Current meter rating
Hoff #180 - Aug 2, 1954

\[ V = 0.913 R + 0.055 \text{ (below 5/sec)} \]

\[ V = 0.937 R - 0.075 \text{ (above 5/sec)} \]
May 28, 1946

Subject - Water decision between J.R. Lucas and Felger R.L.

Peachall and I left Collins 1:30 P.M. in Chas. salon and arrived Lucas home 3 P.M. in rain. Lucas had called at our office on 25th and wanted to see Peachall who was out of town. I listened to his story and promised some aid. King on call from Denver arrived shortly after we did. Lucas told story again and King referred to a supreme court decision in the same situation in 1922. Lucas said his rights were being abridged and Felger was endeavoring to force him to transfer his water to a lower ditch which does not cover all his land (11 acres). This description of how Felger proposed to divide was not understood and appeared unfair and arbitrary. Said Felger unreasonable.

When rain subsided drove to Felgers home and all 5 of us drove to reservoir on his land (about 155 acres) and looked at
reservoir outlets (3) and ditch head gate. Reservoir has been improved in last few years by S.C.S. in which they both have shared expense. Reservoir is about 4 acres, sits on side of steep hill about 30 ft, below and 600' distant from Dry A(?) site in NW 4 Sec 11 T25 S R6 W. A lateral from the reservoir covers all of Lucas place but a lower canal does not (name?).

Felger proposed a divider at A to give Lucas \( \frac{3}{4} \) of 7/8 (not sure of this) 74 7/8, who is to take his share to lake past B and down old channel and be measured in 3" Russell flow at C. At present Felger had an old bent cross cut saw blade stuck in at A which Lucas threw out. Some complications when Felger takes out water for his lands to right and left from A. Most of the water goes down steep grade to lake and both take water from gate E, Felger only from D. Felger keeps gate E locked and has in the past (50 yrs)
I suggest that the following, a part of which is now held by the Water Area on top of dam to overflow water:

- A new spillway ditch
- Old filling
- New filling
- Lake
- Gate D
- Gate E

Dry Creek (?) ditch — built 1946

about
1/4

divider
opened gate when water was due (10-day intervals for this 11 acres) Lucas has shown this land 3 yrs. and objects to gates being locked. Says he does not have to wait 10 days. We did not learn how many hours water was run out of E for each period or how much.

Gilga proposes a 6" Parshall at F. to measure outflow to Lucas in volume equal to inflow at C. Lucas wants it measured at A. Think details will catch on divisor and cut his flow disproportionately which can be tested. Would have ditch side read gage. Thinks a recorder a good idea.
July 23 1946

Left Dalicola about 8:20 AM, and at Moffat tried to locate the Platz, Biggs, and Dieckman. Found only Russell Biggs at home. D. at Rome where he was a 2nd ship. Russell Biggs - antenna only.

Elmer Biggs

Dieckman " 乡村振兴

Ora Platz "

Olc "

At Hope began search for US65 crew on pumping tests. Made useless trip 6 mi east of Hope. At Moore's garage was directed 4 mi east to Crow ranch. Met Mr. Bow who directed me to where drill was, 6 1/2 mi east 2 mi north of McGinty. Found rig but no one there at noon. Returned and waited till 4:40.

On getting back to McGinty road I turned west just for curiosity and in a mile ran onto the pumping test in progress with a Reel Bloom generator.
making reading. In about 1½ hrs
1565
Wm. Buzzard and Ward Mathews of
Bureau and 2 others came up and
still later 3 of the men on a pick up.
Test had started about 9 AM and was
to continue to 2 PM followed by
 recovery test. Also the well rig
will drill pumping well tomorrow.
At this place well consists of 8 inch
casing with Johnson screen. Turbine
pump gear head driven by Allis Chalmers
Tractor power unit. Well is 33'
depth artesian clay. 2 gravel
shale - 3 sets of lateration holes
met each stratum. Discharge
ground at 50 gpm was by other.
Pipelines about 80 feet long.

Called at Public Service Co.
Was told they had about 180 pumps
on lines and REA 140. Load
greater than plant capacity 30
they are retaining it by giving 6-Day service.

RHA Texas 2,260 KW max
and normal no pumping load is 4.0 TH.
Co-Agent Greenwood not in. Called him
later on phone.

July 24

With Dr. Arthur Monet, he in his
car and I in mine drove to La Jara
to meet Bill Bailey, Co-Agent. M.
is inspecting certified fields on
potatoes. Waited for him to take
One of 2 farmers then a third came
in whose son had a sick 4-H steer
calf. So we all went out to see calf
that had a fox-tail ball in its throat.

The only man who had a field of
potatoes also had a newly finished
well and the pump was being installed
when we arrived. Name Timmons
(see card). Bailey and I then
called on Del T. Skinner who has
We'll (see cards) took Bailey back
to the joke. He told me where to find
C.C. Dickman. Directions were not
quite right and I went past him.
Finally found out where he was.
Dickman has a substantial
ingeniously contrived rig with a 145'
adjustable mast. It is mounted on a
truck with control boxes in cab which
has right hand seat reversed. Truck
engine drives 2 winches and power
reciprocating device for spudding.
This involves many clutches, shafts
and transmissions because truck is
also motored. His drilling method
are unique. He was at about 60'
in hard black blister clay with open
hole below 38 feet. He plans to drill
open hole to about 250 where he
expects to encounter lava. Then he
will set some 16" casing in 40' lengths
that he got in Texas跌破filling with
gravel. This he cemented in. Next he drills about 10' hole then lava which may be 15' thick here. This hole is to be continued 100' with no casing into gravel below. The pump is set with a suction pipe reaching into the lower gravel. I forgot to ask but this suction pipe is over 200 feet long. He says that when pumping starts, gravel is pumped and a large cavity is formed beneath the lava and therefore the long suction which keeps the hole clean.

Talk took color pictures

Drove back through Alamogordo and to U.S.G.S. drilling site. Missed Powell but saw slurry Western drill for 6' pilot hole had been drilled and reamer was rigged for 8' casing.
Readied to be done tomorrow, just
mentioned Baran crew who had been
jettisoning observation wells with
air compressor. I had wanted to
see that.

July 25

Called at home of E. L. Ulstrom
agent for Worthington but found he
was out of city. Called at Public
Service and found Beekman there
met Dale Towner, who is familiar
with pumping.

Drove to Monticello. Called on
J.W. Maxey 2 ½ miles north of town and
made plans to go with him north in P.M.
Back in town called at SCS office
and met Repton and others.
Discussed land leveling, irrigation
under present circumstances. Much land
levying just 50 to 75 cts. per acre not worth damage to gravelly farms.
In P.M. saw several plants with
J.W. Maxey nearby and at Center.
then went to a swimming pool
2 in. N.W. of Hooper. Temp. 120°
A guess 12 ft. Depth 3000 ft.
Generator 1/2 hp home pool
Saw another 600 gpm artesian well
southeast of Hooper - see cards
Bell is a driller (Alamosa) who has heavy H & W tools

July 26

Called on W. I. Johnson, Mgr. of
San Luis Valley Elec. Cooperative Inc.
Very cordial and cooperative. REA
has 165 pumps on their lines. See
business in sight to connect 200 more in
next 3 years. These are now engine driven
in their territory. Will give me data
on power consumption when requested.
Does not think change very great from
sumbing to submersible. Has thought of
permanence of supply.
A. A. Goodman says practically only water supply now is from pumps. Water out of ditches July 25 except for small flow in river. Reservoir water gone.

Called on Forestor of Bureau of Reclamation. Was introduced to man by name of Brown who says that a large number of the old observation wells are being observed twice a year by the men. It is hoped USGS will make ground-water study of Valley. Assured me cooperation in my field.

Drove south-west to look at 2 wells Johnson called to my attention near Camel School, Schend, and Ryker. One east. South-west well is 1 1/2 miles of Ryker. Sat Mary's after lunch again but he said it was not necessarily
to make a pump measurement.
Drove to Shields 4 1/2 miles west on 4 mile road. S. is Pearless dealer.
His shop. Drove west to intersection of highway 112. Land within 2 miles of Rio Grande ditch seemed to be practically abandoned. Returned to Greenbush Road on County line.
Drove 3 mile north to where one of Manys rigs was working. Smith, son of Manys former driller.
Drove on to Salida.
Manys calls his place Manysville. Has shop but no machinery toks. Recently sold about 20 Pomona pumps without motors or belt head. Was planning to build a belt head employing machinist near Center. XR has a
finey furnished home, built of adobe on Mexican style incl finery
several rented dwellings, and wall
shops & outbuildings of adobe.
July 13. Called by Kathiil Chiloon.

by letter to look at a pumping plant

R.W. at Loveland. Pump built second
t had and installed by Harris Elec. Co.

34 Loveland. Doesn't pump water.

With Chiloon drove to plant. Found

Washington 8' double suction pump

V belt driven by 1/2 hp W. Wayne 15 hp

440 volt 1800 rpm motor. Pulleys

are 10" OD x 16 3/4" OD reducing speed

Pump from pump fed by ditch thru

2000 (?) ft of (12'?) pipe. Total lift

reported as 30'. Had trouble first

with priming then when primed would

pump no water. On trying to start, only

a burring sound came out so I couldn't

not determine rotation. Tennant

not available. Back in Loveland

called on Harris who had performance

curves of pump sent by Washington. Pulley

v belt also sent by W. Introduction to 1000

RPM. Decided to form a Washington man

donning up after checking curves. Blue

print curves checked 16 to reduction to 1000 rpm.
Use of domestic water
Possibly 500 grass + gardens
250 persons in residence
50 cattle + horses

Yield of Lory Spring .16 sec ft
After shooting 150' length .22 sec ft
After 75' more blasting .26 sec ft 10 sec

Water stands 2' higher in spring hole 10' from trench on Ws side. Many cobbles but no good evidence that a clean gravel was encountered.

Res. has been dried up annually to clean out algae
20 AC in plots
20 AC in pasture
Hay Gulch Ditch has 25/6 acre\(\text{ft}^3\) 3
2 acre\(\text{ft}^3\) 4 5

Ammons Ditch 6 acre\(\text{ft}^3\) flood

Springs Jury
Tayler 1 2 3
Notes on trip Lemon to Ordway
June 24, 1953

Russell. Called here 2 years ago with county agent and measured water from new well R. had put down himself. Later he put in a second well & deepened into original increasing capacity gradually. Still later he put in 2 more wells himself and direct connected them to H.C. pump in pit. These 2 wells nearly same as 1st one. 21' 22' water depth. They give it in, 62 acres pastures in loaders. 26 acres oats 46 acres new seeding alfalfa (not good). 26 acres sudan 50 acres coke. This appears too much which he agrees. Thinking about a reservoir. Mentioned 90 acres. I advised about 20 acres.

Paul Rose.

Not done. Mrs. R. said they were sprinkling 35 acres pastures. Thinks well might take care of 45 acres. Wyss system on wheels. She pump
Bobbie Moore. The old well systems seem many years ago still being used but in each case a rub cone, casing and turbine pump (Cal) installed. Old well syphoned into new. Well on south side of road taken in. W. sent no one trying to pump steady well won't take at. Looks like about 40 ac. off. 2 plants.

Kenster. Interesting layout. One of the sons showed the ground. There are 4100 and 2 engines driving plants. Pumps put out 300-500 gpm. Some have been in 10 or more years. I guess. These are all in little horse drawings but Stiles Fort is on west edge. A long wide ditch has been built along west side (2000,?) and a ditch has been built into it. 4 feet deep
near north end. This was said to be used to get grass started on banks and convey water south. A long, narrow reservoir results from a lot of dirt mounds. Late this flows a stream of 1000 gpm from a collecting pipe line of 18" dia home made HDLW 3000' long. This reaches to their boundary fence and within 50' of shallow channel of Snake Fork. Other meandering will permit flood water to be captured in reservoir. Also an arrangement of ditches to divide creek flow with his neighbor. Brooks below. A sand dam in creek now broken. Creek dry now flows in winter.

60 ac. alf. 70 ac. corn, 50 ac. barley + haban clover. 40 ac. beans all appear but should total about 220 ac.
Louis Brooks, Galbraith tenant.
One of their wells with 30 hp Cola pump supposed to be about best in area. J. says it isn't as this year as it has fallen off considerably. When inspected was breaking frequently. Was delining alf on 20 ac which had not been in. Must be some sub. in. Not as good as last year.
Dryer and some hail. Some alf dying of root rot. Steele Ford floods over part of land. May be water table is lower. Pumping at least 1 cfs today. Other well not so good had 25 hp. Both their wells have more pressure than would be indicated for alf pump.
1/3 ac. alf. 10 ac. corn says.

Will
Not being used.
June 25

Henry Bechtold had seen my car & came into hotel as I was about to eat breakfast. Asked me to stop at St. Lyon to see something.

Fred, Charles & Rabin had gone to farm so drove there and discussed matters concerning grand water legislation. He said he planned to call on Crawford and also discuss matters with Mr. Henderson.

He knew nothing about Hafaneko's moves on Big Sandy. I promised I would tell him if I learned anything from Gordon cell in Laramie. Also promised to send him copy of Idaho's new law.

In Las Animas called on A. Agent Zanitch. He said new well was going in on north side of river. Gave me name of Ancorvar Valley Water Supply Co. of which Jim Dyek (Dike) of Las Animas was treasurer. He & his partner (Tomlin?) have West Weiss service staying.

Died in Kansas. He gave me log of an
well path of Holly 18 miles. Same Gilbert Ranch. Bascum 1/2 mi. west of Rome tire. 86° to water
0-80 clay
80-175 gravel, clay, shale
175-198.5° clay 84.9
198.5° shale 1.5
126° perf. casing
At Ft. Myers Bechtold was drilling a new hole in upper Dakota near one that Armby had drilled with rotary in 1947. Well improperly sealed off and nearby well had jumped from 6 to 13 grains hardness. He pulled casing and plugged hole. Quality came back.
At Lamar found at call at office that GL Allott would not be back until Jan 29. Told secretary some story about Safarick & Emerling. Maybe Allott will write me.
June 26

Near Holly

M.C. McCormick. New well in sandy land
area-flat SE 1/4 Sec 38 23S 42W
40hp Worthington. Reeves said he started this
pump this morning. Not running 9:30 AM

J.B. McKeen #1 Canfield

0 - 6 top soil
6 - 14 clay + gravel mixed
14 - 21 sand + gravel, dirty
21 - 26 sand + gravel + clay mixed
26 - 31 sand + gravel dirty
31 - 36 sand + gravel + clay mixed sand
36 - 40 sand + gravel mixed
40 - 47 sandy clay
47 - 50 sand + gravel
50 - 55 sandy clay
55 - 65 gravel, medium + coarse
60 - 69 sandy clay + gravel
69 - 73 gravel medium to coarse
73 - 74 2.00
74 - 75
75 - 28" hole 16" casing 14/16
805 ft. from 12'dd 64 ft. stake.

NW 22S 22S 42W
C.F. Schmidt NW 5W Sec 2 23S 42W
1250 gpm well, Water table 64'
Confined 2 test
  1-3 topsoil
  3-4 dirty sand
  4-5 clay
  5-12 clay+gravel mixt.
  12-24 gravel, course dirt
  24-26 clay
  26-74 gravel, medium to coarse
  76-78 soft sand rock
  78-90 gravel, medium to coarse
  90.91' clay
  91.5-92 sand rock
  92-93 shale
John Trapness, NW 8 W 5 23S 42W
Test hole only
Est. cap. 1200 gpm +

Water table 43'?

0-5 top soil
5-12 clay
12-18 sandy clay
18-20 dirty gravel
20-23 clean, brown
23-24 dirty gravel
24-39 sandy clay
39-46 sandy, gravel, dirty
46-74 sandy clay
74-93 gravel, medium to coarse
93-107 water, sand & gravel
107-108 clay
108-115 gravel, fine to medium
115-182 gravel, medium to coarse
182-183 clay
183-185 shale
Jim Roemer NW 4 Dec 29 22S 42W
1-10 top soil
10-21 sand + gravel
21-35 clean gravel
35-36 rock, not bed
36-47 clay
47-50 gravel, medium
50-53 gravel, coarse
53-57 sand + rock
57-58 gravel
58-61 sand + rock
61-67 gravel, medium to coarse
67-69 sand + rock
69-73 gravel, solid + loose strips
73-74 clay
74-82 sand + rock with strips, clay
82-112 gravel, coarse with rocks, loose
112-116 rock, very hard

Jim Roemer NE 4 Dec 22 23S 42W
0-3 top
3-8 gravel
8-12 dirty gravel
12-88 gravel, medium to coarse with rocks
88-98 clay
98-99 rock
99-100 shale
June 26

Jim Romer test only
SE 41 8 T 24 S R + 2 W
1-10 50
16-16 sand and dirt
16-32 clay
32-38 soft rock and clay strips
38-43 rock
43-76 clay and rock strips
76 shale

Above logs from a number collected by J. B. Keehn at Red Hat Bank Valley. A number of others in an outlined area on map not included and some in River Bottoms. McKeehn is well informed on the general subject of wells and pumping and local conditions.

Calvin Flint while hunting his wells I caught up with him and he started the pump in Dec. 23 S 43 W 140 hp Washington and imported 3500 gpm. 12" 0D discharge pipe high vel. Well 70' deep.
June 27

D.P. Daniel drilled 1950 by Pratt of Kans. Hubbard test hole 144' deep, 50' static, 30' hole 16' casing, 20' ill in 560 gpm. Hole had some hard rock structure.

5 mi N 2 1/2 mi east to well to be put down in July 1100-1500 gpm est. Also 3 N 2 E to Campbell new site for July drilling. 86' to water 136' deep. No water rest of him for 5 miles.

John Rhodes Dec 15 225 42 W

28' to water 105' deep

lift 47 @ 1400 gpm. pipe line leaks no plant not yet used

SCS has log. Drilled 9 test holes.

Gilbert Lehn Bauer. Well has not yet been pumped tested. Maybe next week. Does not think much of the log given me. 1st test hole in SW cor also good. Lowest spot. Test hole to north hit shale in about 100' or less.
Bollman Sec 21 13S 44W

well drilled by John Snyder & Cheyenne Wells - 500 gal. capacity, 136' deep and 35' to water. Has 1/4 HP sprinkler, just getting started.

From L.H. Confield

[Table]

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4</td>
<td>top</td>
</tr>
<tr>
<td>4-9</td>
<td>clay</td>
</tr>
<tr>
<td>9-47</td>
<td>gravel</td>
</tr>
<tr>
<td>47-70</td>
<td>gravel + rocks</td>
</tr>
<tr>
<td>70-90</td>
<td>gravel + sand + some small clay slippes</td>
</tr>
<tr>
<td>90-109</td>
<td>gravel + rocks + some clay balls</td>
</tr>
<tr>
<td>109-110</td>
<td>clay</td>
</tr>
<tr>
<td>110-</td>
<td>rock lenses</td>
</tr>
<tr>
<td></td>
<td>111-</td>
</tr>
</tbody>
</table>
June 1953

Galen: Dear - Centfield does not consider this Ogallala.

0-10
10-52 - gravel
52-57 - clay
57-82 sand + gravel, clay strips
82-91 sand
91-102 sand + clay
102-122 sand + occasional clay strips
122-124 gravel
124-134 clay + sand, clty
134-147 sand
147-157 clay
157-168 sand + clay
168-206 gravel
206-208 clay
208-217 gravel
217-218 clay
218-260 gravel
no shale
John Tezak 1953

Aug. 4

Base pump to disk: 0.6
To meter not pumping: 31.27'
Disch pipe: 8/8".

Hoff meter

\[
250 \times 0.0, 0.0, 0.0 = 6.25 \% \\
6.25 - 0.924 + 0.3 = 5.77 + 0.3 = 5.80
\]

Water in well 34.93 to pump base.

\[
\text{Lift} = 34.93 + 0.60 = 35.53
\]

\[
Q = KV = 140 \times 5.80 = 8.46 \text{ gpm}
\]

\[
\text{W. hp} = \frac{8.46 \times 35.53}{3960} = 7.61
\]

\[
\frac{7.61}{14.38} = 53.6\% \text{ W-W. eff}
\]
Well 36" - 24
24" - 48.9"
1946? Drilled by self.

Elec meter G.E. V=.5 50 amp k-24
Qreq 57.7, 57.2, 57.3

\[
\text{Power} = \frac{8 \times 3600 \times 24}{57.4} = 12.65 \text{ kW} = 16.18 \text{ hp}
\]

Motor output \( 16.13 \times 5.89 = 14.38 \text{ hp} \)

Pomona Turbine
15 hp motor
24" well in 36" boiler pit. 26½' deep
depth 26½' drilled 1959 owner
Pomona pump 5 hp
Meter 506 revs in 418.8 49.0 = 6.14 A
6.14 x 0.924 = 5.67403 = 5.70
Power meter Sangamo LC 20 15-amp
$K_a = 7.2 \times 140 V$
8 revs in 61.9. 61.9
$\frac{8 \times 3600 \times 7.2}{61.9} = 3.35 \text{Kw} = 4.48 \text{hp}$
output 4.48 x 0.85 = 3.81 hp

$Q = KV = 53 \times 5.70 = 302 \text{ gpm}$
$\text{whp} = \frac{302 \times 25.1}{3960} = 1.92$

$W - W_{eff} = \frac{1.92}{3.81} = 50.3\%$

Overall $\frac{1.92}{4.48} = 42\%$
Probable high to prevent over-pumping well
F.R. Allen

6" Berkley HC pump 15 hp motor
Gate valve open 4 hrs.

8" OD = 7 3/4" ID

300 revs in 44.8, 44.5 = 6.72 R/s
6.72 x 44.4 + .03 = 6.37'5

Power 37, 33, 23, 22.5 Volts

Meter: 8 revs in 56.0 sec -

8 revs in 54.4 sec Code

Power input: $\frac{8 \times 3.64 \times 24}{54.4} = 12.77 \text{ KW} = 17.0 \text{ hp}$

output $17.0 \times .89 = 15.13$

W hp = $\frac{13.65 \times 880}{3960} = 2.98$

\[\text{Efficiency} = \frac{2.98}{15.13} = 19.7\%\]

500 revs in 35.6 sec, Valve wide open

$\frac{400}{350} = 11.42 \text{ R/s} = 10.74 \text{ l/sec}$

$Q = 132 \times 10.77 = 1420 \text{ gpm}$

W hp = $\frac{1420 \times .27}{3960} = 8.6$

Motor = motor 8 revs in 49.6 sec = 13.92 KW

18.67 x .89 = 16.6 hp

\[\text{Efficiency} = \frac{8.6}{16.6} = 51.7\% - \text{pump eff}\]
Pumps from reservoir
Discharge into ditch thru
20' 6" steel pipe 26" x 45° elk
23' 8" DD pipe
Operates with 6" gate valve
opened 4 turns.

\[
\text{Useful lift} = \frac{13.43}{10.4} \approx 2.4
\]

Pipe losses at 120 gpm (approx)

\[
\begin{align*}
20' 6' pipe & : 3.6 \\
23' 8' & : 1.9 \\
2-6' 145° els & : 2.5 \\
8' foot valve & : 4.0 \\
\text{Total} & : 10.0 (say 10')
\end{align*}
\]

18.67 hp
Aug. 5, 1953. On way from Pueblo to Monta Vista called on Topham at Ranch headquarters in Baca Grant. New firm took over in 1950. Since then 5 surface water wells have been put down near headquarters 80' deep. 13 on the west side of Valley near Aguaches 100' to 260' deep and producing 500-2500 gpm. 5 artesian wells 500-700' deep in central part of Valley and 2 north of Moffat. Some flow over 1,000 gpm. Firm has acquired land extensively outside of original grant and developed several thousand acres. More to be developed. Has $1,000,000 or more invested.
<table>
<thead>
<tr>
<th>Obs</th>
<th>Well</th>
<th>Dist from Pump</th>
<th>Depth to H₂O</th>
<th>Elev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>N</td>
<td>26.2</td>
<td>5.37 - 23</td>
<td>91.03</td>
</tr>
<tr>
<td>6</td>
<td>N</td>
<td>27.3</td>
<td>5.27 - 23</td>
<td>91.06</td>
</tr>
<tr>
<td>5</td>
<td>N</td>
<td>69.5</td>
<td>5.21 - 23</td>
<td>23.06</td>
</tr>
<tr>
<td>4 1/2</td>
<td>N</td>
<td>134.3</td>
<td>4.70 - 23</td>
<td>91.01</td>
</tr>
<tr>
<td>4</td>
<td>N</td>
<td>300'</td>
<td>4.35 - 23</td>
<td>91.04</td>
</tr>
<tr>
<td>4 1/2</td>
<td>N</td>
<td>600'</td>
<td>4.66 - 23</td>
<td>91.04</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>6.0'</td>
<td>5.03</td>
<td>91.04</td>
</tr>
</tbody>
</table>

Motor, Meter, Reading: 256917 X 10²

1. 122 W 109 4.72 91.16 901
2. 133.5 4.72 91.06
3. 136.5 4.75 90.93
4. 573.5 E 4.83
5. 53.7 4.61
6. 753.7 4.61
7. 128.2 No of 12 5.03
8. 533.8 E 4.61
9. 533.7 4.61
10. 533.8 4.61
11. 533.8 4.61
12. 533.8 4.61

Pump Well: 5.36

Time Start pump: 11:52 PM

Electric Meter: 00000
Note: All measures 4, 5, 6, 7, 13, 14, 15, 16 made with noise sounder on.

<table>
<thead>
<tr>
<th>Time</th>
<th>Depth to water</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 N</td>
<td>6:30 PM</td>
</tr>
<tr>
<td>13 N</td>
<td>5:12</td>
</tr>
<tr>
<td>4</td>
<td>5:12</td>
</tr>
<tr>
<td>5</td>
<td>5:12</td>
</tr>
<tr>
<td>6</td>
<td>5:04</td>
</tr>
<tr>
<td>7</td>
<td>5:03</td>
</tr>
</tbody>
</table>

Flow meter reading of flow meter:
Reading 48 = 258 * 60 x 100

Pumped well 1541 at 1:08 PM
Flow meter reading 259384 5:07:30

Pumped well 1672 at 5:05

Last readings today with Chus watch. My watch at hotel. Chus watch 6 min faster than mine.
<table>
<thead>
<tr>
<th>Well</th>
<th>Depth to 4.0</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>17.01</td>
<td>10:03</td>
</tr>
<tr>
<td>7</td>
<td>9.285</td>
<td>10:02</td>
</tr>
<tr>
<td>6</td>
<td>9.46</td>
<td>10:09</td>
</tr>
<tr>
<td>5</td>
<td>7.76</td>
<td>10:10</td>
</tr>
<tr>
<td>4</td>
<td>6.10</td>
<td>10:11</td>
</tr>
<tr>
<td>13</td>
<td>4.76</td>
<td>10:14</td>
</tr>
<tr>
<td>14</td>
<td>4.75</td>
<td>10:17</td>
</tr>
</tbody>
</table>

**Flow meter:** 26.10 30 x 100 @ 10:00 A.M.

**Elec. meter**

<table>
<thead>
<tr>
<th>Well</th>
<th>Depth to 4.0</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main</td>
<td>17.17 - 0.35</td>
<td>1:32</td>
</tr>
<tr>
<td>15</td>
<td>16.76 - 23</td>
<td>1:34</td>
</tr>
<tr>
<td>7</td>
<td>9.34</td>
<td>1:37</td>
</tr>
<tr>
<td>6</td>
<td>9.51</td>
<td>1:40</td>
</tr>
<tr>
<td>5</td>
<td>7.81</td>
<td>1:41</td>
</tr>
<tr>
<td>4</td>
<td>6.82</td>
<td>1:46</td>
</tr>
<tr>
<td>13</td>
<td>4.79</td>
<td>1:51</td>
</tr>
<tr>
<td>14</td>
<td>4.79</td>
<td>1:53</td>
</tr>
</tbody>
</table>

**Flow meter:** 26 14.2 4 @ 1:30

**Elec. meter**
<table>
<thead>
<tr>
<th></th>
<th>+ S</th>
<th>H.I.</th>
<th>- S</th>
<th>Elev</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.38</td>
<td>96.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.54</td>
<td>95.46</td>
<td></td>
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<tr>
<td></td>
<td>3.79</td>
<td>96.21</td>
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<tr>
<td></td>
<td>3.91</td>
<td>96.09</td>
<td></td>
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<tr>
<td></td>
<td>3.96</td>
<td>96.04</td>
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<tr>
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<td>4.52</td>
<td>95.48</td>
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<td></td>
<td>4.90</td>
<td>95.09</td>
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<tr>
<td>X</td>
<td>4.69</td>
<td>95.31</td>
<td></td>
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<tr>
<td></td>
<td>4.32</td>
<td>95.68</td>
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</tr>
<tr>
<td>X</td>
<td>4.76</td>
<td>95.24</td>
<td></td>
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<tr>
<td></td>
<td>4.84</td>
<td>95.10</td>
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</tr>
<tr>
<td></td>
<td>5.12</td>
<td>94.88</td>
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</tr>
<tr>
<td></td>
<td>4.22</td>
<td>95.78</td>
<td></td>
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<td></td>
<td>4.12</td>
<td>95.88</td>
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<tr>
<td></td>
<td>3.69</td>
<td>96.31</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>4.55</td>
<td>95.45</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Point

#15
11.84' to W.S. ± 11:30
84.78

Elev

W.

#15
10.72
11:50
84.74

Obs well

#15
12
10
8
3

Well house. 2x4, add 0.05 = 96.36 = pump
6050 = M.P.

#15 Check

#15 6' NE of well
<table>
<thead>
<tr>
<th>Well</th>
<th>Depth to H₂O</th>
<th>Time</th>
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</thead>
<tbody>
<tr>
<td>Flow meter</td>
<td>241.787</td>
<td>5:09</td>
</tr>
<tr>
<td>Pump</td>
<td>17.29 - 0.35</td>
<td>2:25</td>
</tr>
<tr>
<td>#15</td>
<td>2:71 - 0.35</td>
<td>5:12</td>
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<tr>
<td>#7</td>
<td>10.78 - 0.13</td>
<td>5:14</td>
</tr>
<tr>
<td>#6</td>
<td>9.42 - 1.13</td>
<td>5:15</td>
</tr>
<tr>
<td>#5</td>
<td>9.15</td>
<td>5:16</td>
</tr>
<tr>
<td>#4</td>
<td>9.77</td>
<td>5:17</td>
</tr>
<tr>
<td>#3</td>
<td>2.5</td>
<td>No good</td>
</tr>
<tr>
<td>#13</td>
<td>4.82</td>
<td>5:20</td>
</tr>
<tr>
<td>#14</td>
<td>4.76</td>
<td>5:22</td>
</tr>
<tr>
<td>#1</td>
<td>5.70 - 0.23</td>
<td>5:25</td>
</tr>
<tr>
<td>#2</td>
<td>6.34 - 0.23</td>
<td>5:28</td>
</tr>
<tr>
<td>#3</td>
<td>6.52 - 0.23</td>
<td>5:30</td>
</tr>
</tbody>
</table>
Meas. from # pump (cant see casing)

1

2 133 PW 2.6 5 4 3 14

3


NOTE:
Tests showed
#6 & #4 to be unreliable. Water
was poured into these
#4 did not drain out
Also checked 7 + 5 this way

4

128.2

127.4

N
<table>
<thead>
<tr>
<th>Well</th>
<th>Depth to Water</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main well</td>
<td>17.71 - 0.5</td>
<td>9:22</td>
</tr>
<tr>
<td>15</td>
<td>10.90 - 15</td>
<td>9:24</td>
</tr>
<tr>
<td>7</td>
<td>9.91</td>
<td>9:16</td>
</tr>
<tr>
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<td>8.05</td>
<td>9:28</td>
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<tr>
<td>4</td>
<td>N.G</td>
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<tr>
<td>13</td>
<td>4.93</td>
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<tr>
<td>1</td>
<td>7.06</td>
<td>9:41</td>
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<tr>
<td>2</td>
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<td></td>
</tr>
<tr>
<td>3</td>
<td>6.68</td>
<td>9:45</td>
</tr>
</tbody>
</table>

Flow meter: 2633.80 x 100 @ 9:23
Elec: 156 @ 9:47
Shot off pump 9:47
Well 18" Drilled by cable tools. 24" blank with gravel fed outside. 24" withdrawn.

Drilled to 57'.

0 - 3  soil
3 - 25  sand gravel - clay lenses
25 - 45  brown sandy clay
45 - 57  blue clay
55 - 57  Open hole filled with gravel

77' in 39' deep and sandy gravel entire distance

# 4 is 22' deep
# 5 is 19' deep

Pump bottom at bowls at 25.5 plus strainer

Present well depth Oct 29.
Kirschen
Toss off 45,000 years
in 1949 – corn maize
3 wells (60ac?)
3 tenants. Furnish
all fuel (predile). is’ed
This year had
40? 60% of beans in
addition all damaged
by hail. Does not
think economical to write
wheat. Thinks Barstons
more expensive than Diesl.
The fuel is abt 1/2 cheaper
\[
\begin{align*}
26 & \div 10 = 2.600 \\
\underline{\phantom{000}} & \phantom{000} \\
3.46 & \div 1.10 = 3.145 \\
136 & \quad 136 \\
\underline{126} & \underline{126} \\
& \underline{1000} \\
\end{align*}
\]

\[
\begin{align*}
26 & \div 10 = 2.600 \\
2593 & \div 1018 = 2.560 \\
1696 & \div 1018 = 1.66 + \\
\underline{1018} & \underline{1018} \\
6760 & \underline{6760} \\
618 & \underline{618} \\
\end{align*}
\]

17

10.20
1 Ft hr = 2.46 mm

10 Kwhr = 00 on stop until

<table>
<thead>
<tr>
<th>Hr</th>
<th>Kwhr</th>
<th>17 min. on</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
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</tr>
<tr>
<td>42</td>
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<td>132</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12.30

2.6

2.52

2.42

3.8

3.6

4.26

15.76

7.17

2.56

11.46

C. F. Schmidt

1200 rpm

with 2.40

1.3

1.1.17

.35

16.82

5.36

11.46

El = 15 954.6

El pump 96.36

s1 = 196

2.3

2.2

91.00

10.76

4.4

6.38