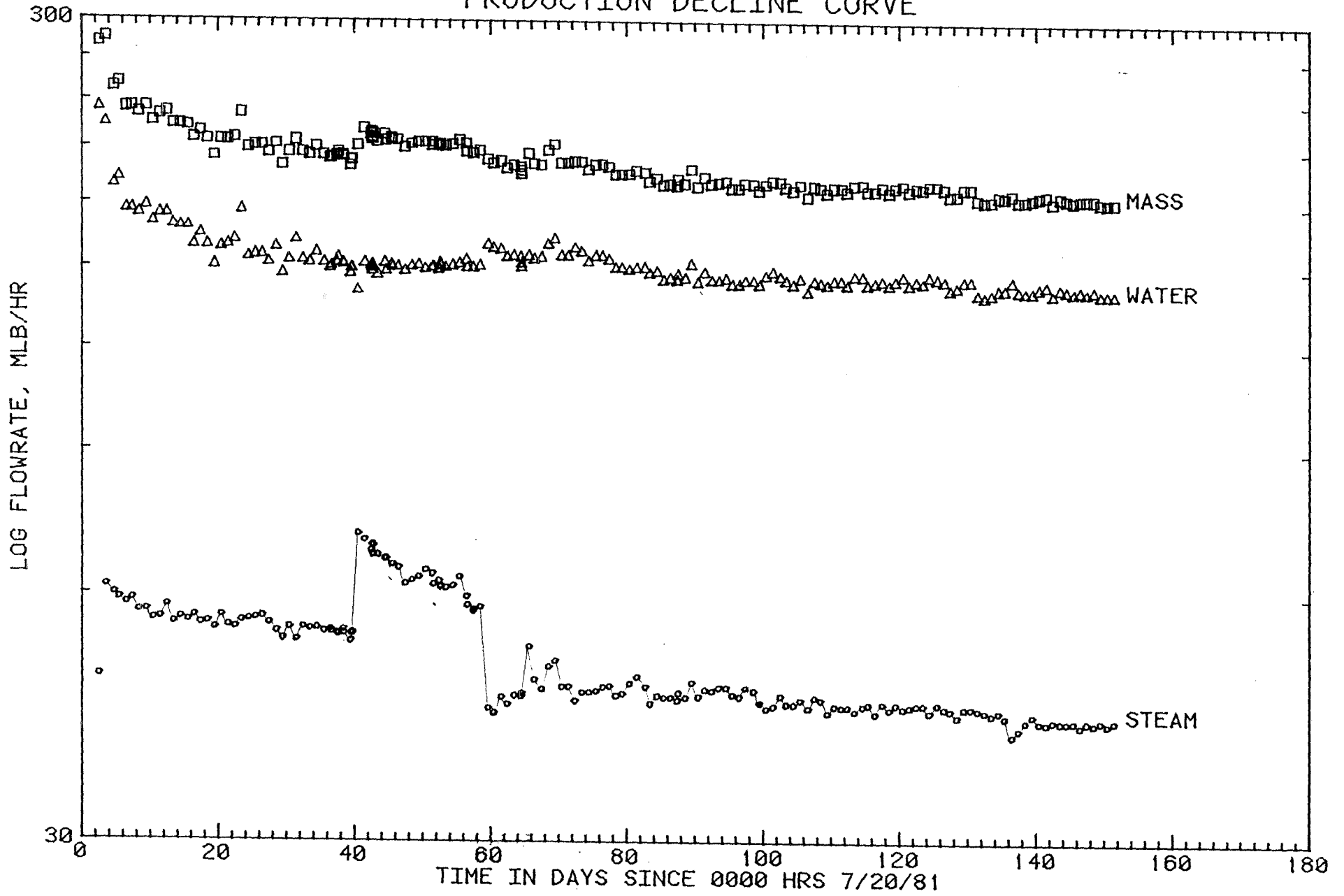


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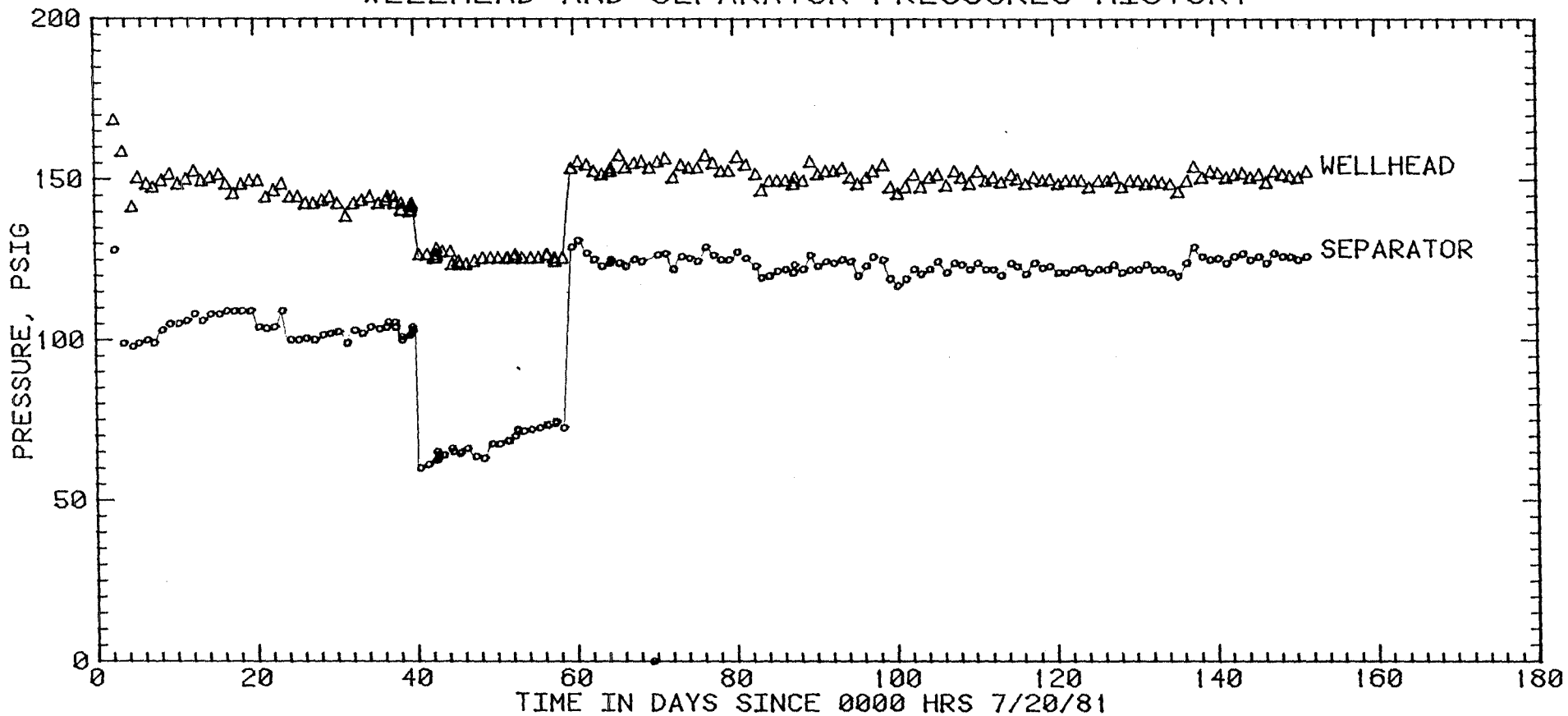


R.O. ENGBRETSSEN
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BACA NO.13 FLOWTEST#6 7/21/81-12/18/81
PRODUCTION DECLINE CURVE

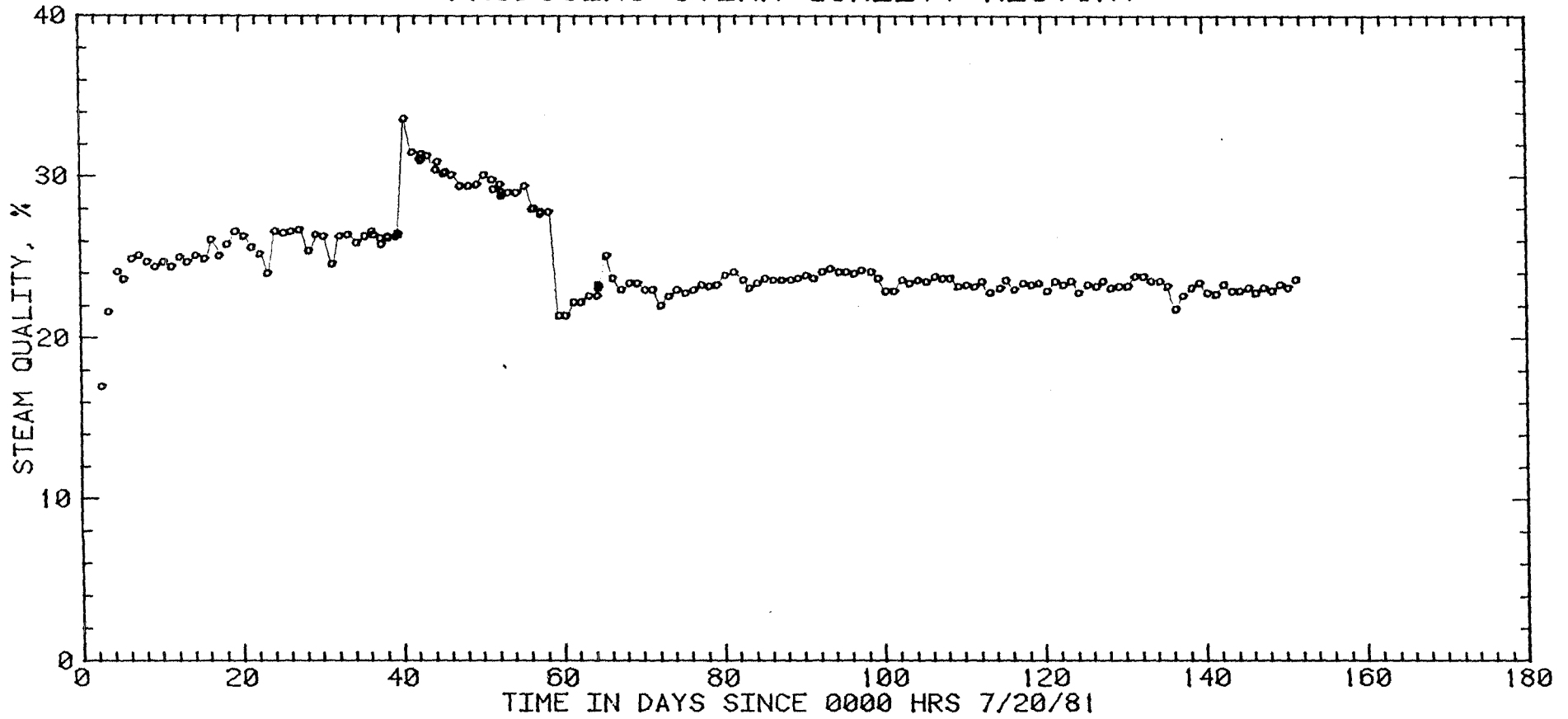


BACA NO. 13 FLOWTEST#6 7/21/81-12/18/81
WELLHEAD AND SEPARATOR PRESSURES HISTORY

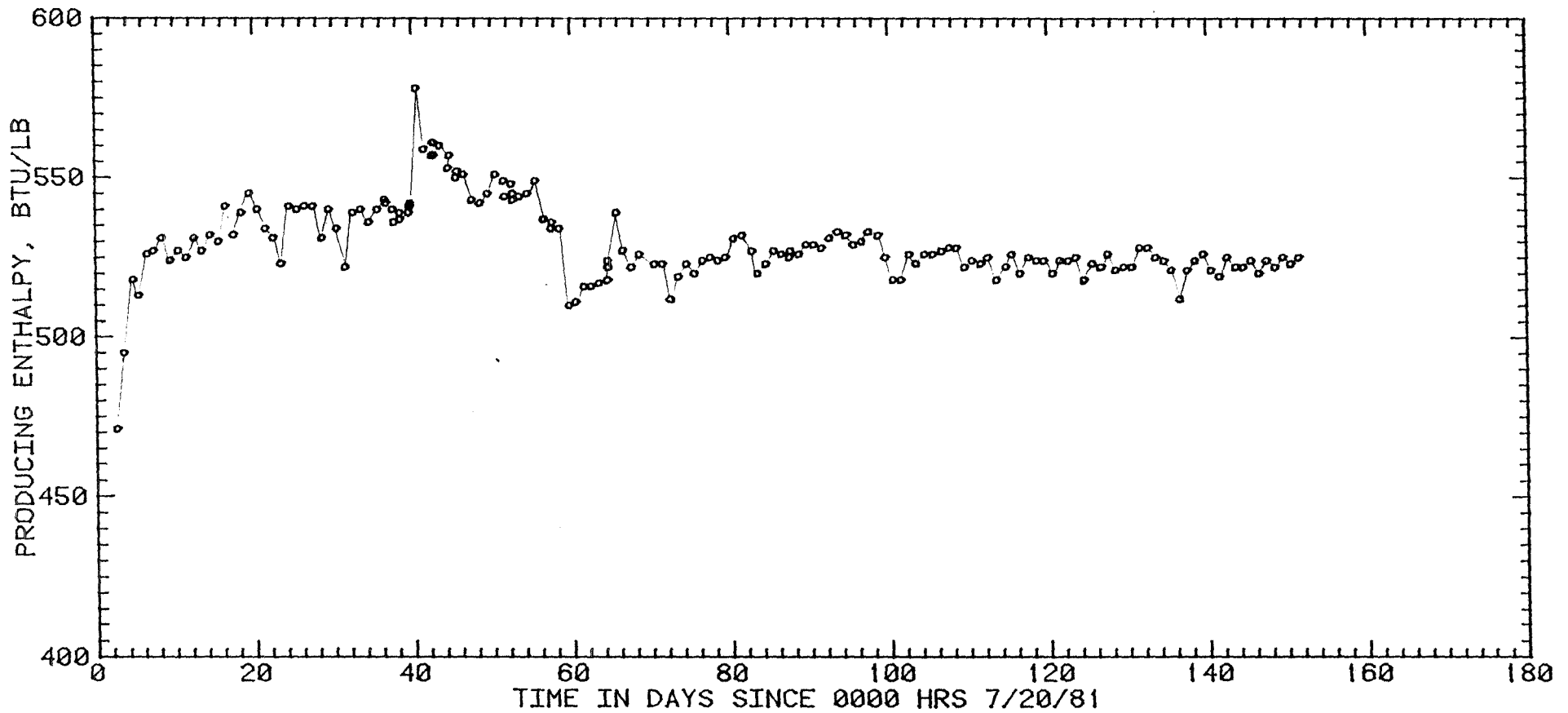


BACA NO.13 FLOWTEST#6 7/21/81-12/18/81

PRODUCING STEAM QUALITY HISTORY

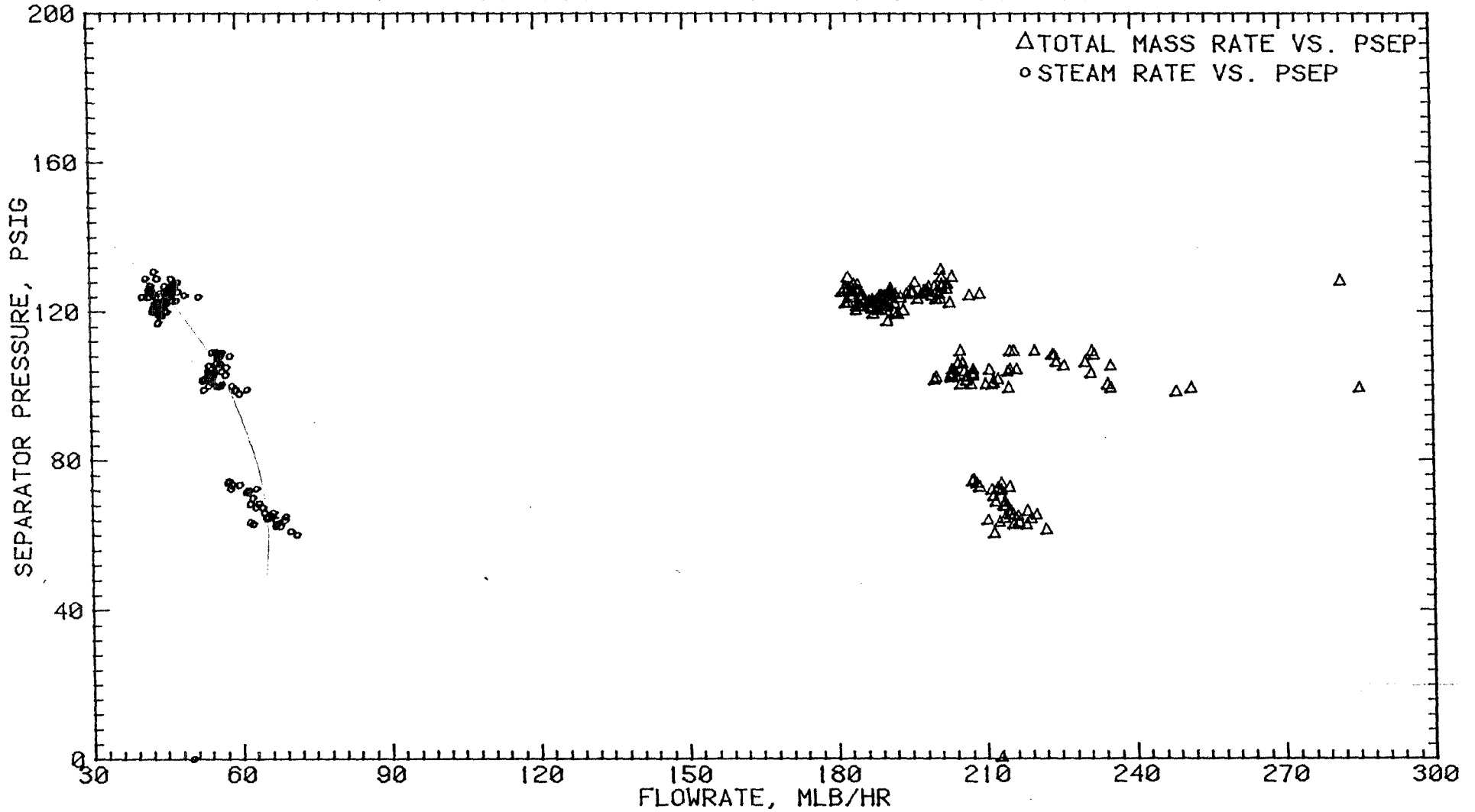


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PRODUCING ENTHALPY HISTORY

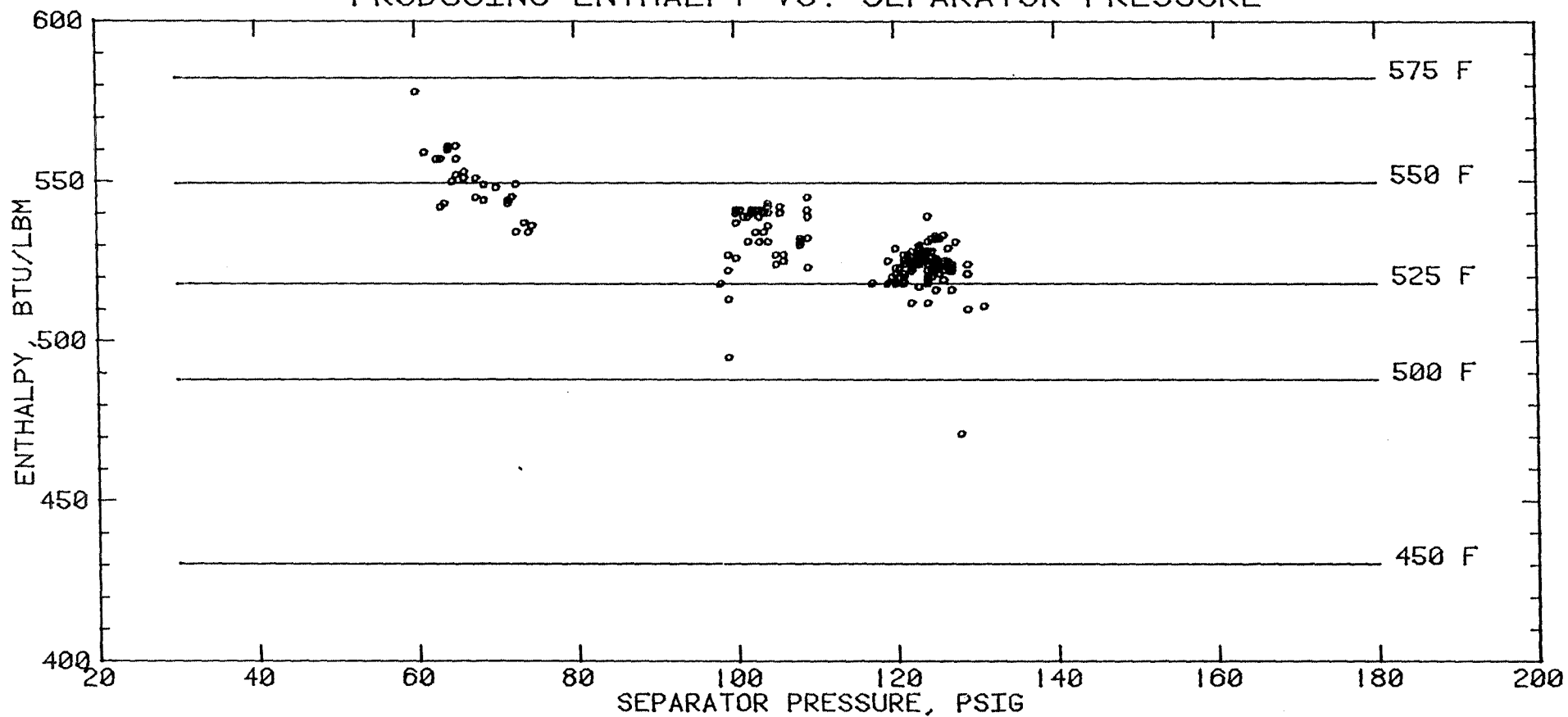


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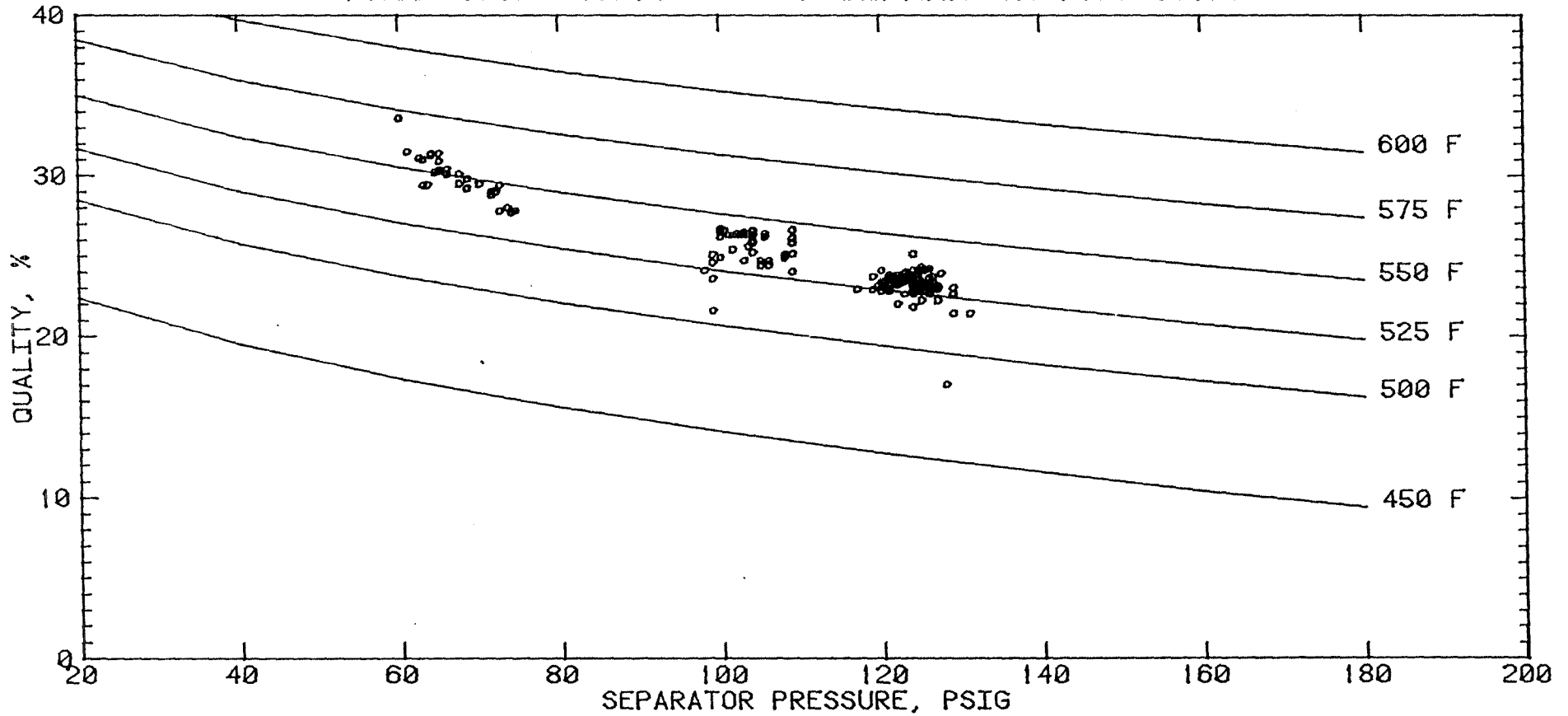
OBSERVED STEAM AND TOTAL MASS DELIVERABILITY CURVE



BACA NO.13 FLOWTEST#6 7/21/81-12/18/81
PRODUCING ENTHALPY VS. SEPARATOR PRESSURE



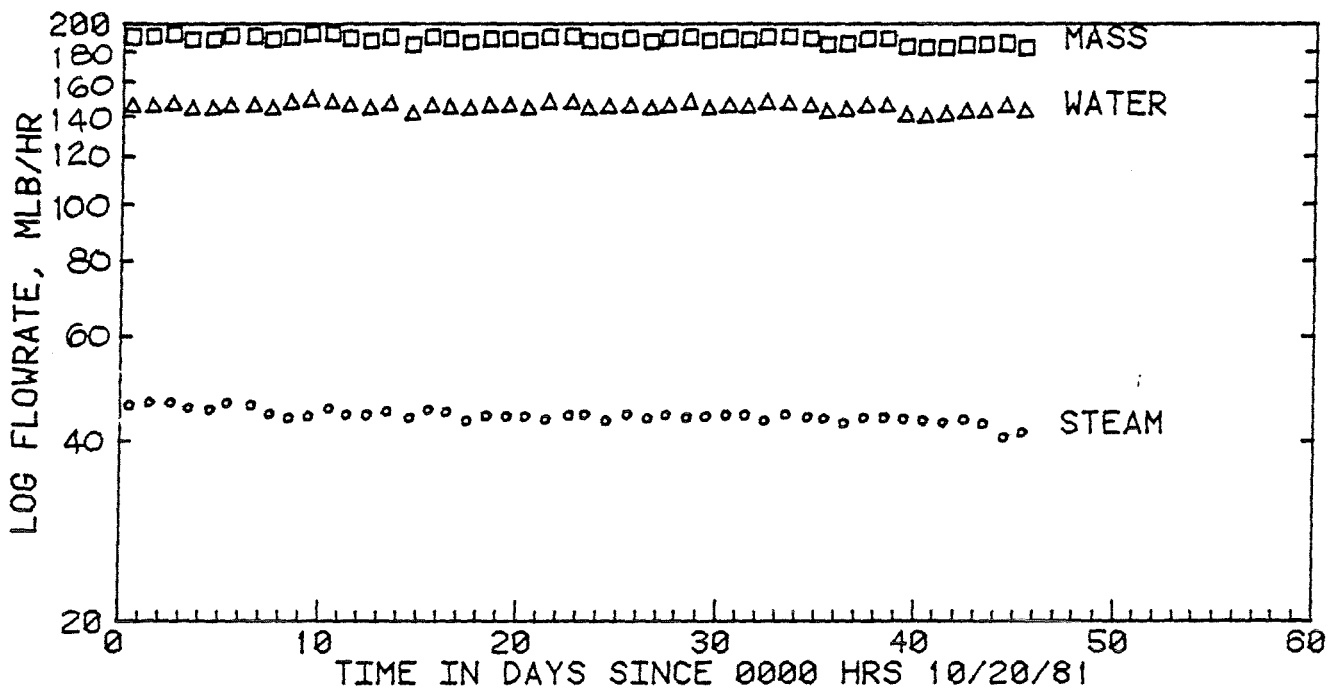
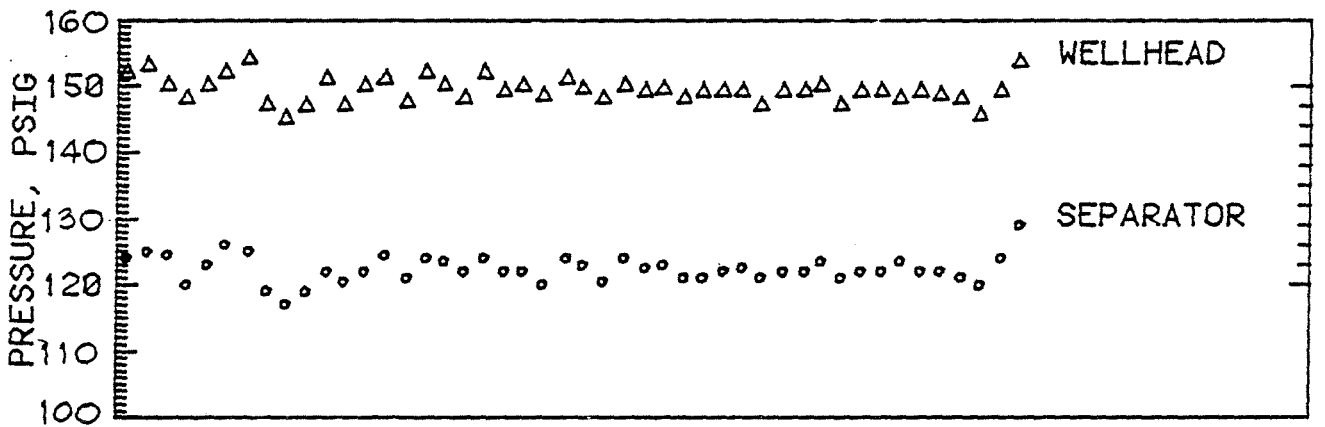
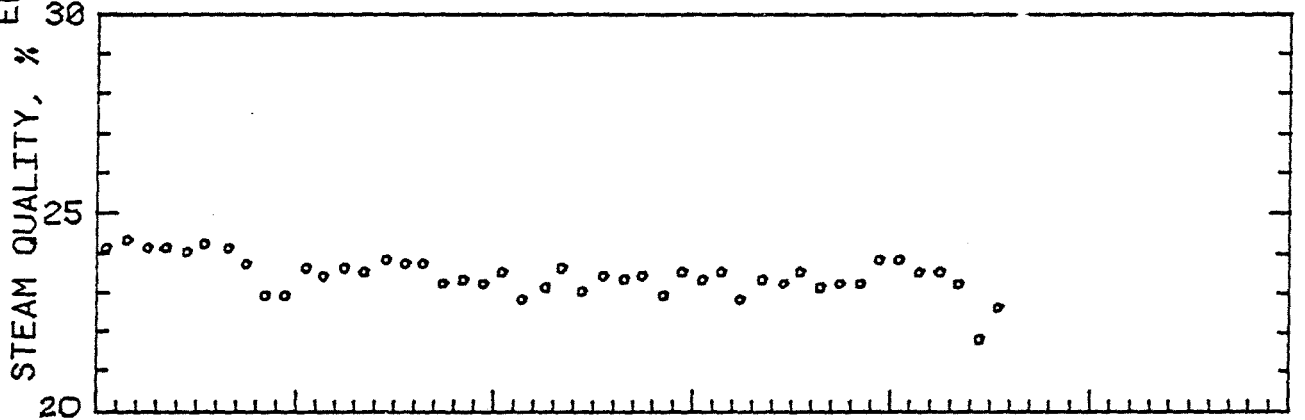
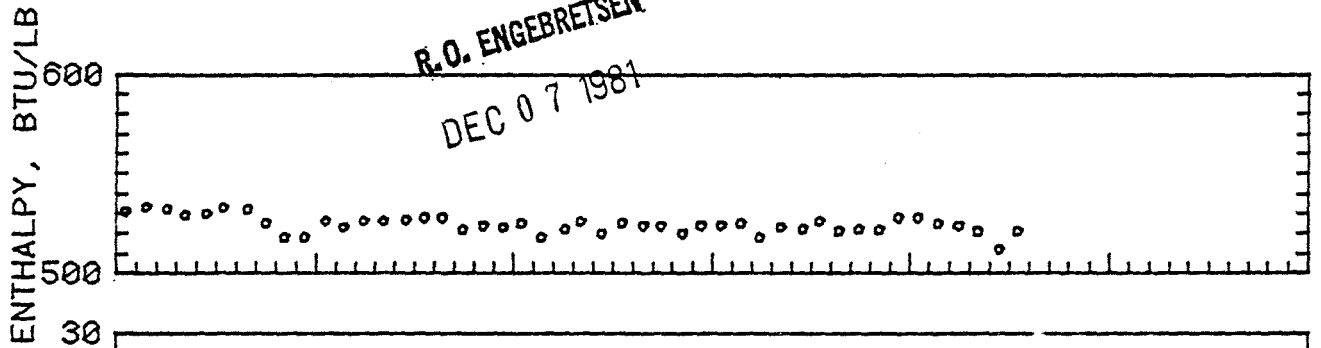
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PRODUCING QUALITY VS. SEPARATOR PRESSURE



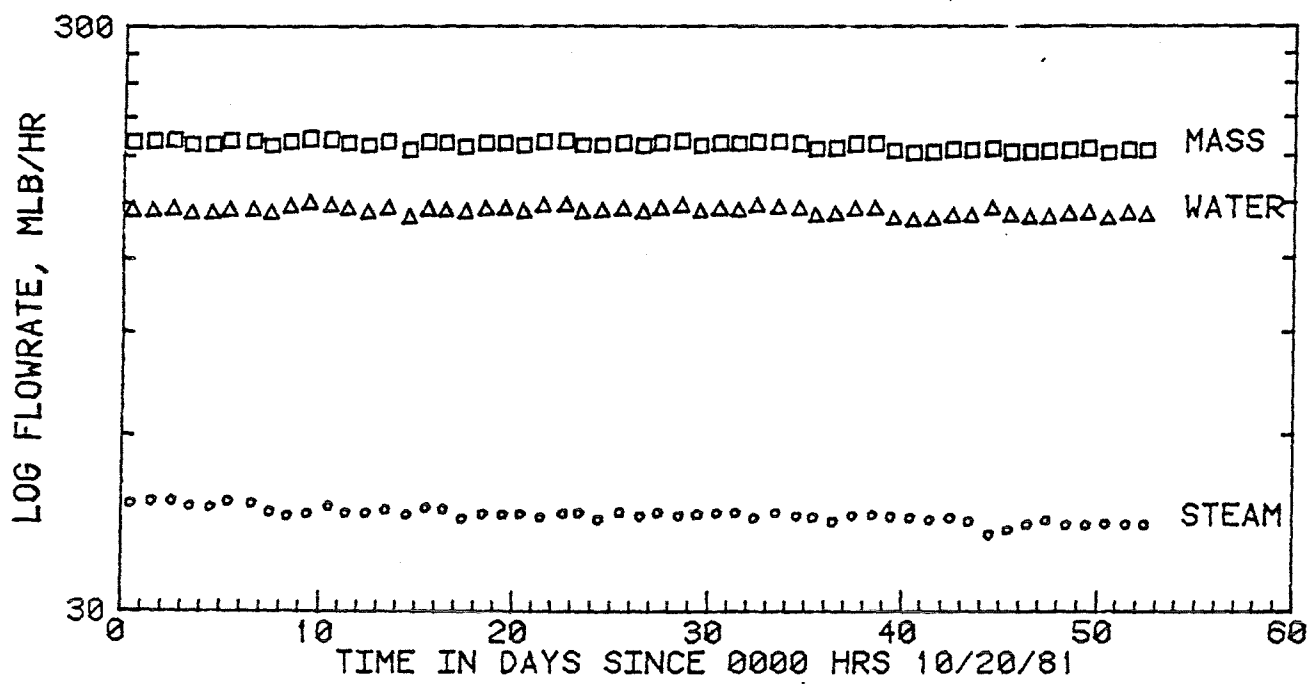
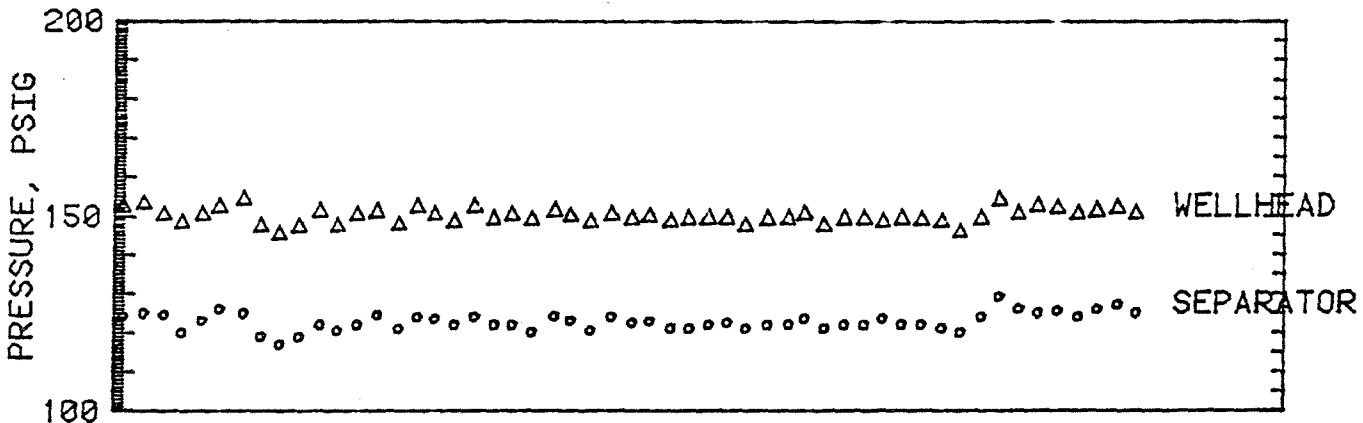
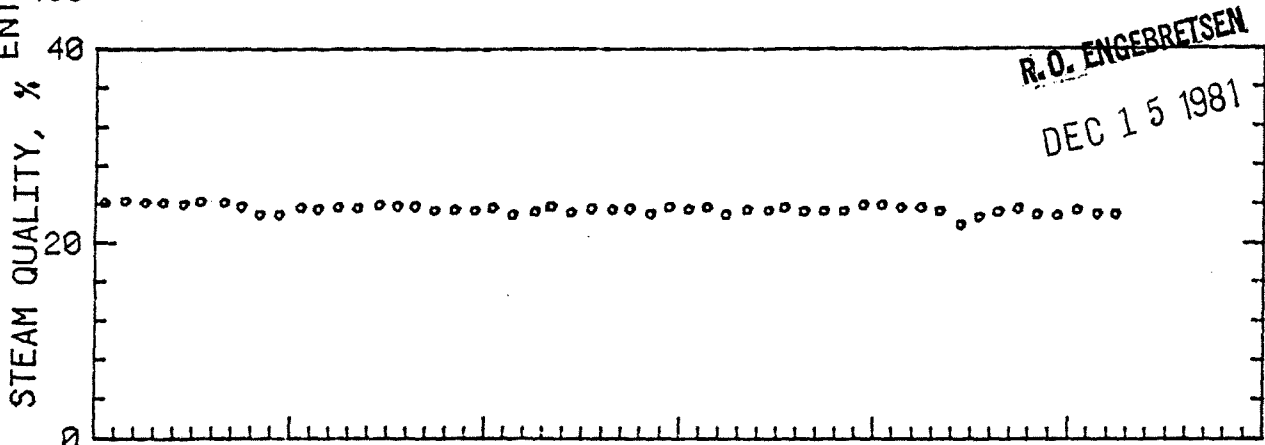
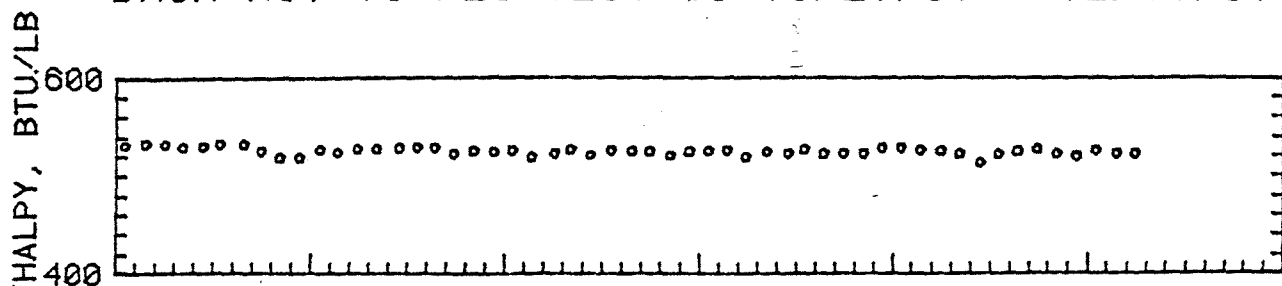
BACA NO.13 FLOWTEST#6 10/21/81-12/04/81

R.O. ENGBRETSSEN

DEC 07 1981



BACA NO. 13 FLOWTEST #6 10/21/81 - 12/11/81



Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 7-21-81 TIME 1620 HRS. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 363 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE _____ TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			140 PSIG
Δ P			14.50 PSI
FLOW RATE			
MASS			278,845 #
STEAM			75,288 #
WATER			203,557 #

TOTAL MASS FLOW _____ ENTHALPY-EFF. _____

STEAM FRAC. 27% (ASSUMED) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBRETTSEN

JUL 27 1981

REMARKS:

1. OPEN WELL @ 1520 HRS., 7-21-81

2. WHP PRIOR TO OPENING — 150 PSIG

3. ORIFICE SIZES 2" METERS # 1 — 6.022" @ 10.04"

CSTD0E " # 2 — 6.022" FLOWLINE

" # 3 — 5.000"

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA NR 13

DATE 7-22-81 TIME 1215 hrs. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 168 PSIG WHT 367 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 128 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	6"
QUALITY			
P ₁	127 PSIG	127 PSIG	
Δ P	4 PSI	16" W.C.	
FLOW RATE			
MASS			
STEAM	47,695 #/hr.		
WATER		233,746 #/hr.	

TOTAL MASS FLOW 281,441 #/hr. ENTHALPY-EFF. 471. BTU/#

STEAM FRAC. 16.95% EQUIV. TEMP. 480 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBRETSSEN

JUL 27 1981

REMARKS:

1. SWITCHED FLOW THRU SEPARATOR @ 0730 HRS. 7-22-81

2. ADJUSTED SEPARATOR PRESSURE FROM 128 PSIG TO 100 PSIG @ 1510 HRS. 7-22-81

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Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-23-81 TIME 1148 hrs. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 158 PSIG WHT 362 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 99 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE	
ORIFICE	6"	6"	6"	
QUALITY			①	②
P ₁	98 PSIG	98.5 PSIG	147.8 PSIG	141.34 PSIG
Δ P	18.8" Hg.	14.5" W.C.	10.11 PSI	17.42 PSI
FLOW RATE				
MASS			270,426 #	
STEAM	61,429 #/hr.		60,216 #	
WATER		223,669 #/hr.	219,209 #/hr.	

TOTAL MASS FLOW 285,098 #/hr. ENTHALPY-EFF. 405 BTU #
 STEAM FRAC. 21.55 % EQUIV. TEMP. 506 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBREITSEN
 JUL 27 1981

REMARKS:

CSTD0E

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-24-81 TIME 1559 TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 141 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 98 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	97 PSIG	98 PSIG	
Δ P	18" Hg.	10.3" W.C.	
FLOW RATE			
MASS			
STEAM	59,931 #/hr.		
WATER		188,530 #/hr.	

TOTAL MASS FLOW 248,461 #/hr. ENTHALPY-EFF. 518 BTU/#
 STEAM FRAC. 24.12 % EQUIV. TEMP. 525 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

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JUL 27 1981

REMARKS:

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Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-25-81 TIME 0935 hrs. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 350 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE 119 PSIG

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	98 PSIG	98 PSIG	
Δ P	17.4" Hg.	10.7" w.c.	
FLOW RATE			
MASS			
STEAM	59,234 #/hr.		
WATER		192,156 #/hr.	

TOTAL MASS FLOW 251,390 #/hr. ENTHALPY-EFF. 513 Btu/#

STEAM FRAC. 23.56 % EQUIV. TEMP. 521 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBREITSEN

JUL 27 1981

REMARKS:

CSTDOE

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-26-81 TIME 1056 TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 148 PSIG WHT 358 °F
SEPARATOR PRESSURE 100 PSIG

CALORIMETRIC: SEP. EFF. _____ %
TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	100 PSIG	100 PSIG	
Δ P	16.6 "Hg.	9 "w.c.	
FLOW RATE			
MASS			
STEAM	58,405 #/hr.		
WATER		176,165 #/hr.	

TOTAL MASS FLOW 234,570 #/hr. ENTHALPY-EFF. 526 BTU/#
STEAM FRAC. 24.9 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

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Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA NR 13

DATE 7-27-81 TIME 0730 hrs. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 147 PSIG WHT 352°F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 99 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	98 PSIG	98.5 PSIG	
ΔP	17.3" Hg.	9" W.C.	
FLOW RATE			
MASS			
STEAM	59,049 #/HR.		
WATER		176,215 #/HR.	

TOTAL MASS FLOW 235,264 #/HR. ENTHALPY-EFF. 5.27 Btu/#
 STEAM FRAC. 25.10% EQUIV. TEMP. 532°F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas Mi.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R. O. ENGBRETSSEN

JUL 29 1981

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Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-28-81 TIME 0820 hrs. TEST NO. 6 CHOKE TYPE _____

FLOW RATE DATA

WHP 149 PSIG WHT 359 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 103 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	102 PSIG	103 PSIG	
Δ P	15.6 "Hg.	8.8 "W.C.	
FLOW RATE			
MASS			
STEAM	57,181 #/hr.		
WATER		174,098 #/hr.	

TOTAL MASS FLOW 231,279 #/hr. ENTHALPY-EFF. 526 BTU/#
 STEAM FRAC. 24.72 % EQUIV. TEMP. 531

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBREITSEN

JUL 29 1981

REMARKS:

DATA ABOVE WERE TAKEN @ STABLE FLOW

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Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 7-20-81 TIME 0847 hrs. TEST NO. G CHOKE TYPE _____

FLOW RATE DATA

WHP 151 PSIG WHT 350 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 105 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	104 PSIG	105 PSIG	
Δ P	15.4 "Hg.	9.2 "w.c.	
FLOW RATE			
MASS			
STEAM	57,308 #/hr.		
WATER		177,925 #/hr.	

TOTAL MASS FLOW 235,253 #/hr. ENTHALPY-EFF. 524 BTU/#
 STEAM FRAC. 24.36 % EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O Mi.	Wt. H ₂ O Grams	Vol. Gas Mi.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensibile By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R.O. ENGBRETSSEN
 JUL 24 1981

REMARKS:

CSTDOE

R. O. ENGBREITSEN

FEB 17 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA #13

DATE 2-16-82 TIME 1100 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 154 PSIG WHT 361 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE _____ TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			143 PSIG
Δ P			16 PSI
FLOW RATE			
MASS			307,239 # / hr.
STEAM			76,810 # / hr.
WATER			230,429

TOTAL MASS FLOW _____ ENTHALPY-EFF. _____
STEAM FRAC. 25% (ASSUMED) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

1. OPEN WELL @ 0952 HRS., 2-16-82
2. WHP PRIOR TO OPENING = 60 PSIG
3. START WATER INJECTION @ BACA #18, 1500 HRS., 2-16-82

R.O. ENGBRETSSEN

FEB 17 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 2-16-82 TIME 1525 hrs TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 152 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE _____ TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			138 PSIG
Δ P			16 PSI
FLOW RATE			
MASS			303,152
STEAM			75,188 #
WATER			227,364 #

TOTAL MASS FLOW _____ ENTHALPY-EFF. _____
STEAM FRAC. 25% (ASSUMED) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSLE
 FEB 17 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13
 DATE 2-17-82 TIME 1130 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 134 PSIG WHT 351 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE _____ TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			123 PSIG
Δ P			17.5 PSI
FLOW RATE			
MASS			302,543 # / hr.
STEAM			75,636
WATER			226,908

TOTAL MASS FLOW _____ ENTHALPY-EFF. _____
 STEAM FRAC. 25% (ASSUMED) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 2-18-82 TIME 1230 hrs TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 120 PSIG WHT 394 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE _____ TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			112 PSIG
Δ P			15 PSI
FLOW RATE			
MASS			271,823
STEAM			67,956
WATER			203,867

TOTAL MASS FLOW _____ ENTHALPY - EFF. _____
 STEAM FRAC. 25% (assumed) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 2-17-82 TIME 0905 #~~PS~~ TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 124 PSIG WHT 347 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE _____

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE			6"
QUALITY			
P ₁			117 PSIG
Δ P			15 PSI
FLOW RATE			
MASS			276,360 #/hr.
STEAM			69,090
WATER			207,270

TOTAL MASS FLOW _____ ENTHALPY-EFF. _____

STEAM FRAC. 25% (ASSUMED) EQUIV. TEMP. _____

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No. 13

DATE 2-19-82 TIME 1410 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 148 PSIG WHT 260 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	6"
QUALITY			
P ₁	130 PSIG	130 PSIG	144 PSIG
Δ P	4.1 "Hg.	6.8 "W.C.	4 PSI
FLOW RATE			
MASS			198,968 #/HR.
STEAM	32,471 #/HR.		34,959 #/HR.
WATER		152,435 #/HR.	164,009 #/HR.

TOTAL MASS FLOW 184,926 #/HR. ENTHALPY-EFF. 478 BTU/#
 STEAM FRAC. .17.57% EQUIV. TEMP. 491 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

1. SWITCHED FLOW THRU SEPARATOR @ 0915 HRS., 2-19-82
2. FLOW NOT STABLE YET.

R.O. ENGBRETSSEN
FEB 22 1982

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT

JAMES B. FA...
MAR 01



WELL BACA No 13
DATE 2-20-82 TIME 1045 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 178 PSIG WHT 375 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 158 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY					
P	158 PSIG	157 PSIG	175	172	164
Δ P	4.6 "Hg.	8.8 "w.c.	5.5	7	7.5
FLOW RATE					
MASS					
STEAM	37,573 #/hr.				
WATER		172,574 #/hr.			

TOTAL MASS FLOW 210,167 #/hr. ENTHALPY-EFF. 493 BTU/#
STEAM FRAC. 17.87 % EQUIV. TEMP. 505 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN
 FEB 22 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL DACA N^o 13

DATE 2-21-82 TIME 0925 hrs TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 167 PSIG WHT 370 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 142 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY					
P ₁	141.5 PSIG	142 PSIG	162	157	147
Δ P	6.3 "Hg.	8.2 "w.c.	6	7	8
FLOW RATE					
MASS					
STEAM	41,757 #/hr.				
WATER		167,051 #/hr.			

TOTAL MASS FLOW 208,808 #/hr. ENTHALPY-EFF. 504 BTU/#
 STEAM FRAC. 20 % EQUIV. TEMP. 514 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

FEB 22 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA NR 13

DATE 2-22-82 TIME 0910 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 167 PSIG WHT 370 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 141 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	140 PSIG	141 PSIG	162	157	148
Δ P	6.3 "Hg.	8.1 "W.C.	6	7	7
FLOW RATE					
MASS					
STEAM	41,555 #/HR.				
WATER		166,057 #/HR.			

TOTAL MASS FLOW 207,612 #/HR. ENTHALPY-EFF. 504 BTU/#
STEAM FRAC. 20.02 % EQUIV. TEMP. 513 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA #13

DATE 2-22-82 TIME 1420 #13 TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 167 PSIG WHT 368 °F

CALORIMETRIC: SEP. EFF. 98.8 %

SEPARATOR PRESSURE 142 PSIG

TEMP. 280 °F PRESS. 142 PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	6"
QUALITY			
P ₁	142 PSIG	142.5 PSIG	162.5 PSIG
Δ P	6.3" Hg.	9.2" B.F.	5.5 PSI
FLOW RATE			
MASS			213,064
STEAM	41,825 #/HR.		45,681 #/HR.
WATER		152,225 #/HR.	167,383 #/HR.

TOTAL MASS FLOW 105,050 #/HR. ENTHALPY-EFF. 517 BTU/#

STEAM FRAC. 21.44 % EQUIV. TEMP. 524 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN
 FEB 23 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA NO 13

DATE 2-23-82 TIME 0915 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 166 PSIG WHT 369 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 141 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	141 PSIG	142 PSIG	161	157	149
Δ P	6.3 "Hg	10.5 "D.F.	6	7	7.5
FLOW RATE					
MASS					
STEAM	41,690 #/hr.				
WATER		163,707 #/hr.			

TOTAL MASS FLOW 205,397 #/hr. ENTHALPY-EFF. 506 BTU/#
 STEAM FRAC. 20.3 % EQUIV. TEMP. 515 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA #13

DATE 2-24-82 TIME 0845 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 162 PSIG WHT 368 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 140 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	140 PSIG	141 PSIG	150	151	148
Δ P	6.3" H ₂ O	9.6" B.P.	5.5	6	6.5
FLOW RATE					
MASS					
STEAM	41,555 #/HR.				
WATER		156,560 #/HR.			

TOTAL MASS FLOW 198,115 #/HR. ENTHALPY-EFF. 512 BTU/#
 STEAM FRAC. 20.98 % EQUIV. TEMP. 520 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

1. BY-PASSED SEPARATOR @ 0900 HRS., 2-24-82
2. CHANGED CAPTURE DISC AND PIPED STEAM/WATER LINES SEPARATELY TO DIFF. DIFFUSERS.

R.O. ENGBREITSEN

FEB 25 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 2-25-82 TIME 0900 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 148.5 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 117 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	117 PSIG	118 PSIG	143	137.5	128.5
Δ P	9 "Hg.	7 "N.C.	7	8.5	9
FLOW RATE					
MASS			270,601		
STEAM	45,655 #/HR.		50,187 #/HR.		
WATER		154,980 #/HR.	170,414 #/HR.		

TOTAL MASS FLOW 200,644 #/HR. ENTHALPY-EFF. 516 BTU/#
STEAM FRAC. 22.75 % EQUIV. TEMP. 523 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY	Non-Condensable By Wt. %
					GM/L	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

1. @ 1230 HRS., 2-24-82 SWITCHED FLOW BACK THRU SEPARATOR.

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA W. 13

DATE 2-26-82 TIME 0900 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 178 PSIG WHT 374 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 150 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	6"
QUALITY			
P ₁	158	150 PSIG	173
Δ P	4.6" Hg.	7.2" a.c.	4.5
FLOW RATE			
MASS			209,946 #/HR.
STEAM	37,593 #/HR.		40,751 #/HR.
WATER		156,009 #/HR.	169,196 #/HR.

TOTAL MASS FLOW 193,692 #/HR. ENTHALPY-EFF. 507 BTU/#
 STEAM FRAC. 19.41 % EQUIV. TEMP. 516 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N-13

DATE 2-26-82 TIME 1345 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 166 PSIG WHT 368 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 138 PSIG TEMP. _____ °F PRESS. _____ PSIG

ORIFICE	STEAM	WATER	TWO-PHASE		
	G"	G"	①	②	③
R	138 PSIG	138.5 PSIG	161	156.5	147
Δ P	7.6 "Hg.	7.3 "w.c.	6.5	7.5	6
FLOW RATE					
MASS			224,565		
STEAM	45,283 #/hr.		50,101		
WATER		157,710 #/hr.	174,465		

TOTAL MASS FLOW 202,993 #/hr. ENTHALPY-EFF. 522 BTU/#
 STEAM FRAC. 22.31 % EQUIV. TEMP. 528 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

MAR 01 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



JAMES D. FALLON
MAR 08 1982

WELL BACA No 13

DATE 2-27-82 TIME 1000 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 156 PSIG WHT 363 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 129 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	127.5 PSIG	128 PSIG	151	145	137
Δ P	7 "Hg.	8 "W.C.	7	7.5	9)
FLOW RATE					
MASS			243,082		
STEAM	41,951 #/hr.		49,175 #/hr.		
WATER		165,396 #/hr.	193,906 #/hr.		

TOTAL MASS FLOW 207,347 #/hr. ENTHALPY-EFF. 500 Btu/#
STEAM FRAC. 20.23% EQUIV. TEMP. 510 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSEN
MAR 1 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13
 DATE 2-28-82 TIME 0900 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 155 PSIG WHT 362 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 129 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	128 PSIG	130 PSIG	150	145	137
Δ P	7 "Hg.	8 "w.c.	6.5	7.5	8
FLOW RATE					
MASS			233,609		
STEAM	42,025 #/hr.		47,353 #/hr.		
WATER		165,330 #/hr.	186,257 #/hr.		

TOTAL MASS FLOW 207,364 #/hr. ENTHALPY-EFF. 500 BTU/#
 STEAM FRAC. 20.27 % EQUIV. TEMP. 510 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N= 13

DATE 3-01-82 TIME 0915 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 161.5 PSIG WHT 366 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 135 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	135 PSIG	136 PSIG	157	152.5	144
Δ P	7.3 "Hg.	7.2" W.C.	7	7.5	8
FLOW RATE					
MASS			233,670 #/hr.		
STEAM	43,251 #/hr.		51,197 #/hr.		
WATER		150,692 #/hr.	182,473 #/hr.		

TOTAL MASS FLOW 200,643 #/hr. ENTHALPY-EFF. 517 BTU/#
 STEAM FRAC. 21.91 % EQUIV. TEMP. 524 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN
MAR 01 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N^o 13

DATE 03-02-82 TIME 0910 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157 PSIG WHT 365 op CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 131.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
	ORIFICE	ORIFICE	ORIFICE	ORIFICE	ORIFICE
ORIFICE	6"	6"	6"	6"	6"
QUALITY			①	②	③
P _i	131 PSIG	131.5 PSIG	151.5	147	139.5
Δ P	7 "Hg.	6.8 "w.c.	6	6.5	7
FLOW RATE					
MASS			214,857		
STEAM	42,468 #/hr.		46,817		
WATER		152,395 #/hr.	168,040		

TOTAL MASS FLOW 194,863 #/hr. ENTHALPY-EFF. 515 BTU/#
STEAM FRAC. 21.79 % EQUIV. TEMP. 522 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O Mi.	Wt. H ₂ O Grams	Vol. Gas Mi.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSER
MAR 13 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13
DATE 03-03-82 TIME 1015 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 161 PSIG WHT 366°F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 135 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	134 PSIG	135 PSIG	157	151.5	142.5
Δ P	7.2 "Hg.	7.2" w.c.	6.5	7	7
FLOW RATE					
MASS			226,586 #/HR.		
STEAM	43,506 #/HR.		47,237	#/HR.	
WATER		156,719 #/HR.	177,349	#/HR.	

TOTAL MASS FLOW 200,225 #/HR. ENTHALPY-EFF. 516 BTU/#
STEAM FRAC. 21.73 % EQUIV. TEMP. 523°F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY <u>1.3125</u> GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
<u>1055 HR.</u>	<u>72</u>	<u>72</u>	<u>3000</u>	<u>3.9375</u>	<u>75.9375</u>	<u>4.1</u>
<u>1058 "</u>	<u>84</u>	<u>84</u>	<u>3000</u>	<u>"</u>	<u>87.9375</u>	<u>4.48</u>
<u>1101 "</u>	<u>88</u>	<u>88</u>	<u>3000</u>	<u>"</u>	<u>91.9375</u>	<u>4.28</u>

REMARKS:

Union Geothermal Co. of New Mexico

R.O. ENGBRETSKY

DAILY TESTING REPORT



WELL BACARNE 13 ^{MAR 25 1982}

DATE 03-04-82 TIME 1020 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 160 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. 99.2 %
 SEPARATOR PRESSURE 134 PSIG TEMP. 284 °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	133 PSIG	134 PSIG	156	151	143
Δ P	7.1 "Hg.	7 "W.C.	6	7.5	8
FLOW RATE					
MASS			216,999		
STEAM	43,061 #/HR.		47,284		
WATER		154,554 #/HR.	169,715		

TOTAL MASS FLOW 197,615 #/HR. ENTHALPY-EFF. 516 BTU/#
 STEAM FRAC. 21.79 % EQUIV. TEMP. 523 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R. O. ENGBRETSSEN

MAR 05 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 03-05-82 TIME 1030 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 163 PSIG WHT 366 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 135 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	135 PSIG	135 PSIG	157	151	143
Δ P	7.2 "Hg.	8.2 "B.F.	6	7	8
FLOW RATE					
MASS			268,753		
STEAM	43,654 #/HR.		48,347 #/HR.		
WATER		144,842 #/HR.	160,408 #/HR.		

TOTAL MASS FLOW 188,496 #/HR. ENTHALPY-EFF. 528 BTU/#
STEAM FRAC. 23.16 % EQUIV. TEMP. 533 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY	Non-Condensibile By Wt. %
					GM/L	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 03-06-82 TIME 0922 HRS. TEST NO. 7 CHOKE TYPE _____

R.O. ENGBRETSSEN
MAR 10 1982

FLOW RATE DATA

SEPARATOR PRESSURE 157 PSIG WHT 362 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 128 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	128 PSIG	128 PSIG	151	145	136
Δ P	7 "Hg.	8.2 "B.F.	7	8	8
FLOW RATE					
MASS					
STEAM	42,025 #/Hr.				
WATER		145,017 #/Hr.			

TOTAL MASS FLOW 187,042 #/Hr. ENTHALPY-EFF. 519 Btu/#
 STEAM FRAC. 22.47% EQUIV. TEMP. 520 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



R.O. ENGBRETTSEN
MAR 08 1982

WELL BACA # 13
 DATE 03-07-82 TIME 1000 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 365 OF CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 133.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
			①	②	③
ORIFICE	6"	6"	6"		
QUALITY					
P ₁	133.5 PSIG	134 PSIG	154.5	150.5	143
Δ P	7.2 "Hg.	6.4" w.c.	7	7.5	8
FLOW RATE					
MASS					
STEAM	43,432 #/hr.				
WATER		147,782 #/hr.			

TOTAL MASS FLOW 191,214 #/hr. ENTHALPY-EFF. 524 Btu/#
 STEAM FRAC. 22.71 % EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN
MAR 09 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13
DATE 03-08-82 TIME 1538 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 161 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 134 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6		
QUALITY			①	②	③
P ₁	134 PSIG	134 PSIG	153.7	148.89	141.38
Δ P	7.1 "Hg.	7" w.c.	6.2	7.06	7.49
FLOW RATE					
MASS			219,103		
STEAM	43,208 #/HR.		47,874 #/HR.		
WATER		154,554 #/HR.	171,229 #/HR.		
TOTAL MASS FLOW	197,762 #/HR.		ENTHALPY-EFF. <u>517 BTU/#</u>		
STEAM FRAC.	21.85 %		EQUIV. TEMP. <u>524 °F</u>		

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensibile By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 03-07-82 TIME 1055 HR. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 163 PSIG WHT 366 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 136.6 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	136 PSIG	136.5	154.26	149.3	142.06
Δ P	7.1 "Hg.	8.6" B.F.	6.03	6.93	7.24
FLOW RATE					
MASS			210,965 #/hr.		
STEAM	43,500 #/hr.		47,847 #/hr.		
WATER		148,294 #/hr.	163,118 #/hr.		

TOTAL MASS FLOW 191,794 ~~#/hr.~~ ENTHALPY-EFF. 525 BTU ~~#/hr.~~
 STEAM FRAC. 22.68 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 03-09-82 TIME 1255 hrs TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157 PSIG WHT 364 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 132.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	132 PSIG	132.5	152.4	147.54	140.6
Δ P	7 "Hg	8.7" BF.	5.95	6.75	7.198
FLOW RATE					
MASS			211,683		
STEAM	42,015 #/hr.		47,015		
WATER		149,250 #/hr.	164,668		

TOTAL MASS FLOW 191,871 #/hr. ENTHALPY-EFF. 519 Btu/#
 STEAM FRAC. 22.21 % EQUIV. TEMP. 526 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R. O. ENGBRETSSEN
MAR 12 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 03-10-82 TIME 1050 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 161 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 134 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	<u>6"</u>	<u>6"</u>	<u>6"</u>
QUALITY			
P	<u>134 PSIG</u>	<u>134 PSIG</u>	
Δ P	<u>7.1 "Hg.</u>	<u>6.9 "W.C.</u>	
FLOW RATE			
MASS			
STEAM	<u>43,208 #/hr.</u>		
WATER		<u>153,446 #/hr.</u>	

TOTAL MASS FLOW 196,654 #/hr. ENTHALPY-EFF. 518 BTU/#
STEAM FRAC. 21.97 % EQUIV. TEMP. 325 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

MAR 12 1982

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT



WELL BACA No 13

DATE 03-11-82 TIME 1125 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 131 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	131 PSIG	131 PSIG	151.86	146.75	138.78
Δ P	7.7 "Hg	9" B.F.	6.55	7.5	7.93
FLOW RATE					
MASS			218,500		
STEAM	44,507 #/hr.		49,550		
WATER		151,847 #/hr.	169,019		
TOTAL MASS FLOW	196,254 #/hr.		522 BTU/#		
STEAM FRAC.	22.67 %		578 °F		
EQUIV. TEMP.					

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

MAR 12 1982

Union Geothermal Co. of New Mexico
DAILY TESTING REPORT



WELL BACA No 13

DATE 03-11-82 TIME 1300 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 198 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. 99.2 %
SEPARATOR PRESSURE 130 PSIG TEMP. 285 °F PRESS. 130 PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	129.5 PSIG	130 PSIG	151.3	146.15	138
Δ P	7.7 "Hg	8.6 "B.F.	6.56	7.618	7.99
FLOW RATE					
MASS			216,512		
STEAM	44,275 #/hr.		49,733		
WATER		148,460 #/hr.	166,779		

TOTAL MASS FLOW 192,735 #/hr. ENTHALPY-EFF. 524 Btu/#
STEAM FRAC. 22.97 % EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 03-12-82 TIME 1415 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157.5 PSIG WHT 364 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 129 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	129 PSIG	129 PSIG	150.047	144.826	137.012
Δ P	7.6 "Hg	6.6 "W.C.	6.475	7.452	7.836
FLOW RATE					
MASS			216,767		
STEAM	43,914 #/hr.		49,033 #/hr.		
WATER		150,203 #/hr.	167,734 #/hr.		

TOTAL MASS FLOW 194,117 #/hr. ENTHALPY-EFF. 521 BTU/#
 STEAM FRAC. 22.62% EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____		
_____	_____	_____	_____	_____		
_____	_____	_____	_____	_____		
_____	_____	_____	_____	_____		

REMARKS:

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT

O. ENGEBREITSEN
MAR 15 1982



WELL RACA No 13

DATE 3-13-82 TIME 0940 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 364 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	6"
QUALITY			
P ₁	130 PSIG	130.5 PSIG	
Δ P	7.4 "Hg.	6.9 "W.C.	
FLOW RATE			
MASS			
STEAM	43,494 #/hr.		
WATER		153,538 #/hr.	

TOTAL MASS FLOW 197,032 #/hr. ENTHALPY-EFF. 517 BTU/#
 STEAM FRAC. 22.07 % EQUIV. TEMP. 524 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN

MAR 15 1982

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT



WELL BACA # 13

DATE 3-14-82 TIME 1000 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 158.5 PSIG WHT 362 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 128 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	128 PSIG	128.5 PSIG	
Δ P	7.1 "Hg.	8.2 " B.F.	
FLOW RATE			
MASS			
STEAM	42,319 #/hr.		
WATER		145,004 #/hr.	

TOTAL MASS FLOW 187,323 #/hr. ENTHALPY-EFF. 520 Btu/#

STEAM FRAC. 22.57 % EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 3-15-82 TIME 1045 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 156 PSIG WHT 363 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 120 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	C"	C"	C"		
QUALITY			①	②	③
P _i	120 PSIG	129.5 PSIG	150.62	145.67	137.87
Δ P	7.4 "Hg.	6.6 "W.C.	6.396	7.29	7.701
FLOW RATE					
MASS			217,183		
STEAM	43,342 #/hr.		48,649		
WATER		150,189 #/hr.	168,534		

TOTAL MASS FLOW 193,531 #/hr. ENTHALPY-EFF. 519 BTU/#
 STEAM FRAC. 22.4 % EQUIV. TEMP. 526 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSEN

MAR 16 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 3-16-82 TIME 1010 ~~hr~~ TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 154 PSIG WHT 362.5 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 127 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	<u>6"</u>	<u>6"</u>	
QUALITY			
P _i	<u>127 PSIG</u>	<u>127.5 PSIG</u>	
Δ P	<u>7.2 "Hg</u>	<u>8.7" B.F.</u>	
FLOW RATE			
MASS			
STEAM	<u>42,461 #/hr.</u>		
WATER		<u>140,386 #/hr.</u>	

TOTAL MASS FLOW 191,847 #/hr. ENTHALPY-EFF. 516 BTU/#
STEAM FRAC. 22.13 % EQUIV. TEMP. 523°F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 3-16-82 TIME 1315 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157 PSIG WHT 304 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	130 PSIG	130.5 PSIG	150.36	145.36	137.67
Δ P	7.3 "Hg.	6.6 "W.C.	6.27	7.15	7.54
FLOW RATE					
MASS			215,340		
STEAM	43,204 #/hr.		48,107		
WATER		150,163 #/hr.	167,233		

TOTAL MASS FLOW 193,367 #/hr. ENTHALPY-EFF. 519 BTU/#
 STEAM FRAC. 22.34 % EQUIV. TEMP. 526 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT

R.O. ENGBRETSSEN



WELL BACA N^o 13

DATE 3-17-82

TIME 0945 HRS. TEST NO. 7

MAR 17 1982

CHOKE TYPE _____

FLOW RATE DATA

WHP 156 PSIG WHT 364 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE 129.5 PSIG

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	129 PSIG	129.5 PSIG	150.32	145.26	137.56
Δ P	7.5 "Hg.	6.7 "W.C.	6.415	7.351	7.76
FLOW RATE					
MASS			217,481		
STEAM	43,629 #/hr.		48,672 #/hr.		
WATER		151,323 #/hr.	168,800 #/hr.		

TOTAL MASS FLOW 194,952 #/hr.

ENTHALPY-EFF. 519 BTU/#

STEAM FRAC. 22.38 %

EQUIV. TEMP. 526 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL RACA DE 13

DATE 3-18-82 TIME 11:5 AM TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157 PSIG WHT 364 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 120 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P _i	120 PSIG	120 PSIG	
Δ P	7.45" Hg.	6.8" W.C.	
FLOW RATE			
MASS			
STEAM	43,638 #/hr.		
WATER		152,435 #/hr.	

TOTAL MASS FLOW 196,073 #/hr. ENTHALPY - EFF. 518 Btu/lb
 STEAM FRAC. 22.26 % EQUIV. TEMP. 525 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 3-19-82 TIME 1415 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 156 PSIG WHT 363 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE 129 PSIG

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	129 PSIG	129.5 PSIG	
Δ P	7.4 "Hg.	6.6 "W.C.	
FLOW RATE			
MASS			
STEAM	43,342 #/hr.		
WATER		150,189 #/hr.	

TOTAL MASS FLOW 193,531 #/hr. ENTHALPY-EFF. 519 BTU/#

STEAM FRAC. 22.40 % EQUIV. TEMP. 526 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



R.O. ENGBRETSSEN

WELL BACA No 13

DATE 3-20-82 TIME 1100 HRS TEST NO. 7 MAR 20 1982 CHOKER TYPE _____

FLOW RATE DATA

WHP 158 PSIG WHT 364 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	130 PSIG	130.5 PSIG	
Δ P	7.3 "Hg.	6.8 "W.C.	
FLOW RATE			
MASS			
STEAM	43,204 #/hr		
WATER		152,422 #/hr.	

TOTAL MASS FLOW 195,626 #/hr. ENTHALPY-EFF. 517 Btu/#
 STEAM FRAC. 22.09 % EQUIV. TEMP. 524 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ Total Mass Wt. Grams	Non-Condensibile By Wt. %	GM/L
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT

R. O. ENGBRETSSEN



WELL BACA 12 13

MAR 22 1982

DATE 3-21-82 TIME 1030 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 156 PSIG WHT 362°F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	130 PSIG	130 PSIG	
Δ P	7.2 "Hg.	6.9 "W.C.	
FLOW RATE			
MASS			
STEAM	42,512 #/HR.		
WATER		153.552 #/HR.	

TOTAL MASS FLOW 196,460 #/HR. ENTHALPY-EFF. 515 BTU/#
 STEAM FRAC. 21.84% EQUIV. TEMP. 523°F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA NR 13

DATE 3-22-82 TIME 1000 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 363 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 120 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120 PSIG	120 PSIG	
Δ P	7.4 "Hg	6.5 "W.C.	
FLOW RATE			
MASS			
STEAM	43,342 #/hr.		
WATER		149,060 #/hr.	

TOTAL MASS FLOW 192,402 #/hr. ENTHALPY-EFF. 520 BTU/#
 STEAM FRAC. 22.53% EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensable By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

R.O. ENGBRETSSEN
MAR 23 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N° 13
 DATE 3-23-82 TIME 1135 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 157.5 PSIG WHT 365 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 130 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	130 PSIG	130.5 PSIG	
Δ P	7.4 "Hg.	6.5 "W.C.	
FLOW RATE			
MASS			
STEAM	43,494 #/HR.		
WATER		149,022 #/HR.	

TOTAL MASS FLOW 192,516 #/HR. ENTHALPY-EFF. 521 BTU/#
 STEAM FRAC. 22.59 % EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA #13

DATE 3-24-82 TIME 1100 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 152 PSIG WHT 361 °F

CALORIMETRIC: SEP. EFF. 99.2 %

SEPARATOR PRESSURE 123 PSIG

TEMP. 282 °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122.5 PSIG	123 PSIG	
Δ P	8.3" Hg.	8.2" B.F.	
FLOW RATE			
MASS			
STEAM	44,797 #/hr.		
WATER		145,145 #/hr.	

TOTAL MASS FLOW 189,942 #/hr.

ENTHALPY-EFF. 526 BTU/#

STEAM FRAC. 23.58 %

EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

DENSITY 1.3125 GM/L

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	Total Mass Wt. Grams	Non-Condensible By Wt. %
<u>1055 hrs.</u>	<u>111</u>	<u>111</u>	<u>2000</u>	<u>3.9375</u>	<u>113.9375</u>	<u>3.46</u>
<u>1102 "</u>	<u>106</u>	<u>106</u>	<u>2000</u>	<u>"</u>	<u>109.9375</u>	<u>3.58</u>
<u>1105 "</u>	<u>103</u>	<u>103</u>	<u>2000</u>	<u>"</u>	<u>106.9375</u>	<u>3.68</u>

REMARKS:

R.O. ENGBREITSEN
MAR 25 1982

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13
DATE 3-25-82 TIME 11:50 AM TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 152 PSIG WHT 361 °F CALORIMETRIC: SEP. EFF. _____ %
SEPARATOR PRESSURE 122.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P ₁	122.5 PSIG	123 PSIG	142.83	137.57	129.42
Δ P	8.3" Hg.	8.2" B.F.	5.982	7.624	8.105
FLOW RATE					
MASS			199,433		
STEAM	44,797 #/HR.		96,979 #/HR.		
WATER		145,145 #/HR.	152,252 #/HR.		
TOTAL MASS FLOW	189,942 #/HR.		522 BTU/#		
STEAM FRAC.	23.52 %		531 °F		

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 3-26-82 TIME 1300 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 151.5 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 123 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122.5 PSIG	123 PSIG	
Δ P	8.2 "Hg.	8.2 "BF.	
FLOW RATE			
MASS			
STEAM	44,531 #/hr.		
WATER		145,145 #/hr.	

TOTAL MASS FLOW 189,676 #/hr. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.48 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

R. O. ENGBREISEN
MAR 26 1982

REMARKS: _____

Union Geothermal Co. of New Mexico

DAILY TESTING REPORT



WELL BACA No 13

DATE 3-27-82 TIME 1010 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	121 PSIG	122 PSIG	
Δ P	8.6" Hg.	5.9" W.C.	
FLOW RATE			
MASS			
STEAM	45,331 #/hr.		
WATER		142,180 #/hr.	

TOTAL MASS FLOW 187,520 #/hr. ENTHALPY-EFF. 531 BTU/#
 STEAM FRAC. 24.17 % EQUIV. TEMP. 535 °F

R. O. ENGBREISEN

CHLORIDES

TRIALS	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 3-28-82 TIME 0910 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 152 PSIG WHT 360 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE 123.5 PSIG

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	123 PSIG	123 PSIG	
Δ P	8.2 "Hg	8.5 "B.F.	
FLOW RATE			
MASS			
STEAM	44,613 #/hr.		
WATER		147,776 #/hr.	

TOTAL MASS FLOW 192,389 #/hr.

ENTHALPY-EFF. 523 BTU/#

STEAM FRAC. 23.19 %

EQUIV. TEMP. 529 °F

R.O. ENGBRETSSEN

CHLORIDES

TRIALS	TIME <u>MAR 29 1982</u>	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 3-27-82 TIME 1100 Hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122 PSIG	122.5 PSIG	
Δ P	8.1 "Hg.	6.1 "W.C.	
FLOW RATE			
MASS			
STEAM	44,182 #/HR.		
WATER		144,566 #/HR.	

TOTAL MASS FLOW 188,748 #/HR. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.41 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	Total Mass Wt. Grams	Density _____ GM/L	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL DACA # 13

DATE 3-30-82 TIME 1250 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150.5 PSIG WHT 361 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE		
ORIFICE	6"	6"	6"		
QUALITY			①	②	③
P _i	122 PSIG	123 PSIG	143.97	138.76	130.7
Δ P	8 "Hg.	6 "W.C.	5.97	7.59	8.04
FLOW RATE					
MASS			200,355 #/hr.		
STEAM	43,914 #/hr.		46,983 #/hr.		
WATER		143,364 #/hr.	153,372 #/hr.		

TOTAL MASS FLOW 187,278 #/hr. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.45 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O Mi.	Wt. H ₂ O Grams	Vol. Gas Mi.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensible By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N° 13

DATE 3-31-82 TIME 1355 Hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 151 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 123 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122 PSIG	123 PSIG	
Δ P	8.15" Hg.	8.3" B.F.	
FLOW RATE			
MASS			
STEAM	44,316 #/Hr.		
WATER		146,027 #/Hr.	

TOTAL MASS FLOW 190,343 #/Hr. ENTHALPY-EFF. 524 BTU/#
 STEAM FRAC. 23.30 % EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

JAMES B. FALLON

DATE 4-1-82 TIME 0020 hrs TEST NO. 7 ~~APR 5 1982~~

FLOW RATE DATA

WHP 150 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	121 PSIG	122 PSIG	
Δ P	8.1 "Hg.	8 "B.F.	
FLOW RATE			
MASS			
STEAM	44,010 #/hr.		
WATER		143,380 #/hr.	

TOTAL MASS FLOW 187,408 #/hr. ENTHALPY-EFF. 525 BTU/lb
 STEAM FRAC. 23.47% EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensibile By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 4-2-82 TIME 1000 HR. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P _i	121.5 PSIG	122 PSIG	
Δ P	7.9 "Hg.	5.9 "W.C.	
FLOW RATE			
MASS			
STEAM	43,563 #/hr.		
WATER		142,189 #/hr.	

TOTAL MASS FLOW 185,752 #/hr. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.45 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 4-2-82 TIME 1250 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150.5 PSIG WHT 361 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122 PSIG	123 PSIG	
Δ P	8" Hg.	6" W.C.	
FLOW RATE			
MASS			
STEAM	43,914 #/hr.		
WATER		143,364 #/hr.	

TOTAL MASS FLOW 187,278 #/hr. ENTHALPY-EFF. 525 Btu/#
 STEAM FRAC. 23.45 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensible By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA Nº 13

DATE 4-3-82 TIME 0857 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 150 PSIG WHT 360 °F

CALORIMETRIC: SEP. EFF. _____ %

SEPARATOR PRESSURE 121 PSIG

TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120 PSIG	121 PSIG	
Δ P	8 "Hg	8.3" B.F.	
FLOW RATE			
MASS			
STEAM	43,588 #/Hr.		
WATER		146,079 #/Hr.	

TOTAL MASS FLOW 189,667 #/Hr. ENTHALPY-EFF. 520 BTU/#

STEAM FRAC. 22.98% EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 4-4-82 TIME 1135 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 149 PSIG WHT 358 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 120 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120 PSIG	120 PSIG	
Δ P	8 "Hg.	0.2" W.C.	
FLOW RATE			
MASS			
STEAM	43,588 #/hr.		
WATER		145,811 #/hr.	

TOTAL MASS FLOW 189,399 #/hr. ENTHALPY-EFF. 520 BTU/#
 STEAM FRAC. 23.01% EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS: _____

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA # 13

DATE 4-5-82 TIME 1330 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 140 PSIG WHT 350 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 121 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120 PSIG	121 PSIG	
Δ P	8.1" H ₂ O	6" W.C.	
FLOW RATE			
MASS			
STEAM	43,855 #/HR.		
WATER		143,415 #/HR.	

TOTAL MASS FLOW 187,270 #/HR. ENTHALPY-EFF. 524 BTU/#
 STEAM FRAC. 23.42% EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL DACA No 13

DATE 4-6-82 TIME 1140 HRS. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 149 PSIC WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 121 PSIC TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120.5 PSIC	121 PSIC	
Δ P	8.2 "Hg.	6 "W.C.	
FLOW RATE			
MASS			
STEAM	44,202 #/HR.		
WATER		143,415 #/HR.	

TOTAL MASS FLOW 187,617 #/HR. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.5% EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 4-7-82 TIME 0945 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 148.5 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 120.5 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120 PSIG	120.5 PSIG	
Δ P	8.3 "Hg.	5.9 "W.C.	
FLOW RATE			
MASS			
STEAM	44,382 #/hr.		
WATER		142,227 #/hr.	

TOTAL MASS FLOW 186,600 #/hr. ENTHALPY-EFF. 527 BTU/#
 STEAM FRAC. 23.78 % EQUIV. TEMP. 532 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA No 13

DATE 4-8-82 TIME 12:00 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 148.5 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 121 PSIG TEMP. _____ °F PRESS. _____ PSIG

ORIFICE	STEAM	WATER	TWO-PHASE		
	6"	6"	①	②	③
QUALITY					
P _i	120.5 PSIG	121 PSIG	140.96	135.89	128.03
Δ P	8.15 "Hg.	8 "B.F.	5.68	7.3	7.81
FLOW RATE					
MASS			193,750		
STEAM	44,070 #/hr.		45,551 #/hr.		
WATER		143,415 #/hr.	148,179 #/hr.		

TOTAL MASS FLOW 187,485 #/hr. ENTHALPY-EFF. 525 BTU/#
 STEAM FRAC. 23.51 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



R. O. ENGEL
APR 14 1982

WELL BACA # 18
 DATE 4-9-82 TIME 0837 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 152 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	122 PSIG	123 PSIG	
Δ P	8.2" Hg.	8.2" B.F.	
FLOW RATE			
MASS			
STEAM	44,449 #/hr.		
WATER		145,145 #/hr.	

TOTAL MASS FLOW 189,594 #/hr. ENTHALPY-EFF. 525 Btu/#
 STEAM FRAC. 23.44 % EQUIV. TEMP. 531 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ Total Mass Wt. Grams	GM/L Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

JUSTICE

Union Geothermal Co. of New Mexico DAILY TESTING REPORT

R.C. L...
APR 14 1982



WELL BACA No 13

DATE 4-10-82 TIME 1000 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 140 PSIG WHT 350 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 121 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	121 PSIG	121.5 PSIG	
Δ P	8.2 "Hg.	6.1 "W.C.	
FLOW RATE			
MASS			
STEAM	44,284 #/hr.		
WATER		144,502 #/hr.	

TOTAL MASS FLOW 188,876 #/hr. ENTHALPY-EFF. 524 BTU/#
 STEAM FRAC. 23.46 % EQUIV. TEMP. 530 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

CSTD0E

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



R.O. ENGEBRETSEN

WELL BSCA No. 13

DATE 4-11-82 TIME 1000 hrs. TEST NO. 7 CHOKE TYPE _____

APR 14 1982

FLOW RATE DATA

WHP 149 WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 122 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	121 PSIG	121.5 PSIG	
Δ P	8.1 "Hg.	8.4' B.F.	
FLOW RATE			
MASS			
STEAM	44,019 #/hr.		
WATER		146,743 #/hr.	

TOTAL MASS FLOW 190,762 #/hr. ENTHALPY-EFF. 521 Btu/#
 STEAM FRAC. 23.05 % EQUIV. TEMP. 527 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____	GM/L
					Total Mass Wt. Grams	Non-Condensibile By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:

STDOE

Union Geothermal Co. of New Mexico DAILY TESTING REPORT



WELL BACA N-13

APR 14 1982

DATE 4-12-82 TIME 1100 HRS TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 148.5 PSIG WHT 360°F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 121 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	6"	6"	
QUALITY			
P ₁	120.5 PSIG	121 PSIG	
Δ P	8" Hg.	6" W.C.	
FLOW RATE			
MASS			
STEAM	43,670 #/Hr.		
WATER		143,413 #/Hr.	

TOTAL MASS FLOW 187,083 #/Hr. ENTHALPY-EFF. 523 Btu/#
 STEAM FRAC. 23.34 % EQUIV. TEMP. 529 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	Non-Condensable By Wt. %
					Total Mass Wt. Grams	
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:
STDOE

R.O. ENGBRETS: **Union Geothermal Co. of New Mexico**
DAILY TESTING REPORT



WELL BACA # 13

DATE 4-13-82 TIME 0830 hrs. TEST NO. 7 CHOKE TYPE _____

FLOW RATE DATA

WHP 151 PSIG WHT 360 °F CALORIMETRIC: SEP. EFF. _____ %
 SEPARATOR PRESSURE 123 PSIG TEMP. _____ °F PRESS. _____ PSIG

	STEAM	WATER	TWO-PHASE
ORIFICE	<u>6"</u>	<u>6"</u>	
QUALITY			
P _i	<u>123 PSIG</u>	<u>123 PSIG</u>	
Δ P	<u>8.1 "Hg.</u>	<u>7.9 " B.F.</u>	
FLOW RATE			
MASS			
STEAM	<u>44,345 #/hr.</u>		
WATER		<u>142,465 #/hr.</u>	

TOTAL MASS FLOW 186,810 #/hr. ENTHALPY-EFF. 528 BTU/#
 STEAM FRAC. 23.74 % EQUIV. TEMP. 533 °F

CHLORIDES

TRIALS	TIME	STEAM LINE PPM	WATER LINE PPM	SEP. EFF.
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NON-CONDENSIBLE GAS

Time	Vol. H ₂ O MI.	Wt. H ₂ O Grams	Vol. Gas MI.	Wt. Gas Grams	DENSITY _____ GM/L	
					Total Mass Wt. Grams	Non-Condensable By Wt. %
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

REMARKS:
1. SHUT-IN WELL @ 0900 hrs., 4-13-82
2. STOPPED WATER INJECTION @ BACA 18, 0856 hrs. 4-13-82
STDOE

UNION

R.O. ENGBREITSEN

Prepared by JPR Checked by MAY 21 1981 sheet

Title BACA NO 13 WATER INJECTION DATA W.O. / A.P.E. NO.

DATE	TIME HRS.	WHP	IVHT OF	AH "V.C.	RATE GPM	CUMMULATIVE M-GALS.	REMARKS
5-13-81	1259	0	120	21	146	0.146	START INJECTION
	1315	VAC.	120	21	146	2.336	FROM BACA NO 4
	1345		145	20	142	6.716	RESERVE PIT
	1410		155	18	135	10.266	
	1445			12	110	14.991	@ 0744 HRS - 1820 HRS
	1500			2	45	16.691	RUN P/T SURVEY #49
	1525			7	84	17.766	
	1545			12	110	19.446	
	1605		77	6	77	21.646	
	1620	0	62	2	45	22.801	
	1700 - 1800					24.601	NO INJECTION
	1820	0	INJECTION UNSTABLE			24.601	START INJECTION
	1900	VAC.	60	8	90	30.001	FROM B-21
	1945		58	9	95	34.051	RESERVE PIT
	2000		50	10	101	35.476	
	2100		40	10	101	41.536	@ 2005 HRS., 5-13-81
	2200			10	101	47.576	TO 0635 HRS., 5-14-81
	2300			10	101	53.656	RUN P/T SURVEY #50
5-14-81	0100			10	101	65.776	
	0200			11	105	71.836	
	0300			11	105	78.136	
	0400			11	105	84.436	
	0500			10	101	90.736	
	0600			10	101	96.796	
	0630			11	105	99.826	
	0645 - 0745					101.401	NO INJECTION
	0800	VAC.	52	12	110	103.051	START AGAIN @ 0745
	0900			12	110	109.651	FROM B6 RESERVE
	1000			12	110	116.251	PIT TO B13
	1045			12	110	121.201	
	1045 - 1145 HRS.						NO INJECTION
							@ 0838 HRS. - 1817 HRS.
							RUN P/T SURVEY #51
	1145	VAC.	72	11.5	108	121.201	START INJECTION
	1200	"	72	11.5	108	122.821	FROM B4 PIT
	1340	"	78	11.5	108	133.621	

UNION

R. O. ENGBRETSSEN

Prepared by JPR

Checked by

Date MAY 21 1981 Sheet

Title BACA NO 13 WATER INJECTION DATA

DATE	TIME HRS.	WHP	WHT OF	ΔH "W.C.	RATE GPM	CUMMULATIVE M. GALS.	REMARKS
5-14-81	1405	VAC.	94	11.5	108	136.321	
	1440		105	12	110	140.101	
	1600		130	12	110	148.901	
	1800		144	12	110	162.101	
	2000		140	12	110	175.301	
	2200		140	12	110	188.501	
5-15-81	2400		142	12	110	201.701	
	0200		145	12	110	214.901	
	0400		143	12	110	228.101	
	0600		138	12	110	241.301	
	0700		139	11.5	108	247.901	
	0800	↓	140	10	101	254.381	
	0830	0				257.411	PUMP DOWN
	0945	0				257.411	SWITCHED PUMP
	1030	VAC.	75	12	110	262.361	AND START PUMPING
	1045		60	12	110	264.011	FROM B6 PIT
	1100		60	13	115	265.661	
	1400		60	13	115	286.361	
	1500		60	16	127	293.261	PUT WATER FROM
	1600		60	13	115	300.881	B4 PIT TO B6 PIT
	1700		59	13	115	307.781	
	1800		55	13	115	314.681	@ ± 0800 HRS. -
	1900		55	18	135	321.581	1430 HRS. ; 1500 HRS.
	2000		55	24	156	329.681	TO 1800 HRS. ;
	2100		55	13	115	339.041	2330 HRS. TO 0200 HRS.
	2200		53	13	115	345.941	SCHLUMBERGER'S
	2300		50	13	115	352.841	WAS IN THE HOLE
5-16-81	0100		50	13	115	366.641	
	0200		58	11	105	373.541	
	0300		56	13	115	379.841	
	0500		56	13	115	393.641	
	0600		57	15	128	400.541	
	0700		57	18	115	407.921	
	0900		60	13	115	421.721	
	1000		59	13	115	428.621	

UNION

Prepared by

JPR

Checked by

R.O. ENGBRETSSEN

Sheet

MAY 21 1981

Title

BACA NO 13 WATER INJECTION DATA

DATE	TIME HRS.	WHP	IVHT °F	AH "V.C.	RATE GPM	CUMULATIVE M. GALS.	REMARKS
5-16-81	1100	VAC.	57	13	115	435.521	
	1400	.	57	13	115	456.221	
	1430 - 1445	HRS.				459.671	SWITCHED PUMPS AND
	1500	VAC.	60	14	119	461.456	BEGAN PUMPING FROM
	1510		70	14	119	462.646	B4 PIT TO B13
	1600		125	13	115	468.596	
	1700		127	13	115	475.496	
	1800		132	13	115	482.396	
	1900		134	13	115	489.296	
	2000		130	12	110	496.196	
	2100		135	12	110	502.796	
	2200		138	13	115	509.396	
	2300		140	12	110	516.296	
5-17-81	2400		142	12	110	522.896	
	0200		140	12	110	536.096	
	0400		138	12	110	549.296	
	0600		140	12	110	562.496	
	0800		134	12	110	575.696	
	1000		136	12	110	588.896	
	1100		138	13	115	595.496	
	1300		136	13	115	609.296	
	1350 - 1430	HRS.				615.046	SWITCHED PUMPS
	1445	VAC.	134	14	119	616.831	AND START PUMPING
	1500		134	16.5	129	618.616	B6 PIT TO B13
	1600		134	16	127	626.356	
	1800		134	15	123	641.596	
	1900		52	18	135	648.976	
	2100		52	17	131	665.176	
5-18-81	2400		52	17	131	688.756	
	0200		52	16	127	704.476	
	0400		50	16	127	719.716	
	0500		50	17	131	727.336	
	0800		50	17	131	750.916	@ 0730 HRS. PUT WATER
	0900		62	16.5	129	758.776	FROM B4 PIT TO
	1000		73	16.5	129	766.516	B6 PIT

Union

State of California

R.O. ENGBRETSSEN

Prepared by JPR

Checked by

MAY 21 1981

Sheet

Title BACA NO 13 WATER INJECTION DATA

DATE	TIME HRS.	WHP	WHT OF	AH "W.C.	RATE GPM	CUMULATIVE M-GALS.	REMARKS
5-18-81	1100	VAC.	81	16	127	774.256	
	1200		85	17	131	781.876	
	1300		85	18.5	137	789.736	
	1400		81	17.5	133	797.956	
	1500		73	17	131	805.936	
	1600		65	17	131	813.796	
	1700		64	16.5	129	821.656	
	1800		62	16.5	129	829.396	
	1900		61	16	127	837.136	
	1930	↓	61	16	127	840.946	RUN P/T SURVEYS
	1955	—	SHUT-OFF INJECTION			844.121	@ 5700' @ 1925 HRS



Union Geothermal Co. of New Mexico

R. O. ENGBREITSEN
MAY 21 1981

SURVEY DATE: 5 - 18/10 - 81

TITLE B13 - 552 P/T (CONT.)

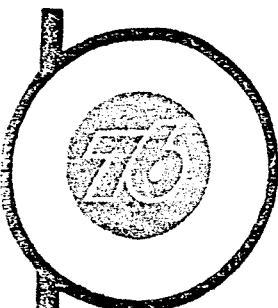
TEMP. EL. S/N : _____ PRESS. EL. S/N : _____
 RANGE : _____ RANGE : _____
 CALIBRATED : _____ CALIBRATED : _____
 CLOCK: _____ HRS. : S/N: _____ CLOCK: _____ HRS. : S/N: _____

WHP AT START OF SURVEY : _____ PSIG
 WHP AT END OF SURVEY : _____ PSIG
 OPENED WELL TO ELEMENT : _____ HRS.
 POH : _____ HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY
 _____ MOS., _____ DAYS, _____ HRS., _____ MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. _____) _____ HRS. _____ 19__

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	5700'	2355	0.452	275	0.638	0.652	1516	@ 1755 hrs. 5-18-81 SHUT-OFF INJECTION
		2410	0.463	277	0.637	0.651	1514	
		2425	0.472	283	0.636	0.650	1511	
		2440	0.482	286	0.635	0.649	1509	
		2455	0.493	290	0.634	0.648	1507	
		0110	0.503	294	0.634	0.648	1507	
		0125	0.512	297	0.633	0.648	1507	
		0140	0.519	300	0.631	0.646	1502	
		0155	0.526	303	0.630	0.645	1500	
		0210	0.533	305	0.630	0.645	1500	
		0225	0.540	308	0.629	0.644	1498	
		0240	0.546	310	0.629	0.643	1495	
		0255	0.552	312	0.629	0.643	1495	
		0310	0.558	314	0.629	0.643	1495	
		0325	0.563	316	0.627	0.641	1491	
		0340	0.568	318	0.627	0.641	1491	
		0355	0.575	321	0.627	0.641	1491	



Union Geothermal Co. of New Mexico R.O. ENGBRETSSEN

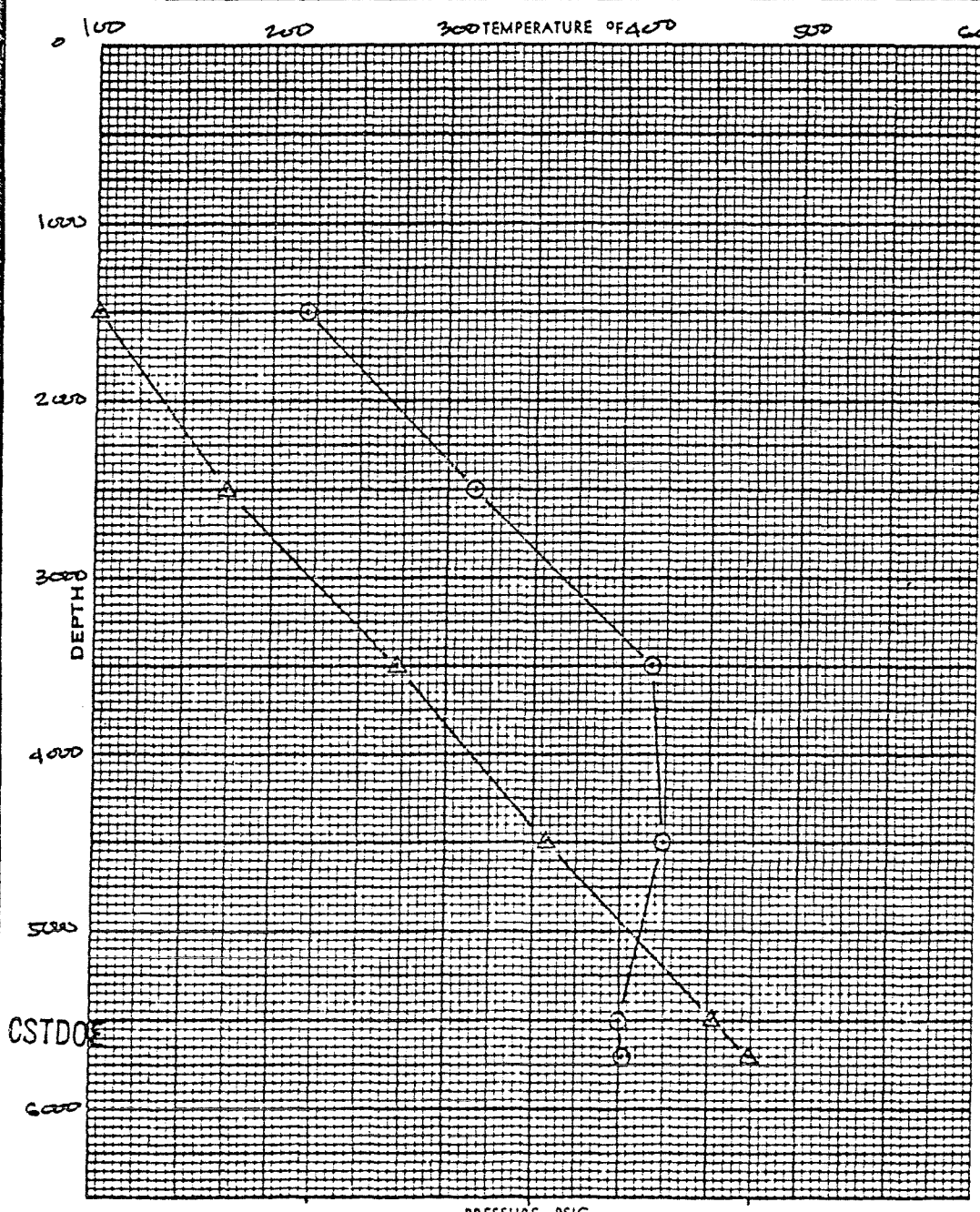
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

MAY 22 1981

OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA # 13
 CASING 20" @ 215' ; 12 3/8" @ 1460' ELEV. 9211 FT. DATE: S-20-81
 LINER DESCRIPTION: 1 1/8" @ 3300' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176 FT.

HOLE DESCRIPTION: _____
 _____ 4575 PSI INSTRUMENT 100 - 702 FAHR.
 _____ KPC 14171 SERIAL NO. KTB 10098

PURPOSE TEMP/PRESS GRADIENT SURVEYS TO 5700 FT. MAX. TEMP. 423 °F @ 4500'
 REMARKS: _____



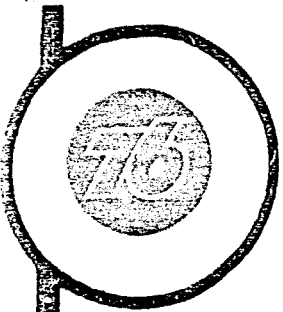
DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
1000	210	5	
2500	316	207	0.20
3500	417	689	0.30
4500	423	1032	0.30
5500	400	1408	0.30
5700	402	1488	0.40

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
1000	210	5	
2500	316	207	0.20
3500	417	689	0.30
4500	423	1032	0.30
5500	400	1408	0.30
5700	402	1488	0.40

○ TEMPERATURE
 △ PRESSURE

BY: JPR



Union Geothermal Co. of New Mexico

SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

R.O. ENGBREITSEN

MAY 22 1981

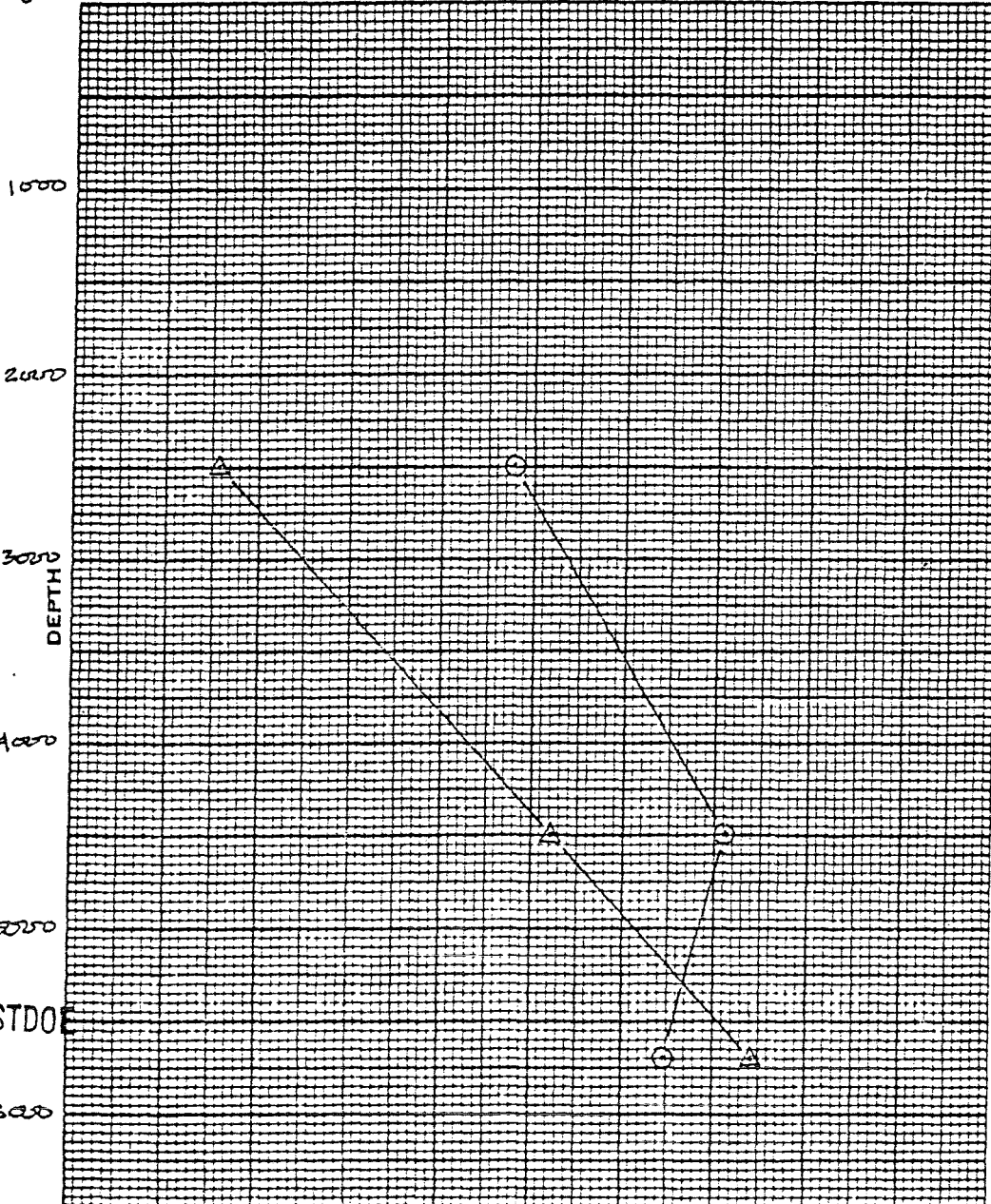
OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA #2 13
 CASING 20" @ 216' ; 13 3/8" @ 1460' ELEV. 9211 FT. DATE: 5-21-81
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176 FT.

HOLE DESCRIPTION:

4575 PSI INSTRUMENT 100-792 FAHR.
KPG 14101 SERIAL NO. KTB 10008

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 5700' MAX. TEMP. 457 °F @ 4500'
 REMARKS:

0 100 200 300 400 500 600 TEMPERATURE OF 400 STABILIZATION PERIOD



PRESSURES		GAUGE	BOMB
CASING, PSI			
DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
2500	330	318	
4500	457	1044	0.36
5700	423	1484	0.36

○ TEMPERATURE
 △ PRESSURE

BY: JPR

R.O. ENGBRETSSEN

FEB 7 1982

B13-557 P/T

Union Geothermal Co. of New Mexico

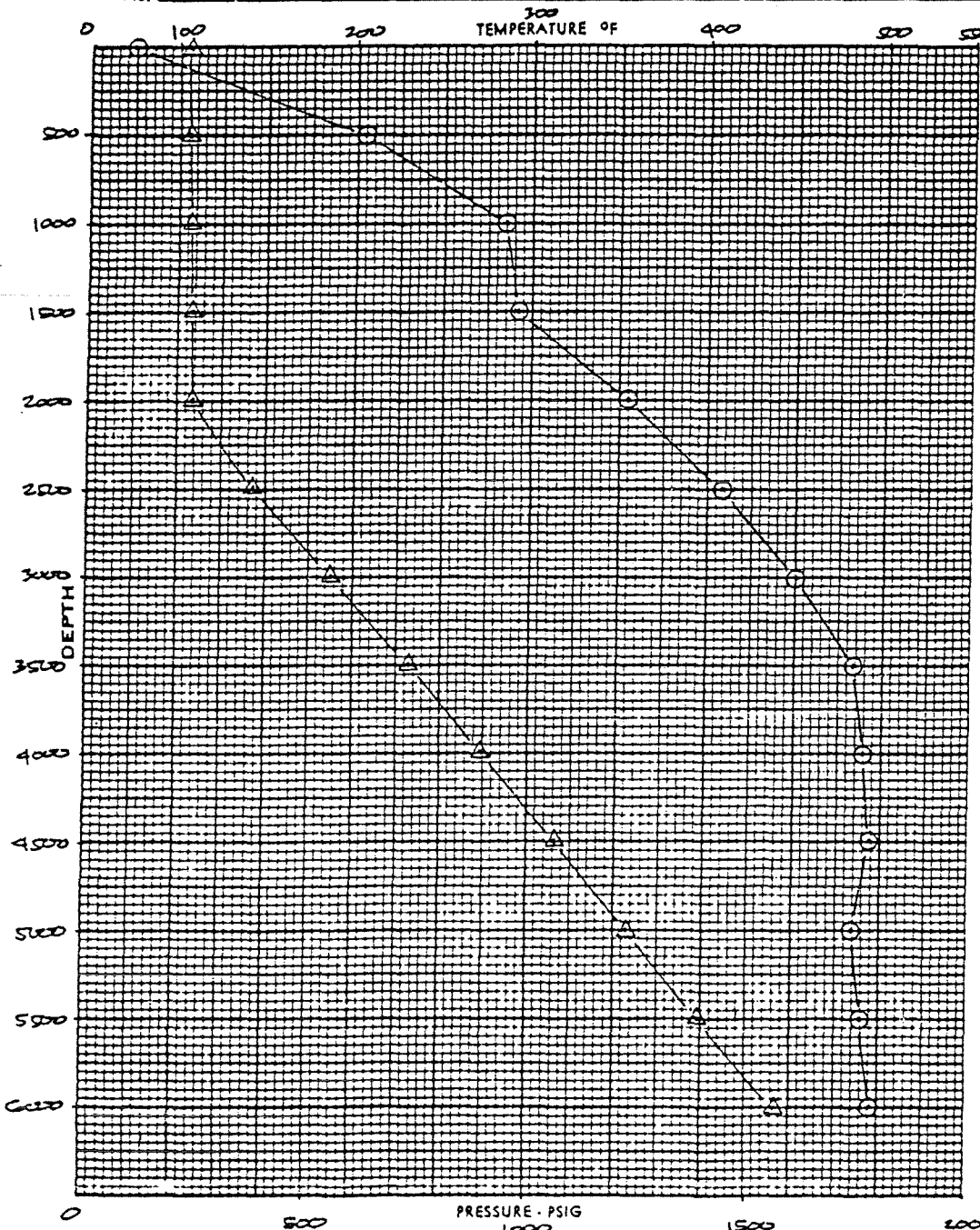
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY



OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CASEK WELL NAME BACA # 13
 CASING 20" @ 216' ; 13 3/8" @ 1460' ELEV. 9211 FT. DATE: 2-9-82
 LINER DESCRIPTION: 9 5/8" @ 3390' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176 FT.

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 1-680 FAHR.
 _____ KFE 17014 SERIAL NO. KTB 23338

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000 FT. MAX. TEMP. 496 °F @ 6000'
 REMARKS: PRIOR TO FLOWTEST NR 7



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING, PSI	216	224

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
0	50	224	-
500	204	226	-
1000	284	230	-
1500	292	234	-
2000	354	236	-
2500	408	371	0.270
3000	450	552	0.362
3500	483	728	0.352
4000	489	897	0.338
4500	493	1066	0.338
5000	484	1232	0.332
5500	489	1398	0.332
6000	496	1567	0.338

○ TEMPERATURE
 △ PRESSURE

BY: _____

...O. ENGBRETSSEN

APR 16 1982



Union Geothermal Co. of New Mexico

B13-558 P/T

SURVEY DATE: 4-13-82

TITLE BACA #13 P/T BUILD-UP SURVEY

TEMP. EL. S/N : KTB 23351 PRESS. EL. S/N : KPG 17014
 RANGE : 26 - 702 °F RANGE : 250 PSI
 CALIBRATED : 10-16-81 CALIBRATED : 11-18-81
 CLOCK: 12 HRS. : S/N: 23780 CLOCK: 12 HRS. : S/N: 18338

WHP AT START OF SURVEY : 151 PSIG
 WHP AT END OF SURVEY : 262 PSIG
 OPENED WELL TO ELEMENT : 0825 HRS.
 POH : 1541 HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY
 MOS., DAYS, HRS., MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. 7) 0900 HRS. 4-13-1982

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	5700'	0904-1204	—	—	0.817	0.818	1046	→ CORRECTION BASED @ 570' F
2	3000	1214-1234	1.154	420	0.207	0.204	273	
3	3500	1235-1245	1.176	428	0.226	0.234	313	CLOCKS DOES NOT RUN DURING THE 3-HR. STOP @ 5700 FT.
4	4000	1246-1256	1.216	441	0.376	0.375	490	
5	4500	1257-1307	1.285	465	0.517	—	669	
6	5000	1308-1318	1.387	498	0.652	—	838	
7	5500	1319-1329	1.406	504	0.788	0.789	1010	
8	6000	1330-1340	1.418	508	0.924	0.926	1180	
1	5700	1356	1.413	506	0.849	0.850	1085	
		1411	1.415	507	0.852	0.853	1089	
		1426	1.417	508	0.855	0.856	1093	
		1441	1.420	509	0.859	0.860	1098	
		1456	1.422	509.4	0.862	0.863	1102	
		1511	1.425	510	0.866	0.867	1107	
		1526	1.428	511	0.869	0.870	1110	
		1541	1.430	512	0.873	0.874	1115	

R. O. ENGBRETSSEN

Union Geothermal Co. of New Mexico

APR 16 1982

SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

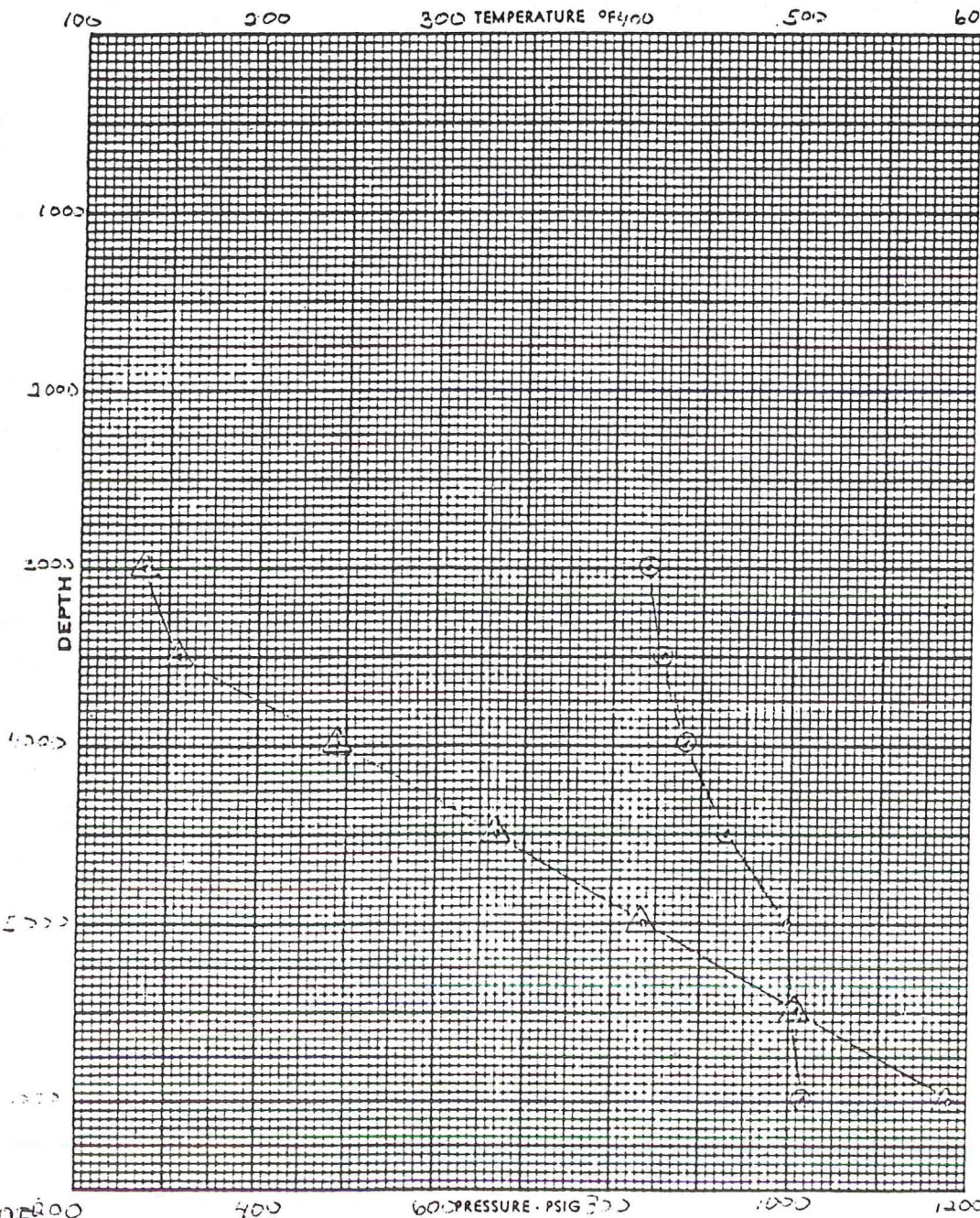
B13-558 P/T



OWNER UNION GEOTHERMAL CO. OF N.M. FIELD RECONDO CREEK WELL NAME BACA N^o 13
 CASING 20" @ 215'; 12 3/8" @ 1469' ELEV. 9211 DATE: 4/13/82
 LINER DESCRIPTION: 9 5/8" @ 2280', 7" @ 3345' - 3200' ZERO POINT K.R.
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 2 1/2 - 700^oF FAHR.
 _____ KPG 17014 SERIAL NO. KTB - 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY FROM 3000' to 6000' MAX. TEMP. 508^oF @ 6000'
 REMARKS: _____



PRESSURES	GAUGE	BOMB	
CASING, PSI			
DEPTH	TEMP.	PRESS.	GRAD.
3000	430	273	-
3500	438	313	.02
4000	444	354	.354
4500	452	398	.358
5000	478	433	.333
5500	504	1010	.344
6000	508	1180	.370

○ TEMPERATURE
 △ PRESSURE

BY: _____

R. ENGBRETSSEN

APR 16 1982



Union Geothermal Co. of New Mexico

B13-359 P/T

SURVEY DATE: 4-13/14-82

TITLE BACA No 13 P/T BUILD-UP SURVEY TO 5700'

TEMP. EL. S/N : KTB 23351 PRESS. EL. S/N : KPC 17014
 RANGE : 26-702 OF RANGE : 2800 PSI
 CALIBRATED : 10-16-81 CALIBRATED : 11-18-81
 CLOCK: 12 HRS. : S/N: 13790 CLOCK: 12 HRS. : S/N: 14090

WHP AT START OF SURVEY : 250 PSIG

WHP AT END OF SURVEY : 204 PSIG

OPENED WELL TO ELEMENT : 4-13-82 1705 HRS.

POH : 4-14-82, 0705 HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY

 MOS., DAYS, HRS., MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. 7) 0900 HRS. 4-13-1982

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	5700'	1727	1.436	514	0.900	0.902	1150.2	
		1827	1.438	515	0.917	0.919	1171.4	
		1927	1.441	516	0.934	0.936	1192.5	
		2027	1.443	516	0.951	0.953	1213.7	
		2127	1.443	516	0.966	0.968	1232.4	
		2227	1.444	517	0.980	0.982	1249.8	
		2327	1.445	517	0.993	0.995	1266.0	
		2427	1.445	517	1.005	1.007	1280.9	
		0127	1.444	517	1.018	1.020	1297.1	
		0227	1.445	517	1.030	1.032	1312.0	
		0327	1.443	516	1.041	1.043	1325.7	
		0427	1.441	516	1.050	1.052	1336.9	
		0430	1.442	516	1.054	1.056	1341.9	

R. ENGBRETTSEN

APR 16 1982



Union Geothermal Co. of New Mexico

B13-550 P/T

SURVEY DATE: 4-13/14-82

TITLE BACA No 13 P/T BUILD-UP SURVEY TO 5700'

TEMP. EL. S/N : KTB 23351 PRESS. EL. S/N : KPC 17014
 RANGE : 26-702 OF RANGE : 250 PSI
 CALIBRATED : 10-16-81 CALIBRATED : 11-18-81
 CLOCK: 12 HRS. : S/N: 13790 CLOCK: 12 HRS. : S/N: 14090

WHP AT START OF SURVEY : 250 PSIG

WHP AT END OF SURVEY : 204 PSIG

OPENED WELL TO ELEMENT : 4-13-82 1705 HRS.

POH : 4-14-82, 0705 HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY

 MOS., DAYS, HRS., MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. 7) 0900 HRS. 4-13-1982

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	5700'	1727	1.436	514	0.900	0.902	1150.2	
		1827	1.438	515	0.917	0.919	1171.4	
		1927	1.441	516	0.934	0.936	1192.5	
		2027	1.443	516	0.951	0.953	1213.7	
		2127	1.443	516	0.966	0.968	1232.4	
		2227	1.444	517	0.980	0.982	1249.8	
		2327	1.445	517	0.993	0.995	1266.0	
		2427	1.445	517	1.005	1.007	1280.9	
		0127	1.444	517	1.018	1.020	1297.1	
		0227	1.445	517	1.030	1.032	1312.0	
		0327	1.443	516	1.041	1.043	1325.7	
		0427	1.441	516	1.050	1.052	1336.9	
		0430	1.442	516	1.054	1.056	1341.9	

R. O. ENGBRETSSEN

Union Geothermal Co. of New Mexico 1982

813-560 P/T

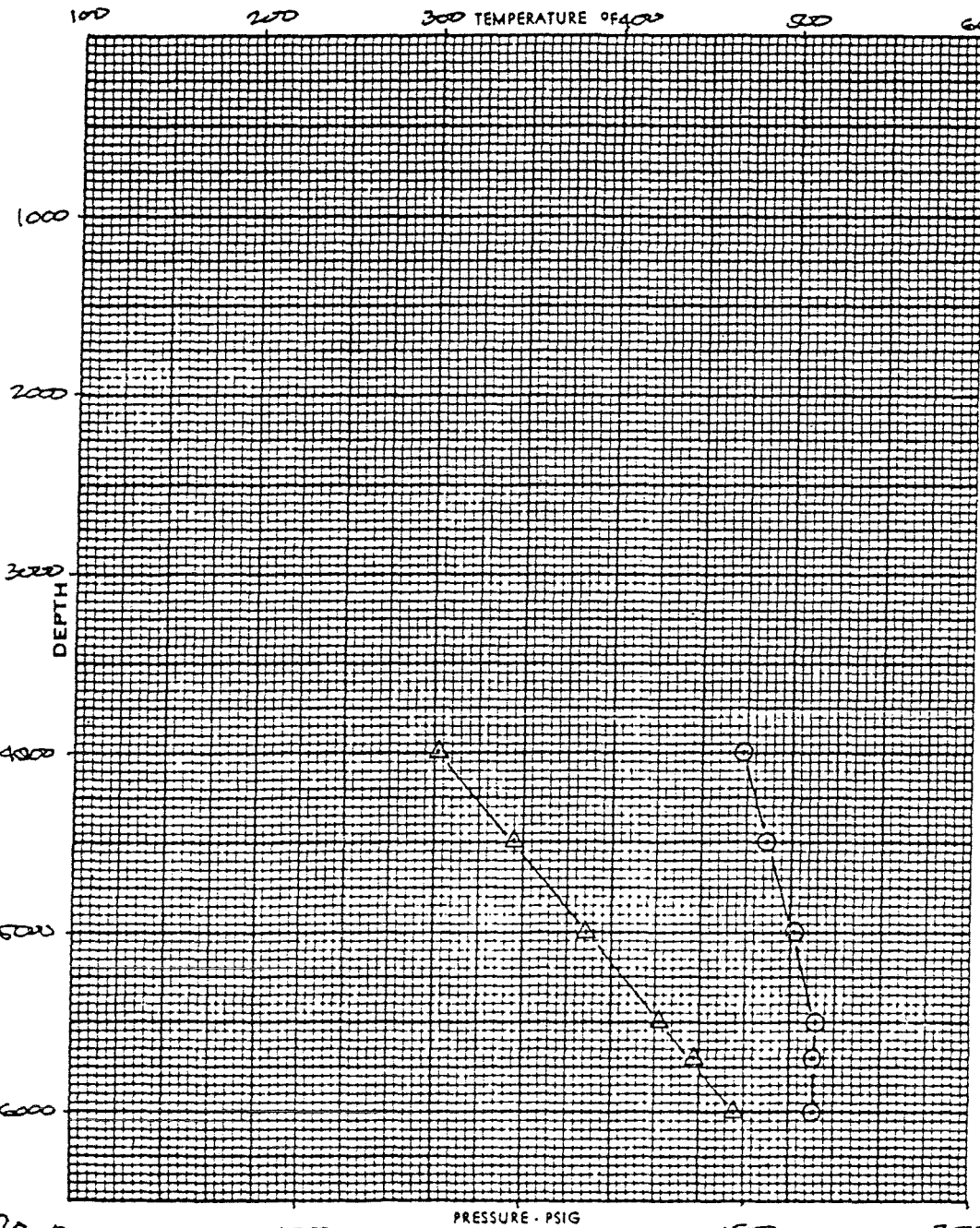
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY



OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDWOOD CREEK WELL NAME B&C # 13
 CASING 20" @ 215' ; 13 3/8" @ 1460' ELEV. 9211' DATE: 4-14-82
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 26-702 FAHR.
 _____ KFB 17014 SERIAL NO. KTB 20351

PURPOSE TEMP/PRESS GRADIENT SURVEYS TO 6000' MAX. TEMP. 515 °F @ 5500'
 REMARKS: _____



STABILIZATION PERIOD

PRESSURES	GAUGE	BOMB	
CASING, PSI			
DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.

4000	473	808	
4500	487	978	0.340
5000	504	1146	0.336
5500	515	1312	0.332
5700	513	1388	0.328
6000	513	1480	0.3067

○ TEMPERATURE
 △ PRESSURE

BY: _____



Union Geothermal Co. of New Mexico

R.O. ENGBRETSSEN

APR 16 1982

B 13 - S G 1 P/T

SURVEY DATE: 4-15-82

TITLE BACA NO 13 P/T GRADIENT SURVEY TO 6000'

TEMP. EL. S/N : KTB 23851 PRESS. EL. S/N : KPG 17014
 RANGE : 26 - 702 °F RANGE : 2500 PSI
 CALIBRATED : 10-16-81 CALIBRATED : 11-18-81
 CLOCK: 12 HRS. : S/N: 23781 CLOCK: 12 HRS. : S/N: 18338

WHP AT START OF SURVEY : 167 PSIG
 WHP AT END OF SURVEY : 167 PSIG
 OPENED WELL TO ELEMENT : 0838 HRS.
 POH : 1111 HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY
 MOS., 1 DAYS, 23 HRS., 38 MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. 7) 0900 HRS. 4-13-1982

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	0	0838-0843	0.111	66	0.123	-	165	
2	500	0844-0850	0.740	282	0.123	-	165	
3	1000	0900-0910	0.872	325	0.125	-	167	
4	1500	0911-0921	0.893	332	0.125	-	167	
5	2000	0922-0932	1.025	376	0.125	-	167	
6	2500	0933-0943	1.128	411	0.241	0.238	318	
7	3000	0944-0954	1.211	439	0.383	0.382	499	
8	3500	0955-1005	1.301	470	0.524	0.524	678	
9	4000	1006-1016	1.316	475	0.660	0.661	850	
10	4500	1017-1027	1.348	485	0.793	0.795	1017	
11	5000	1028-1038	1.309	472	0.928	0.931	1186	
12	5500	1039-1049	1.376	494	1.064	1.067	1356	
13	5700	1050-1100	1.395	501	1.118	1.121	1423	
14	6000	1101-1111	1.409	505	1.198	1.201	1522	

R. O. ENGBRETSSEN

APR 16 1982

B13-SG1 P/T

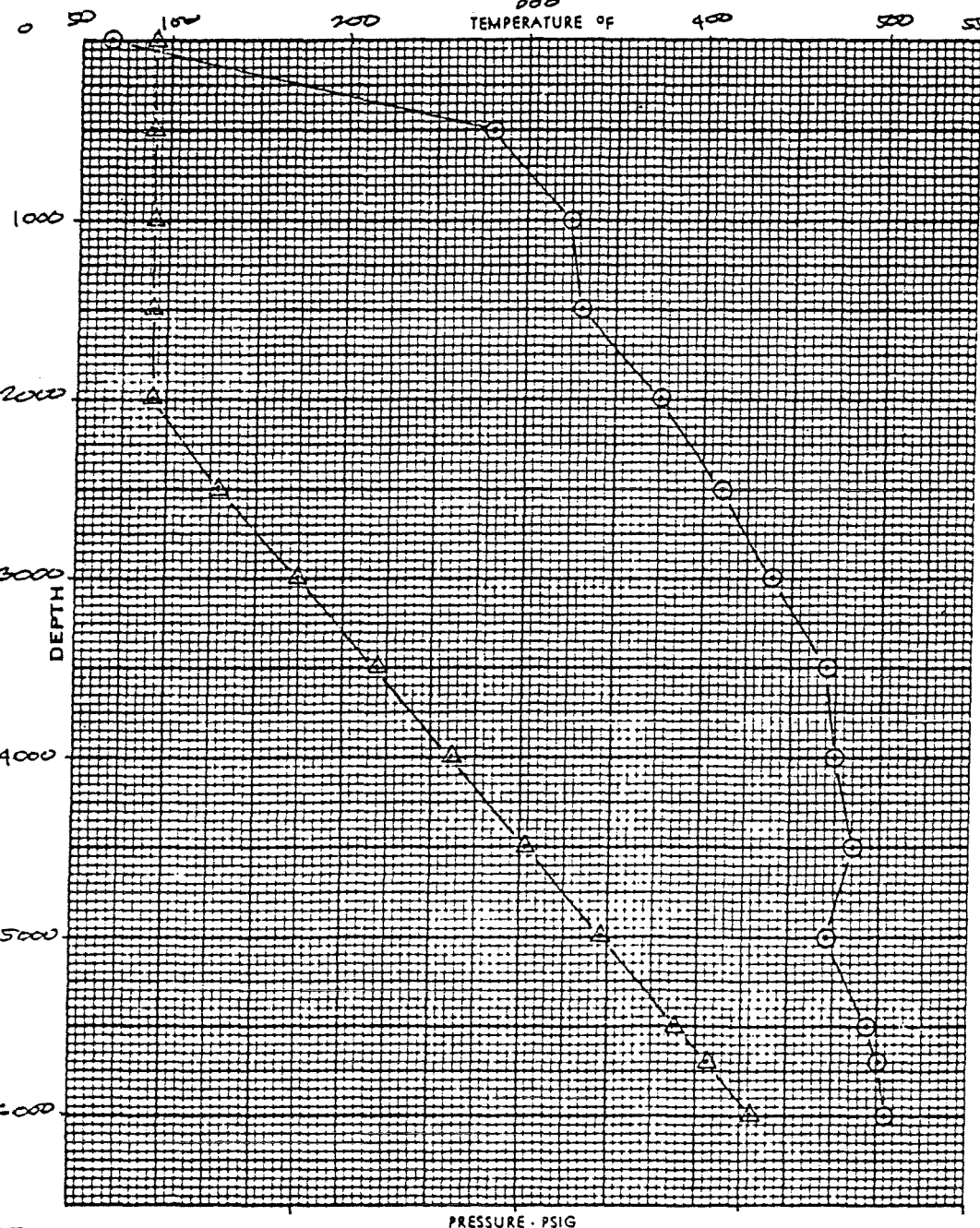
Union Geothermal Co. of New Mexico

SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA NO 13
 CASING 10" @ 215' ; 13 3/8" @ 1469' ELEV. 9211' DATE: 9-15-82
 LINER DESCRIPTION: 1 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PS1 INSTRUMENT 26-702 FAHR.
 _____ KPL 17014 SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000' MAX. TEMP. 505 °F @ 6000'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING, PSI	167	165

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
0	66	165	-
500	282	165	-
1000	325	167	-
1500	332	167	-
2000	376	167	-
2500	411	318	0.302
3000	439	499	0.362
3500	470	678	0.358
4000	475	850	0.344
4500	485	1017	0.334
5000	472	1186	0.338
5500	494	1356	0.340
5700	501	1423	0.3350
6000	505	1522	0.330

○ TEMPERATURE
 △ PRESSURE

BY: _____



R. O. ENGBRETSSEN

Union Geothermal Co. of New Mexico

APR 19 1982

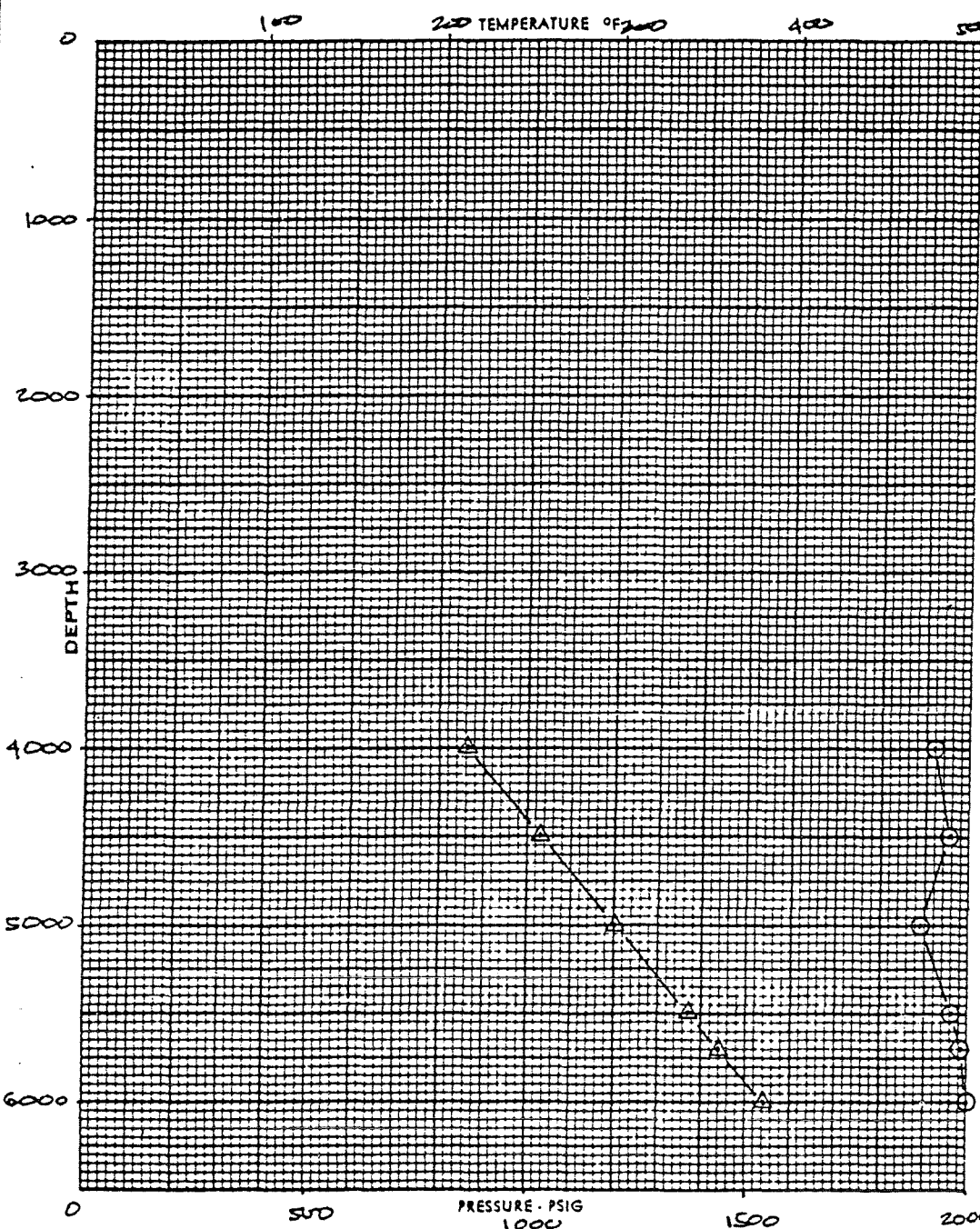
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

B13 - 562 P/T

OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA # 13
 CASING 20" @ 215' ; 13 3/8" @ 1469' ELEV. 9211' DATE: 4-16-82
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 26-702 FAHR.
 _____ KPG 17014 SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000' MAX. TEMP. 500 °F @ 6000'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
4000	479	866	-
4500	488	1033	0.334
5000	473	1201	0.336
5500	491	1372	0.342
5700	497	1440	0.340
6000	500	1541	0.336

○ TEMPERATURE
 △ PRESSURE

BY: _____

R. O. ENGBRETSSEN

Union Geothermal Co. of New Mexico

APR 20 1982

610-56071

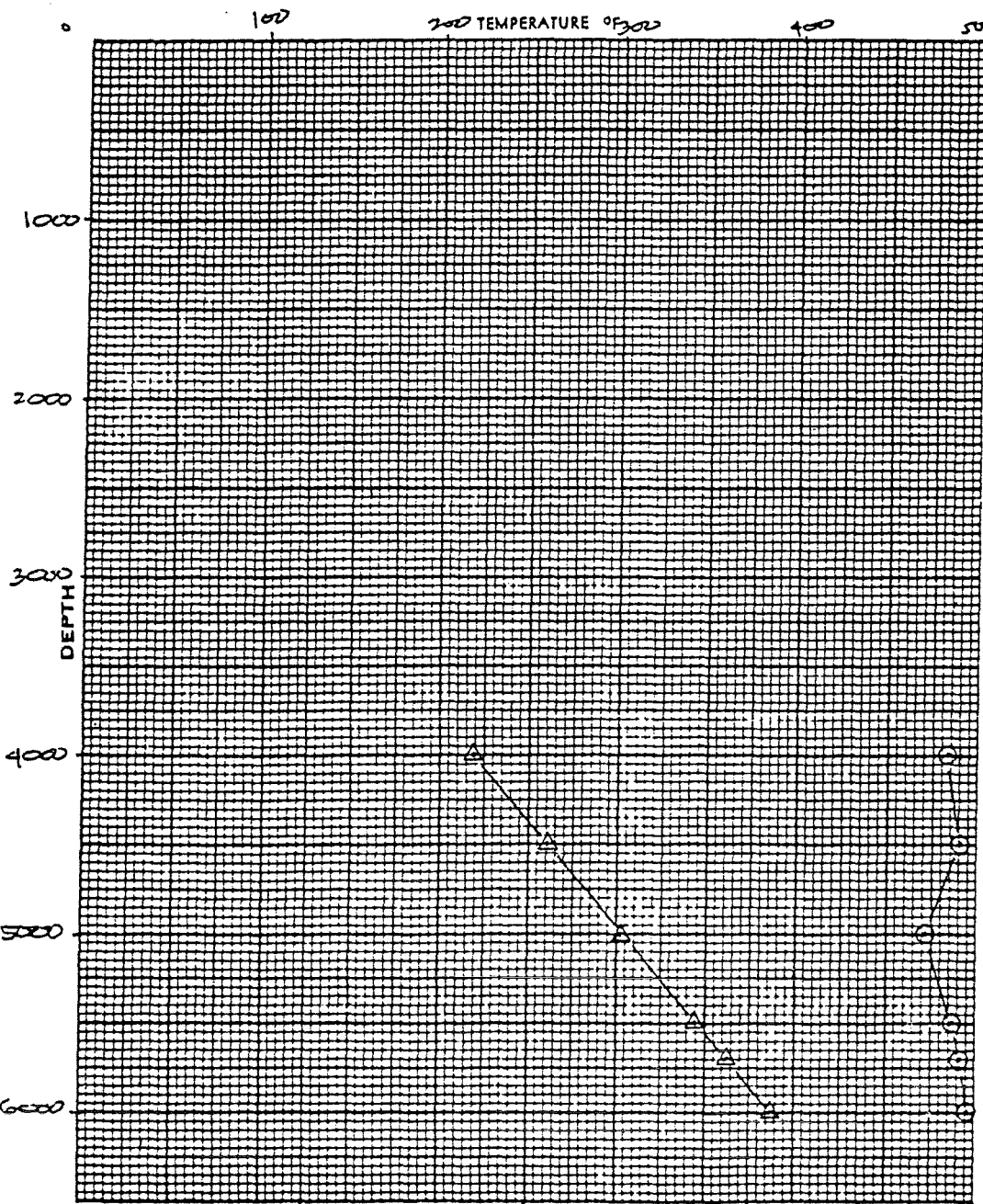
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY



OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDWOOD CREEK WELL NAME BACA #13
 CASING 10" @ 216' ; 13 3/8" @ 1460' ELEV. 9211' DATE: 4-19-82
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 26-702 FAHR.
 _____ KPC 17014 SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000' MAX. TEMP. 495 °F @ 6000'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
4000	483	874	-
4500	491	1041	0.334
5000	472	1209	0.336
5500	487	1377	0.336
5700	492	1448	0.355
6000	495	1548	0.333

○ TEMPERATURE
 △ PRESSURE

BY: _____



Union Geothermal Co. of New Mexico

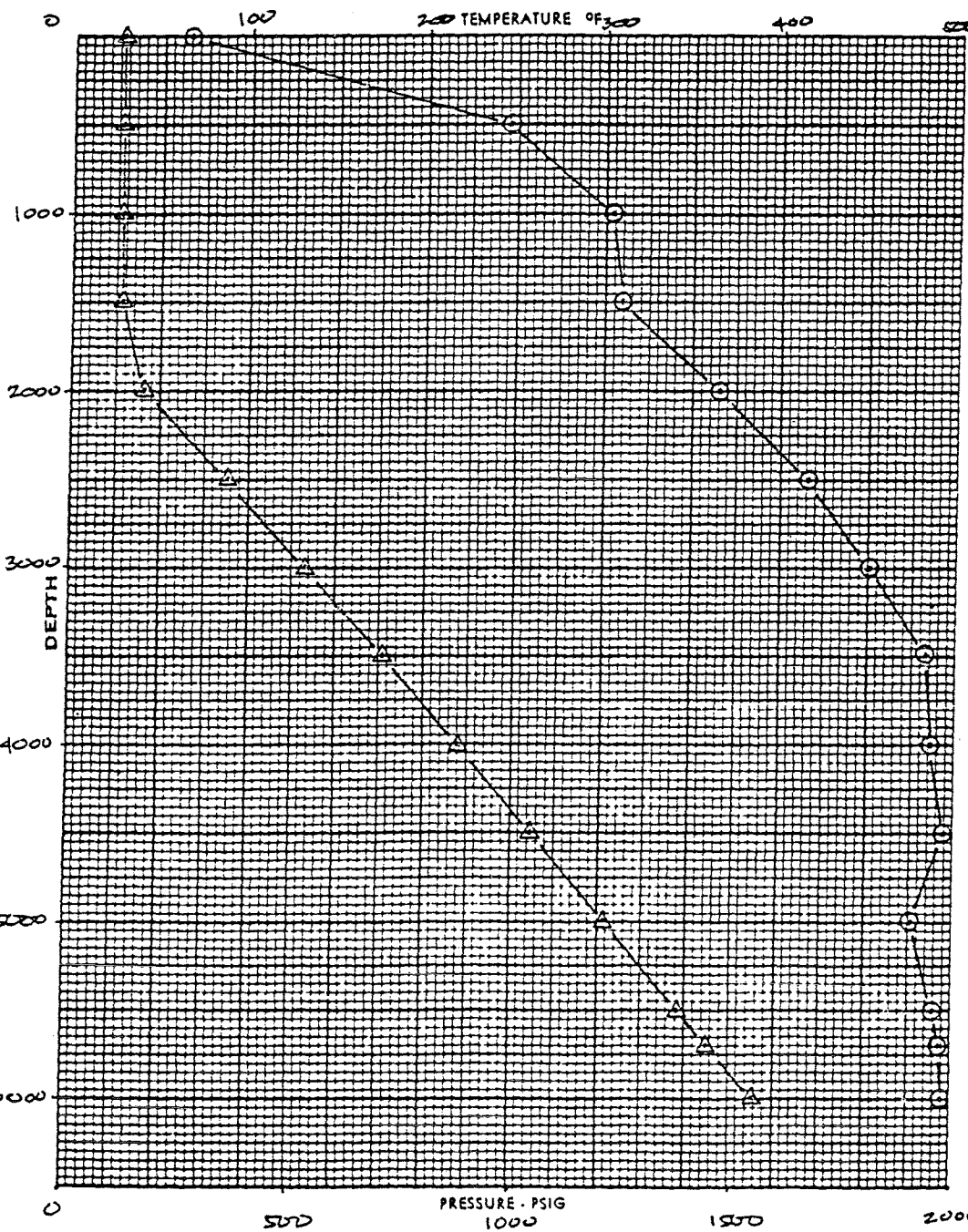
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

B13-SG4 P/T

OWNER UNION GEOTHERMAL Co. of N.M. FIELD REDONDO CREEK WELL NAME BACA # 13
 CASING 10" @ 215' ; 13 3/8" @ 1460' ELEV. 9211' DATE: 4-23-82
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 25-702 FAHR.
 _____ KPC 17014 SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO GOOD MAX. TEMP. 495 °F @ 6000'
 REMARKS: _____



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING. PSI	105	110

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
0	66	110	-
500	246	110	-
1000	303	111	-
1500	310	113	-
2000	366	166	0.106
2500	417	354	0.376
3000	452	524	0.360
3500	483	710	0.352
4000	487	881	0.342
4500	494	1047	0.332
5000	477	1216	0.338
5500	489	1384	0.336
5700	493	1452	0.340
6000	495	1553	0.3367

○ TEMPERATURE
 △ PRESSURE

BY: _____



Union Geothermal Co. of New Mexico

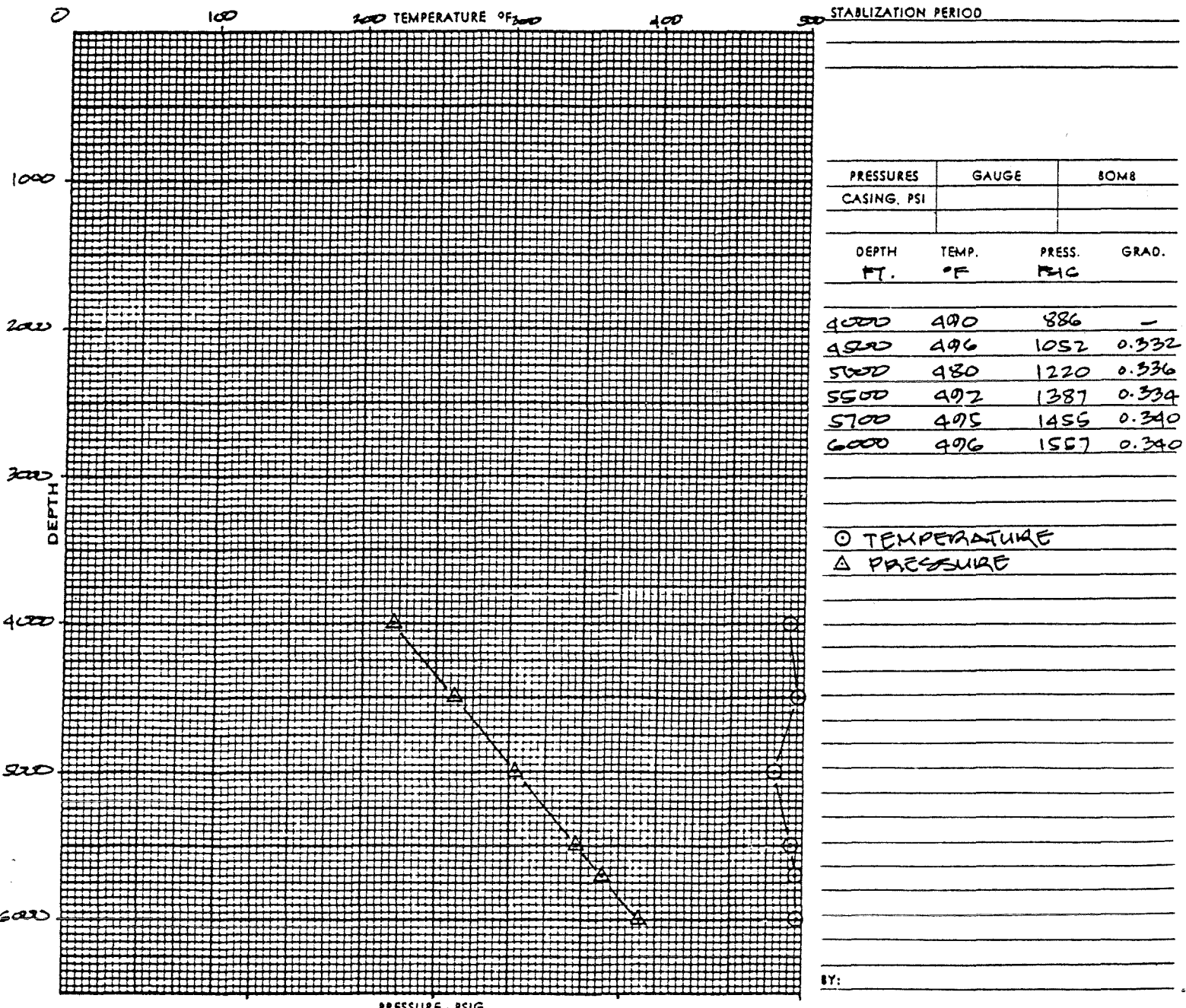
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

B13-SGS P/T

OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA # 13
 CASING 20" @ 215' ; 13 3/8" @ 1460' ELEV. 9211' DATE: 5-3-82
 LINER DESCRIPTION: 1 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2000 PSI INSTRUMENT 26-702 FAHR.
 _____ KPG 1701A SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000' MAX. TEMP. 496 °F @ 4500'
 REMARKS: _____



BY: _____



Union Geothermal Co. of New Mexico

B13-566 P/T

SURVEY DATE: 5-12-82

TITLE BACA NR 13 TEMP/PRESS GRADIENT SURVEY TO 6000'

TEMP. EL. S/N : KTB 23351 PRESS. EL. S/N : KPG 17014
 RANGE : 26-702 °F RANGE : 2500 PSI
 CALIBRATED : 10-16-81 CALIBRATED : 11-18-81
 CLOCK: 12 HRS. : S/N: 23781 CLOCK: 12 HRS. : S/N: 23779

WHP AT START OF SURVEY : 108 PSIG
 WHP AT END OF SURVEY : 108 PSIG
 OPENED WELL TO ELEMENT : 0926 HRS.
 POH : 1118 HRS.

TIME ELAPSED FROM LATEST S. I. TO START OF THIS SURVEY
— MOS., 29 DAYS, — HRS., 36 MINS.

DATE AND TIME OF LATEST S. I. (FT. NO. 7) 0900 HRS. 4-13-1982

Station	Depth	Time at Sta.	TEMPERATURE		PRESSURE			REMARKS
			Defl.	°F	Defl.	Corr. Defl.	PSIG	
1	4000'	0943-1003	1.371	493	0.692	0.693	890	
2	4500	1004-104	1.389	499	0.824	0.825	1054	
3	5000	1015-1025	1.346	485	0.956	0.959	1221	
4	5500	1026-1036	1.375	494	1.089	1.092	1387	
5	5700	1037-1107	1.383	497	1.143	1.146	1454	
6	6000	1108-1118	1.390	499	1.227	1.231	1559	
NOTE:								
1. LOST TOOLS DURING POH WHEN WIRE								
SLIP OUT THE SPOOL, 5-12-82								
2. ABOUT 1,000 FT. OF WIRELINE GO WITH								
THE TOOLS IN THE HOLE.								
3. RECOVERED TOOLS @ 1030 HRS. 5-19-82								



Union Geothermal Co. of New Mexico

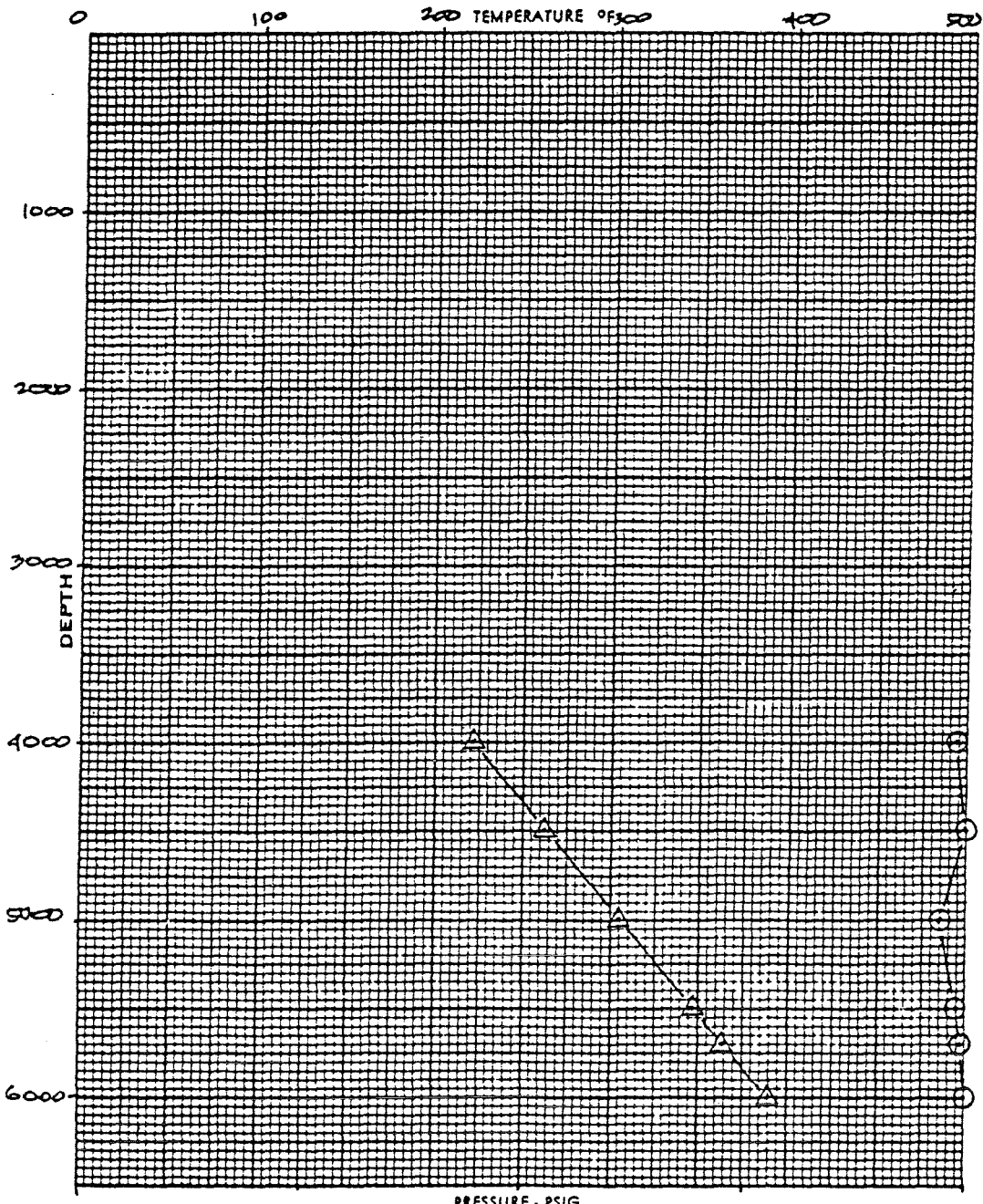
SUBSURFACE TEMPERATURE AND PRESSURE SURVEY

B13-SGC P/T

OWNER UNION GEOTHERMAL CO. OF N.M. FIELD REDONDO CREEK WELL NAME BACA # 13
 CASING 20" @ 215' ; 13 3/8" @ 1469' ELEV. 9211' DATE: 5-12-82
 LINER DESCRIPTION: 9 5/8" @ 3380' ; 7" @ 3340' - 8200' ZERO POINT KB
 DEPTH 8176'

HOLE DESCRIPTION: _____
 _____ 2500 PSI INSTRUMENT 26-702 FAHR.
 _____ KPG 17014 SERIAL NO. KTB 23351

PURPOSE TEMP/PRESS GRADIENT SURVEY TO 6000' MAX. TEMP. 499 °F @ 6000'
 REMARKS: RECOVERED TOOLS, 5-12-82



STABILIZATION PERIOD _____

PRESSURES	GAUGE	BOMB
CASING, PSI		

DEPTH FT.	TEMP. °F	PRESS. PSIG	GRAD.
4000	493	890	-
4500	499	1054	0.328
5000	485	1221	0.334
5500	494	1387	0.332
5700	497	1454	0.335
6000	499	1559	0.350

○ TEMPERATURE
 △ PRESSURE

BY: _____