

THIS COPY REPRESENTS THE BEST POSSIBLE REPRODUCTION
OF THE MATERIAL PROVIDED TO US FOR DISTRIBUTION.
WHENEVER POSSIBLE, THE MATERIAL HAS BEEN ENHANCED
TO REGAIN LEGIBILITY.

GL03872

Open-File Report # NM/Baca-19c

BACA PROJECT
DATA AND REPORTS

WELLS

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

BACA 5-H

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 Sept. 19

33D 113' drld.
6973'TD 6-1/2hrs. drld.
2-1/4hrs trip
15-1/4hrs others

Formation Baliza Canyon. Flow line temp. 255°. Drld. from 6860' to 6973'TD. POOH, ran temp. survey. Pressure bomb failed. Laying down drillpipes.

5 hrs. bottom hole temp. survey as follows:

4500'	362°
6100'	380°
6600'	408°
6950'	430°
6970'	435°

Total cost to date \$274,026.00

BACA #5 Sept. 20

33D 24hrs. others
6973'TD

Finished laying down drillpipes & drill collars. Strip cellar. Dismantled blooie line. Off report

Total cost to date \$276,526.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 Sept. 12

37D 239' drld.
6860' 9-3/4hrs drld.
5-1/2hrs trip
8-3/4hrs others

Drld. to 6793', POOH. Ran temp. & press. surveys. Waited 5 hrs. ran temp. & press. surveys. Ran back in hole. Drlg. ahead. Injecting 3 bbls. water per hour with 6 gallons soap & 5 gallons unisteam. Formation Baliza Canyon. Flow line temp. 240°.

3-1/2hrs. bottom hole temp. & pressure survey as follows:

4500'	362°	981#
6100'	381°	1583#
6300'	397°	1659#
6500'	415°	1734#
6700'	424°	1805#
6786'	445°	1847#

8-1/2hrs. bottom hole temp. & pressure survey as follows:

6786'	454° - clock stopped on bomb.
4500'	981#
6100'	1583#
6300'	1656#
6500'	1729#
6700'	1806#
6750'	1829#
6786'	1835#

Total cost to date \$269,326

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 17, 1971

BACA #5

36D 111' Drld.
6621' 5hrs. drld
12-1/2hrs trip
5-1/2hrs others

Formation Bandelier Tuff. Flow line temp. 225°. Drld. to 6540', POOH, ran temp. survey. Ran back in hole, reamed 6406' - 6540'. Drld. to 6555'. POOH, changed bits. Ran back in hole with circ. sub at 4500'. sub has one 1/8" & one 3/16" port. Drlg. ahead. Injecting 6 bbls. water per hour w/8 gallons soap & 5 gallons unisteam.

Well closed in 3-1/2 hrs. temp. survey as follows:

4500'	360°
5655'	373°
6106'	386°
6520'	393°
6540'	397°

Temp. recorded was 406° at some depth between 6106' - 6520'

Total cost to date \$264,276.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

SEPT. 16, 1971

BACA #5

35D
6510'

360' Drld.
16-1/2Hrs. drlg.
5-3/4Hrs. trip
1-3/4Hrs. other

Formation Bandelier/tuff.
Flow line temp. 240°, orifice
size 8-3/4, 23# pressure.
Drld. to 6226' & POOH. R.I.
w/new bit w/1/4" circulating
port @ 4370'. Unloaded hole
5700'. Ran back to bottom.
Now drlg. ahead. Injecting
6 bbls./hr. w/8 gals. soap and
5 gals. unisteam.

Total cost to date - \$258,276

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 15, 1971

BACA #5

34D
6150'
75' drld.
4-3/4hrs. drld.
5 hrs. trip
14-1/4hrs. others

Formation Bandelier tuff. Flow line temp. 233°. Drld. to 6107', bit locked up. POOH, ran bottom hole temp. survey. Waited 5 hrs. ran another bottom hole temp. survey. RIH with 1/4" circ. port at 4250', unloaded hole & reamed from 6022' - 6107'. Drlg. ahead this a.m. Injecting 6 bbls. water per hour with 4 gallons soap & 1-1/2 gallons unisteam.

Temp. surveys as follows:

Depth.	Tem-4-1/2hrs.	tem-9-1/2hrs.
4500'	350°	342°
5655'	367°	369°
6000'	375°	380°
6090'	398°	400°
6106'	395°	405°

Total cost to date \$253,376.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 14, 1971

BACA #5

33D
6075'
53' drld.
4hrs. drld.
8-3/4hrs. trip
11-1/4hrs. others

Ran bottom hole pressure & bottom hole temp. surveys. RIH w/jet circ. sub at 4000'. Reamed 5958' to 6022'. Drld. 6022' - 6027', unable to clean hole. PU & took circ. sub out, ran back to bottom, drlg. ahead. Injecting 6 bbls. water per hour with 4 gallons soap & 1-1/2 gallons unisteam.

Survey as follows:

4500'	336°
5300'	358°
5655'	368°
6000'	380°
6012'	385°

Pressure survey, well closed in 3-1/2hrs.
3000' 399#
4000' 794#
well closed in 6-1/4hrs.
4000' 807#

Total cost to date \$249,376.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 13, 1971

BACA #5

32D
6022'

412' drld.
12-3/4hrs. drld.
7-3/4hrs. trip
3-1/2hrs. others

Drld. to 5683'. POOH, ran in temp.
survey. RIH, drld. to 6022'.
Now Pulling out of hole for Bit
change & Temp. survey.

Temp. surveys as follows:

4500'	344°
5300'	362°
5655'	375°
5670'	377°

Total cost to date \$244,776.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 Sept. 11

33D 370' drld.
5170' 13-3/4hrs.
6-3/4hrs trip
2-1/2hrs others

Formation Bandelier tuff. Flow line temp. 155°. Hole dusted to 5010'. Started making approx. 10 gallons per minute of water after drlg. break from 5010' - 5016'. Started injecting 6 bbls. water per hour with 3 gallons of soap & 1-1/2 gallons unisteam. POOH at 5065'. Ran in temp. survey and pressure survey. Picked up 29 jts. 4-1/2" drillpipe. RIH, reamed 55' to bottom. Drld. ahead. Injecting 8 bbls. water with 2 gallons of soap and 1-1/2 gallons unisteam per hour.

Survey as follows

D	Temp.	Pressure
4000'	233°	14#
4500'	237°	15#
5050'	303°	241#

Total cost to date \$234,426.00

BACA #5 Sept. 12

31D 440'
5610' 15-1/2hrs. drld.
5hrs. trip
3-1/2hrs. others

Formation Bandelier tuff. Flow line temp. 175°. Drld. to 5330'. Large increase in water from 5290' - 5296' & 5306' - 5310'. Probably 60 bbls. per hour of water. POOH, ran in Temp. & pressure survey. RIH, drlg. ahead, injecting 6 bbls. water per hour with 2 gallons soap & 1-1/2 gallons unisteam.

Survey as follows

D	Temp.	Pressure
4500'	339°	930#
5016'	354°	
5300'	363°	1152#
5315'	363°	

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 10, 1971

BACA #5

29D
4800'

400' drld.
9-3/4hrs. drld.
1hr. trip
13-1/4hrs. others

Formation Bandelier tuff. Flow line temp. 95°. Went back in hole, washed & drld. cement out to 2850', POOH. Picked up 14 drill collars, RIH, found top of cement inside liner at 3940'. Drld. out cement float collar & float shoe to bottom of liner at 4400'. Hole dry & dusting from 4400' to 4800'. No water & no steam, drlg. ahead.

Total cost to date \$229,426.00

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLIN REPORT

SEPT. 9, 1971

BACA #5

28D
4400'

0' drld.
0hrs. drld.
0hrs. trip
24hrs. others

WOC 6 a.m. 9/8/71 to 1:30 a.m.
9/9/71. Ran Baker FBRC. Baker
on bottom of drill pipe. Set
Baker at 2300', loaded annulus
w/water. Pumped in 140 bbls.
of water down drill pipe flwd. by
293 sks. of class "C" cement and
293 sks. diamix M (700 cu. ft.)
neat. Displaced with 82 bbls. of
water, squeezed to 2000 psi.
Let set 15 minutes, held O.K. Left
120' of cement in 13-3/8" csg.
above top of liner. POOH

Total cost to date \$225,376.00

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

SEPT. 8, 1971

BACA #5

27D
4400'

0' Drld.
0hrs. Drld.
5hrs. trip
19hrs. others

RIH to bottom, circ. 9 a.m. to 2:30 p.m. POOH, ran Baker float shoe on bottom, flwd. by 2 jts. of 9-5/8" - new - 40# - K-55 seal lock smls. csg. flwd. by Baker float collar flwd. by 38 jts. of above flwd. by Burns plain type liner hanger with cement in slots - 1707.76'. Setting at 4400', top of liner 2692.24', over laps 13-3/8" csg. 135'. Pumped 200 bbls. of mud flwd. by 20 bbls. of water. Mixed & pumped in 470 sks. of class "C" cmt. w/470 sks. of diamix plus .8% R-6 retarded to 300°F. 1127 cu. ft. of slurry displaced w/165 bbls. of water. Bumped plug with 1500 psi. Released pressure, POOH, took off setting tool, RIH open ended to 2750'. Washed out top of liner, POOH. WOC at 6 a.m. 9/8/71.

Total cost to date \$217,276.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 Sept. 6

25D 97' Drld.
4067' 4-3/4hrs drld.
8hrs trip
10-1/4hrs others

Drld. to 4065'. Formation
Bandelier tuff. Flow line temp.
170°. POOH, ran temp. survey.
put on new bit, ran back in hole
drld. from 4065' to 4067'. Rotating
table locked up. POOH, repaired
rotating table, ran temp. survey
at 4067'. Going back in hole.

Well closed 2-1/2hrs. ran in
to bottom of hole. temp. as
follows:

3206' 280°
3600' 263°
4026' 256°

Well closed 10hrs. ran in
to bottom of hole. Temp. as
follows:

2800' 307°
3600' 264°
4025' 269°

Total cost to date \$190,406.00

BACA #5 Sept. 7

26D 333' Drld.
4400' 11-1/2hrs drld.
4-1/2hrs trip
8hrs. others

Formation Bandelier tuff. Flow
line temp. 185°. Went back in hole
drld. to 4400'. POOH, ran temp.
and pressure survey after well
had been closed in for 5 hours.
Going back in hole to make wiper
run in preparing to run 9-5/8"
liner.

SURVEY AS FOLLOWS

D	Temp.	Pressure
2800'	297°	420#
3600'	277°	745#
4025'	273°	916#
4375'	269°	1054#

Total cost to date \$194,781.00

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 Sept. 4

23 D	0hrs drld.	Laid down 9 plug drill collars,
3427'	0hrs trip	picked up 9 drill collars. Went
	24hrs others	in hole, circ. w/water. Drld.
		cement retainer from 2727' - 2730'
		and drld. cement from 2730' - 3427'.
		Had same amount of water as before
		squeezing.

Total cost to date \$182,756.00

BACA #5 Sept. 5

24 D	543' Drld.	Formation Bandelier tuff. Flow
3970'	19-1/2hrs drld.	line temp. 165°. POOH, put on new
	2hrs trip	bit, went back in hole. Drlg.
	2-1/2hrs others	ahead. Had increases in water and
		steam at 3860'. Injecting 8 bbls.
		water per hour with 3 gallons of
		soap and 1-1/2 gallons of unisteam.

Total cost to date \$186,156.00

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

SEPT. 3, 1971

BACA #5

22D
3427'

0hrs. Drld,
6hrs. Trip
18hrs. others

WOC 8 a.m. to 2 a.m. Went in hole
to 2700'. Turned air on to
unload hole. Scale of cement
inside drill pipe. Turned loose
and plug drill collars. P.OOH,
will unplug collars and drill out
cement and retainer.

Total cost to date \$178,556.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 2, 1971

BACA #5

21D
3427'
205' Drld.
11-1/4Hrs Drld.
5-1/2Hrs trip
7-1/4Hrs Others
Survey 2° at 3418'

Formation Bandelier Tuff. Flow line temp. 153°F. Drld. to 3427'. PU in csg. & let set 30 minutes. Went back to bottom, no bridges & no fill. POOH, RI temp. survey - bottom hole temp. at 3000' 311°F. RI HOWCC EST drill SB retainer on bottom of drill pipe & set at 2727'. Loaded annulus with water, pumped in 180 bbls. of water flwd by 1438 cu. ft. of 1-1 class "C" Cmt. & diamix with 1.6% R-11 & 2% D-19 flwd by 250 sks. (330 cu. ft. of class "C" cmt. with 1.2% R-1, retarded to 275°). Displaced down drill pipe with 43 bbls. of water drill pipe waited full. PO & closed valve hole retainer & dumped 25 sks. cmt. on top of retainer. JC 8 a.m. 9/2/71. POOH, waiting on cement.

Total cost to date \$174,956.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Sept. 1, 1971

BACA #5

20D
3222'

132' drld.
11hrs. drld.
6hrs. trip
7hrs. others

Formation Bandelier tuff. Flow line temp. 158°. WOC 8 a.m. to 9 am. RIH & drld. cmt. & float collars & had cmt. from 2684' to 3000'. CO from 3000' - 3090'. Blew hole 45 min. making approx 1/2 to 3/4 bbls. water per min. with small amount of steam. POOH, RI & drlg. ahead. Injecting 8 bbls. water per hour with 2 gallons soap and 1-1/2 gallons unisteam.

Total cost to date \$161,906.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug 31, 1971

BACA #5

19D
3090'

0' Drld
3H trip
21H others

WOC 8 a.m. to 5 p.m. Went in hole
found cement at 2674'. Dusted w/air
without rotating and 10-15# of weight
from 2674'-2684'. POOH, waiting on
cement.

Total cost to date \$157,606.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

AUG. 28, 29, 30

BACA #5, Aug. 28

16D 0hrs. drlg.
3090' 0hrs. trip
 24hrs. other

Ran Texas pattern guide shoe w/teeth on bottom of float, flwd. by 2 jts. (79.49') of 13-3/8" O.D. 61# K55 smls. csg., flwd. by one float collar, flwd. by 39 jts. (1448.97') of 61# K55 smls. csg., flwd. by 32 jts. and one piece (1277.30') of 13-3/8" 54.50# K55 smls. csg. set @ 2827.81' KOB measurements. Mixed and pumped in 850 bbls. mud w/8% LCM. Mixed and pumped in 1435 sx. of thermal 660 cmt. w/1 cu. ft. of perlite per sack (yields 2.29 cu. ft. per sack), flwd. by 565 sx. of thermal 660 cmt. neat displaced w/336 bbls. water. Circulated out 600 cu. ft. cmt. and left 600 ft. in csg. Pressured up to 2200 psi at end of job. Job complete 5:30 p.m. 8/27/71.

Cost to date - \$148,256.

.CA #5, Aug. 29

17D 0hrs. drlg.
3090' 0hrs. trip
 24hrs. other

Pulled up hydril, rotary head and blooie line. Repaired blooie line. Instlg. BOE and nipling up.

BACA #5, Aug. 30

18D 0hrs. drlg.
3090' 3hrs. trip
 21hrs. other

Finished nipling up and instlg. BOP @ 6 p.m., 8/29/71. Ran drillpipe in hole and found top of cmt. @ 2212. Drld. hard cmt. from 2212'-2222'. Found liquid cmt. from 2222'-2674'. , POOH. WOC this a.m. Checking w/Halliburton regarding setting time at various temps.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug. 27, 1971

BACA #5

15D
3090'

0hrs. drld.
0hrs. trip
24hrs. other

Finished P.OOH, RI temp. bomb
to 935', unable to go thru bridge.
RI open ended drill pipe to 1135'.
RI temp. bomb to bridge at 1730'.
Unable to get bomb thru bridge.
POOH, rigged up to RI 13-3/8"
casing; Running in 13-3/8" casing.

Total cost to date \$83,706.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug. 26, 1971

BACA #5

14D
3090'

232' Drld.
12hrs. Drld.
5-1/2hrs trip
6-1/2hrs others

Formation Bandelier tuff.
Flow line temp. 180°. Drld.
to 3090', blooie line cut out
at flange under floor. Pulled
up to 600', well flowed for
4hrs, and died. Mixed 600 bbls.
mud to pump ahead of cement.
RIH after letting set for 6hrs.,
found no bridges. Pulled back
up to 600' then let set for
3hrs, RIH, found no bridges.
POOH to run casing.

Total cost to date \$79,306.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug. 25, 1971

BACA #5

13D
2858'

153' Drld.
7hrs Drld.
7-1/2hrs trip
9-1/2hrs others

Formation Bandelier tuff. Flow line temp. 180°. Changed stripper rubber. RIH, hit bridge from 935' to 940'. Drld. from 2705' to 2815', water & steam increased. Blooie line cut out under floor. POOH, killed well, repaired blooie line. RIH, small bridge at 935'. Drlg. ahead. Injecting 14 bbls. of water per hour with 6 gallons of soap and 2-1/2 gallons of unisteam.

Total cost to date \$74,056.00

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

AUG. 24, 1971

BACA #5

12D
2705'

367' Drld.
18-1/2hrs Drld.
2-3/4hrs trip
2-3/4hrs others
survey: 3-3/4° at
2380', 5° at 2507',
4-1/4° at 2705'.

Formation Bandelier tuff.
Flow line temp. 170°. Injecting
12 Barrels water per hour w/5
gallons of soap and 2 gallons
of unisteam. Produced water
increase to estimated 75 barrels
per hour with flashing steam
from 2375' to 2705'. RI
deviation survey at 2705', wire
line broke. POOH to recover
instrument and change bit.
Now out of hole.

Total cost to date \$66,931.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 AUG 21

9D
1770'

290' Drld.
21 Hrs Drld.
2-1/2Hrs trip
1/2H others
survey 2-1/4° at 1667'

Formation Bandelier tuff. Flow line temp. 172°. Mist Drlg. Injecting 12 barrels of water per hour with 4 gallons of soap and 2-1/2 gallons of Unisteam.

Total cost to date \$54,581.00

BACA #5 AUG 22

10D
2145'

375' Drld.
22-3/4Hrs Drld.
1-1/4Hrs other
Survey 5° at 1982',
5-1/2° at 2107',
4-1/4° at 2192'.

Formation Bandelier tuff. Flow line temp. 170°. Injecting 12 barrels water per hour with 5 gallons of soap and 2 gallons of Unisteam. Reduced wt. on bit from 40,000# to 28,000# at 2023'.

Total cost to date \$57,831.00

BACA #5 Aug 23

11D
2338'

193' Drld.
11-1/2Hrs drld.
5-1/2Hrs trip
7Hrs other
Survey 5° at 2265'

Formation Bandelier tuff. Flow line temp. 170°. Reduced wt. from 28,000# to 20,000# at 2147'. Increased wt. on bit to 25,000# at 2223'. POOH at 2319'. RI temp, bomb to bridge at 1045'. Line parted and left bomb in hole. Made grapple and recovered all of line and bomb. Bomb was not damage. Temp. at 1045' was 235°. Welded on rotating head drive for 2 hrs. Went in hole, hit and drld. out bridge from 1045' to 1065' and another bridge from 1682' to 1742'. Drlg. ahead.

Total cost to date \$61,631.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

AUG. 20, 1971

BACA #5

8D
1480'

380' Drld.
23-1/2H Drld.
1/2H Other
survey 3/4 of 1°
at 1352'.

Formation Bandelier Tuff. Flow
line temp. 179°. Hit small amount
of hot water and steam at 1229'.
Commenced injecting 4 barrels of
soap & 1-1/2 gallons of unisteam
per hour mixed with 12 barrels of
water. Drlg. ahead this a.m.

Total cost to date \$47,881.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug. 19, 1971

BACA #5

7D
.1100'

Drld. 13-3/4H
Trip 3-1/2H
Other 6-3/4H
survey 3/4° at 1069'

Formation Bandelier Tuff. Flow line
temp. 100°. Drlg. w/air - dusting.
Drld. to 1100'. Drlg. ahead this
a.m.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug. 18, 1971

BACA #5

6D
736'

60' Drld
2-1/2H Drld.
4H Trip
17-1/2H Others

Formation Bandelier Tuff. Flow line
temp. 84°. 8 a.m. to 12 midnight
nipped up and installed BOE.
Drld. mouse hole. RIH found top
of cement at 597'. Blew hole dry.
Drld. plug and 80' of cement. Drlg.
ahead w/air. Injecting 12 barrels
of water per hour with 2 gallons
of soap.

total cost to date \$37,373.00

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

August 17, 1971

ORIGINAL HOLE TO BE REFERRED TO
AS BACA 5A. NEW HOLE TO BE CALLED
BACA #5.

BACA #5

5D	3' Drld.	Formation Bandelier Tuff. RI drill
676'	1/4H Drld.	pipe in hole, drld. from 673' to
	3-1/4 H Trip	676'. Circ. 1H. POOH, rigged up.
	2-1/2 H Other	RI 20" casing including guide shoe
		on bottom on 21 jts. plus 1 piece
		of 20" - 94# - H40 - seamless - S.T.&C.
		to 676'. Overall length 660.24.
		Mixed & pumped in 1330 sks. of
		Class "A" neat cement. Followed by
		330 sks. Class "A" cement with
		2% CaCl ₂ , Displaced with 220 barrels
		of water. Good returns to surface
		CIP 9:35 pm 8/16/71. Landed 20"
		casing at 3:00 am. Installing B.O.E.
		Total cost to date \$33,873.00

()
UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

AUG. 14,15,16

BACA #5-A, Aug. 14

2D 169' Drld.
236' Dev. 1/4° @ 204'
 Drlg. hrs. 7-1/4
 Other hrs. 16-3/4

Drld. from 67-236'. Formation - caldera/cofill. Bit #1, 26" Smith K2 #273 ran 9-1/4H. Bit wt. 30,000#, 60-90 rpm. Mud wt. 8.5, visc. 54. Water loss 17. Filter cake 2/32, TH 7.2, 1/2 of 1% sand. Laid down small collars. Picked up 8-1/2" drill collars & Drilco free pt. reamer. Reamed from surface to 67'. Recmtd. conductor w/25 sx. cmt. & 12% calcium chloride. Repacked swivel. Conductor washed out again. Drlg. w/jet in cellar.

Total cost to date \$13,350.

BACA #5-A, Aug. 15

D
541' 305' Drld.
 Drlg. Hrs. 22-3/4
 Others 1-1/4

Drld. from 236-541' in 22-3/4H. Formation caldera & bandelier tuff. (Top of tuff @ 450'.) Temp. 109°. Bit #1, 26" Smith K2 32 hrs. total. Bit wt. 30,000#, 60-90 rpm. Mud wt. 9.5, visc. 44. Water loss 11.2, filter cake 2/32, TH 7.4, 1/2 of 1% sand. Lost 1H going thru pump & 1/4H repairing mud line.

Total cost to date \$15,670.

BACA #5-A, Aug. 16

4D 132' Drld.
673' Dev. 1/2° @ 655'
 Drlg. Hrs. 18-1/2
 Others 5-1/2

Drld. from 541'-673' in 18-1/2H. Formation bandelier Tuff. Flow line temp. 112°. Bit #1, Smith 26" K2, 50-1/2H. Bit wt. 10-40,000#, 90-150 rpm. Mud wt. 9.6, visc. 64. Water loss 11.2, filter cake 2/32, TH 7.4, 1/2 of 1% sand. Repaired cellar jet line 1/2H. Circulated 1H. Ran Topco 1/2H. Scrapped drillpipe out of hole. Removed rotary table. Pulled conductor pipe. Prep. run 20" csg.

Total cost to date \$18,149.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

August 13, 1971

BACA #5A

1D
67'

67' Drld. 2H
22H other

Formation Caldera fill. Mud 8.4#.
Visc. 52. Finished rigging up.
Drld. rathole. Spudded in with
26" bit at 5 a.m., 8/13/71.
Estimated cost to date \$10,400.
Now drlg. ahead.

UNION OIL COMPANY OF CALIFORNIA
GEOHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

AUGUST 11, 1971

BACA #5

25D

0' Drld.
Other 8Hrs.

Finished tearing down rig. Started
moving to new location 100' East
of No. 5 at 7 a.m.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

August 10, 1971

BACA #5

24D

Footage made 0
Hrs drilled 0
Other 24Hrs

RI drillpipe in hole. Open end & found top of cement plug at 350'. Pull up to 90' & mixed & pumped in 100 sacks of Class C cement w/ 2% CaCl₂. Had full returns during cementing. Laid down drill collars & drillpipe. Commence tearing down rig.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

August 9, 1971

BACA #5

23D

Finished running in hole with overshot, unable to engage fish. The interval 412' to 452'. Unable to go below 452' do to fill. POOH with tool, RI with drilling assembly, cleaned out 452' to 472'. Hole caving slightly. Circ. LH to condition hole. POOH, RI hole with wall hook, overshot bent jt. & knuckle jt. Unable to engage fish. POOH and laid down fish tools. RI with open-end drillpipe to bridge at 465', Pull up to 463' & circ. 15 minutes. Mix & pump 200 sacks thermal 660 cement with 1 cu. ft. perlite/sack. Followed by 150 sacks class C cement with 2% calcium chloride added. Had fill returns during job. POOH with drillpipe, cement in place at 4:30a.m. 8/9/71. Prep. to RI and tag plug this a.m.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 August 6, 1971

20D
2878'D

Stood cmt'd 6 hrs. Filled hole w/45 Barrels water thru 4-1/2" d.p. at 345'. Hole stood full 15 minutes. then dropped away. Mixed & pumped 425 sks. Class C cmt. w/2% CaCl₂. Had partial returns while mixing last 75 sks. cmt. C.I.P. 12:15 a.m. W.O.C. 6 hrs filled hole w/ 17 barrels water. Tested to 250' psi for 30 min. RI w/ 17-1/2" drlg. assm. Now mixing mud.

BACA #5 August 7, 1971

21D
2878'D

Stood cmt'd. 21 hrs. loc. top of cmt. at 242'. Drld. hd. cement to 345' & cement. & unipole alignment tool 345' to 384'. CO fill w/scattered cmt stringers 384'432' with full returns. Loc. top of fish @ 432'. PO, RI 11" o.s. w/15" skirt on 9" d.c. unable to get over fish. PO, RI ditto, assm. w/ bent jt. 5" d.p. unable to get over fish. RI 5" rotary shoe. CO by fish 6'.

BACA #5 August 8, 1971

22D
2878'D

RI w/6-1/4" shoe on 5-1/2" d.p. CO by fish to 552' and L.C. RI w/15" skirt on 11" o.s. on bent single unable to engage fish. Pumped 300 Bbls. mud w/ no returns. RI 17-1/2" bit and CO to 472'. Regained circ. slight indication of top of fish @ 432'. RI wall hook on o.s. on knuckle jt. on bent sg. unable to engage fish - could loc. at 432' - RI ditto assm. w/ knuckle jt on top of bent single - unable to engage fish. RI 15" skirt on 11" o.s. on bent single on knuckle jt. Unable to engage fish. RI wall hook - 11" o.s. - knuckle jt. - bent single - U.T.L.F. Now RI wall hook - 11" o.s. straight jt. - knuckle jt.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

Aug 5, 1971

BACA #5

19D
2878'

Mix and pumped 500 barrels additional salt-jel. No returns. RI 4-1/2" open end drill pipe, located top of fill at 346'. Circ. fill from 346' to 387' with 300 barrels of salt-jel. No returns. Let stand 1 hr. and relocated top of fill at 387'. RI 19" by 42' fir casing alignment tool. Stop at 355', pull out tapered nose of alignment tool from 12" to 5-1/2". RI and set alignment tool from 345' to 387'. Cemented hole with 200 sacks pozlantic cement followed by 400 sacks class G cement. CIP 5 a.m. Fluid level while cementing rose to 20' from surface. Now standing cemented

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 August 2, 1971

16D
2878'

Cleaned out fill 304' to 425'
with air and mist for 20 hrs.
The hole was sluffing and unable
to keep clean below 400'. The
mist pump broke down, repair
same this a.m.

BACA #5 August 3

17D
2878'

POOH with the bit. Installed mud
lines and pumped in 1000 barrels
of gel-mud and LCM, unable to
load hole. Capacity of hole
300 barrels. Mixing mud and
LCM this a.m.

BACA #5 August 4

18D
2878'

POOH with bit to check fluid
level. Fluid level at 300'.
Mix & pump 500 additional barrels
of mud containing LCM. Hole did
not fill. RI to check fill,
unable to go below 348'. Apparentl
casing parted. POOH to check
fluid level, fluid level at 325'.
Mix and pump additional 1000 barrel
of mud containing LCM. Hole did
not fill. Total mud pump 2500
barrels. Mix 500 barrels of salt-
jel and LCM this morning.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 July 30, 1971

13D 258' drld.
2519' 12-1/4 hrs drlg.
1-1/2 hrs trip
10-1/4 hrs other

Formation tuff. Temp. 160°F deviation 2° at 2345'. 6 compressors at 2800CFM. Finished rig repairs at 8:30 a.m. 7/29/71. Ran temp. survey to 395'. Unable to work through bridge at 395'. RI with open end drill pipe and worked through bridge and ran to 460'. Temp. at 2200' 264°F while flowing. POOH with drill pipe and RIH with drill assembly. Cleaned out 40' of fill. Drlg. at 2519' this a.m.

BACA #5 July 31

14D 359' drld.
)2878' 18-1/2 hrs drld.
1-1/2 hrs trip
4 hrs other

Formation tuff. Temp. 165°F deviation survey 2-3/4° at 2693'. Drld. to 2878'. Trip for new bit and repaired blooie line, had steam and water increases from 2700' to 2878'. While POOH at 2332' flow from well ceased, and while PO at 480' to 390' had to work through bridges.

BACA #5 August 1

15D
2878'

Repaired the blooie line and installed 8-3/4" orifice. RIH with drilling assembly. Work through bridges from 415' to 420' and 2157' to 2220'. RI to 2850'. Un-loaded and circulated hole clean at 2850'. PO to 2835' and pipe parted at 376'. Fish consists of 17-1/2" bit, 9" o.d. float sub, 1-9-1/4" drill collar, 1 - 9" drill collar, 1 crossover, 9 - 7-3/4" drill collars, 1 crossover, 68 jts. 1 pc 5" drillpipe. RIH with fishing tools and found fill at 304'.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 July 27

10D	159' drld.	Formation tuff. Temp. 165°F
1990'	15-1/2 hrs drld.	deviation 1° at 1905'. 6
	4-1/2 hrs trip	compressors at 2900 CFM.
	4 hrs other	Drld to 1846'. Trip for new
		bit. Drlg. at 1990' this a.m.
		25' fill on the trip.

BACA #5 July 28

11D	271' drld.	Formation tuff. Temp. 165°F
2261'	14-1/4 hrs drld.	deviation 2° at 2188'. 6
	1 hr trip	compressors at 2900 CFM. Drld. to
	8-3/4 hrs other	2261'. Trip for new bit. Pulled
		to 1561' and the rig broke down.
		Repairing rig this a.m. Rig was
		down at 10:30 p.m. 7/27/71

BACA #5 July 29

12D		
2261'		Repairing Rig 24 hrs.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 July 24, 1971

7D
1428' 591' Drld.
 Drld. 22-1/4 hrs.
 1-3/4 hrs other

Formation tuff. Flow line Temp. 120°F deviation survey 3/4° at 954' and 1/2° at 1230' in steam. Using 6 compressors and 2900 CFM. Drld. to 1428' with bit #4. The water flow below the casing shoe decreased and first steam entry at 1200' at a volume too small to measure.

BACA #5 July 25

8D
1650' 222' Drld.
 13-1/2 hrs drlg.
 3 hrs trip
 7-1/2 hrs other

Formation tuff. Temp. 160°F deviation survey 1° at 1560'. 6 compressors and 2900 CFM. Drld. to 1538' with bit #5, trip for new bit. Welded a jet in the blowie line and tie downs on the rotary head. Stood back 9" collars. RI with a new bit, had fill from 1550' to 1650'.

BACA #5 July 26

9D
1831' 181' Drld.
 23-1/2 hrs drlg.
 1/2 hr other

Formation tuff. Temp. 160°F deviation survey 1° at 1680'. 6 compressors at 2800 CFM. Continue drlg. this a.m. to 1831'

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORTS

BACA #5 July 21

4D
390'

24 hrs.
no drlg.

WOC 7 hrs., welded up 26" conductor
and 20" casing and welded on 20"
flange. Nippling up BOE this a.m.

BACA #5 July 22

5D
390'

1/2hr drlg.
1 hr trip
22-1/2 others

Drlg. with air, 6 low 2 high and 2800
CFM. Finished nippling up BOP and
blooie lines. Tested BOP to 500' psi
for 15 minutes. O.K. RIH with the
drlg. assembly. Drlg. cement this a.m.

BACA #5 July 23

6D
837'

447' Drld.
15-1/2 hrs Drld
2-3/4 hrs trip
6 hrs other

Formation tuff. Deviation 3° at 700'
Drlg. with air compressor, 6 low
2 high at 2900 CFM. Drld. 40' of
cement and float shoe, unable to dust
below shoe because of water entry.
Approx 400 GPM. Drlg. with soap and
water and air. Formation very
unconsolidated to 621'. Trip for new
bit at 621' because of formation change.
Drlg. this a.m. at 837'.

UNION OIL COMPANY OF CALIFORNIA
GEOTHERMAL DIVISION, NEW MEXICO
DAILY DRILLING REPORT

BACA #5 July 18

1D
107'

107' Drld.
Drld. 7-3/4 hrs.
16-1/4 hrs other

Formation surface fill. Deviation
1/4° @ 86'. Mud wt. 8.7# viscosity
68. Moved in, rig up Loffland
Brothers rotary tools. cmtd. at 15'.
Drld. rat hole and mouse hole and
spudded in at 11 p.m.

BACA #5 July 19

2D
390'

283' Drld.
Drld. 4-3/4 hrs,
trip 1 hr, 18-1/4
hrs other

Formation surface fill. 1/4° @
296'. Surface mud wt. 9# per casing
viscosity 76. Drld. 15' hole to
390', circulated 1 hr. POOH pick
up the 26" hole opener with a 15"
pilot bit. Open 15" hole to 26"
from 0 to 296.

BACA #5 July 20

3D
390'

No drlg. hrs.
Md wt 9.1#
viscosity 72.

Open 15" hole to 26" from 296' to
390'. Circulated to condition hole
for casing. POOH. Rig to run 20"
casing. Ran casing to bridge at 86'.
Unable to work through bridge. POOH
with the casing, ran drilling assembl
Cleaned out bridge. POOH with the
drld. assembly, ran and cemented 9
joints and one piece of 40#
seamless 20" casing at 390' with
850 sacks class C cement with 2%
calcium chloride. Had good cement
returns to surface. Did not bump
plug. Float held O.K. CIP & JC
at 8:15 a.m.