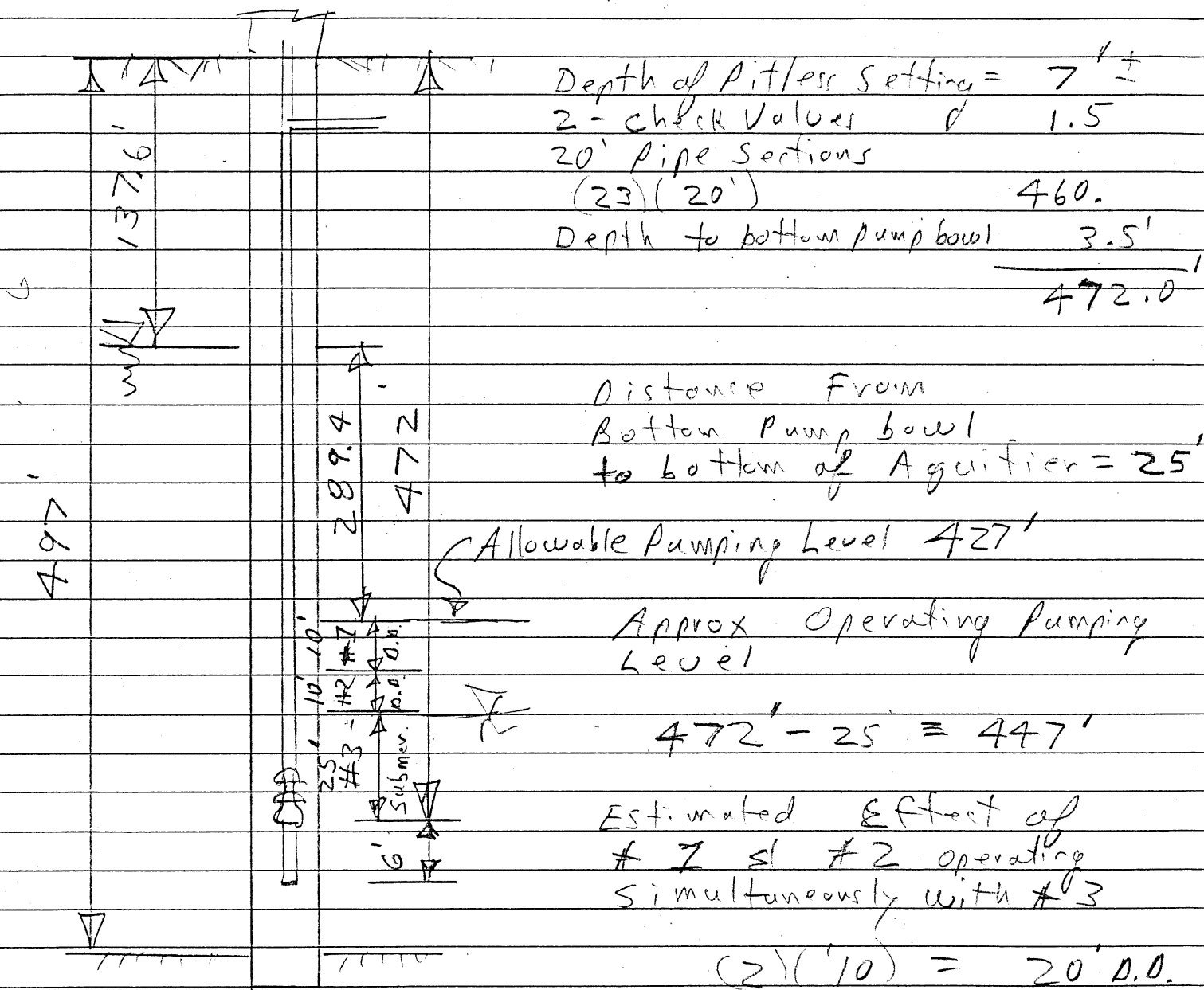


SHIVE-HATTERY & ASSOCIATES

Engineers

PROJECT: North Liberty JOB. NO. \_\_\_\_\_ Page 2 of \_\_\_\_\_ Pages  
 SUBJECT: Well # 3 DATE: 5-21-84 COMP. BY ARR OK'd BY \_\_\_\_\_

Approx Well Pump Setting



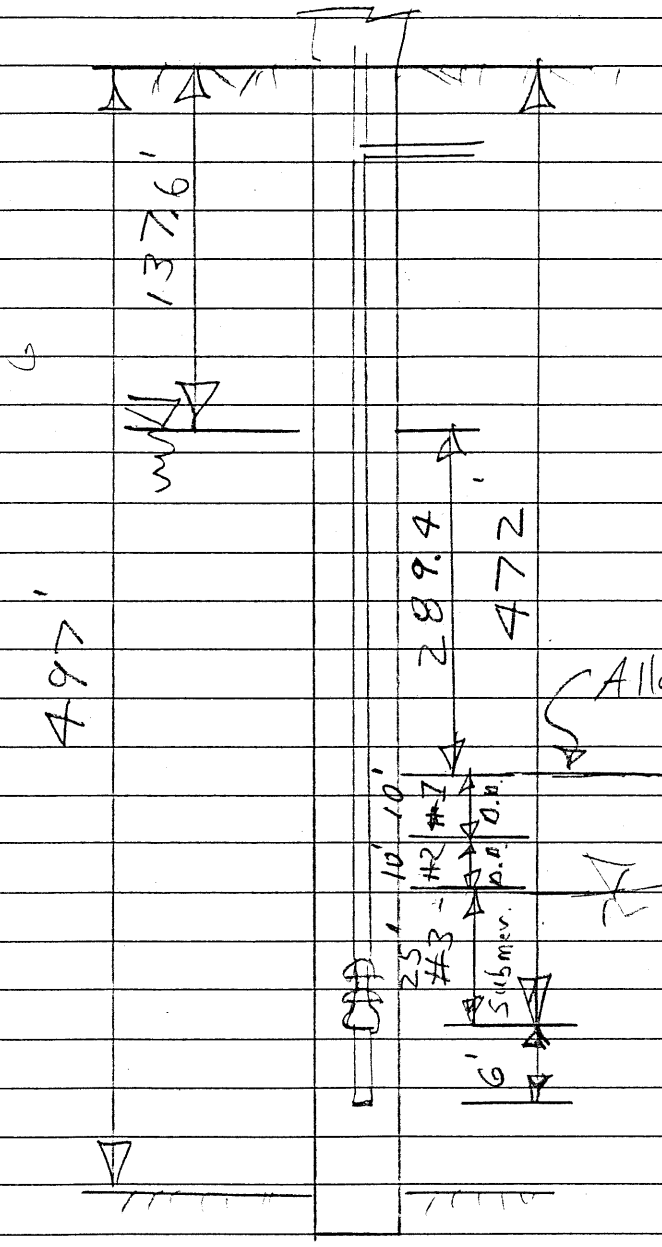
Net Drawdown Available For Pumping of Well # 3 =  $289.4 \text{ ft}$

Pump @ 100 gpm  
 $\left(\frac{100}{125}\right)(281.6) = 225 \text{ ft}$

SHIVE-HATTERY & ASSOCIATES  
Engineers

PROJECT: North Liberty JOB. NO. \_\_\_\_\_ Page 2 of \_\_\_\_\_ Pages  
SUBJECT: Well # 3 DATE: 5-21-84 COMP. BY ARR OK'd BY \_\_\_\_\_

Approx Well Pump Setting



Depth of Pitless Setting =  $7' \pm$   
2 - check Valves  $\phi$  1.5  
20' Pipe Sections  
(23)(20') 460.  
Depth to bottom pump bowl 3.5'  
472.0'

Distance From  
Bottom Pump bowl  
to bottom of Aquifer = 25'

Allowable Pumping Level 427'  
Approx Operating Pumping  
Level  
 $472' - 25' = 447'$

Estimated Effect of  
#1 & #2 operating  
simultaneously with #3  
 $(2)(10) = 20' \text{ D.O.}$

Net Drawdown Available For Pumping  
of Well # 3 = 289.4 ft

Pump @ 100 gpm  
 $\left(\frac{100}{125}\right)(281.6) = 225 \text{ ft}$

123 N. CAPITOL ST.  
IOWA CITY, IOWA 52240  
PHONE (319) 338-1173

Job North Liberty City  
Location \_\_\_\_\_  
Dia. of Well 8 5/8" O.D. casing 0-220'  
Depth of Well 502' effective depth 497'  
Length of Airline 440'  
Non-Pumping Level 137.6'  
Orifice Size 6" pipe 3" orifice

Well no. 3 Date Tested 5/17-18/84  
Tested By Latta & Sons  
Driver \_\_\_\_\_  
Column and Shaft \_\_\_\_\_  
Bowls \_\_\_\_\_  
Manufacturer \_\_\_\_\_  
Serial No. \_\_\_\_\_

Pump Used:  
Pump set at 443.5'

Date and Time	Time Accumulative	Piezometer Reading (in.)	G.P.M.	Air Gauge Reading (ft.)	P.W.L. (ft.)	Drawdown (ft.)	Remarks
<u>5/17/84</u> <u>9:00 AM</u>							<u>137.8' SWL</u>
<u>10.07</u>							<u>137.6</u>
<u>10.20 AM</u>		<u>15</u>	<u>130</u>	<u>83</u>			<u>Pump on</u>
<u>22</u>	<u>2</u>			<u>83</u>	<u>error</u>		
<u>23</u>	<u>3</u>			<u>92</u>	<u>227.5</u>	<u>90</u>	
<u>24</u>	<u>4</u>			<u>88</u>	<u>236.7</u>	<u>99</u>	
<u>25</u>	<u>5</u>			<u>87</u>	<u>239.0</u>	<u>101</u>	
<u>26</u>	<u>6</u>			<u>86</u>	<u>241.3</u>	<u>104</u>	
<u>27</u>	<u>7</u>			<u>84</u>	<u>245.9</u>	<u>108</u>	
<u>28</u>	<u>8</u>			<u>83</u>	<u>248.3</u>	<u>111</u>	
<u>29</u>	<u>9</u>			<u>82.5</u>	<u>249.4</u>	<u>112</u>	
<u>10:30</u>	<u>10</u>			<u>81.5</u>	<u>251.7</u>	<u>114</u>	
<u>35</u>	<u>15</u>			<u>70</u>	<u>278.3</u>	<u>141</u>	
<u>10:40</u>	<u>20</u>		<u>14.5</u>	<u>62</u>	<u>296.8</u>	<u>159</u>	
<u>45</u>	<u>25</u>			<u>54</u>	<u>315.3</u>	<u>178</u>	
<u>50</u>	<u>30</u>			<u>52</u>	<u>319.9</u>	<u>182</u>	
<u>11:02</u>	<u>42</u>			<u>46</u>		<u>?</u>	
<u>04</u>	<u>44</u>			<u>49</u>	<u>326.8</u>	<u>189</u>	
<u>10</u>	<u>50</u>			<u>46</u>	<u>333.7</u>	<u>196</u>	
<u>20</u>	<u>60</u>		<u>15</u>	<u>43</u>	<u>340.7</u>	<u>203</u>	

IOWA GEOLOGICAL SURVEY

123 North Capitol St.  
Iowa City, Iowa 52242  
Phone (319) 338-1173

Job North Liberty City

Well no. 3

Date Tested 5/17/84

Location \_\_\_\_\_

Tested by Latta & Sons, Shive-Hattery & IGS (P.J. Horick)

Date and Time	Time Accumulative	Piezometer Reading (in.)	G.P.M.	Air Gauge Reading (ft.)	P.W.L. (ft.)	Drawdown (ft.)	Remarks
5/17/84 11:35	75	14.75		36	356.8	219	error
11:50	90			48 ?	329.1	191.5	? error
11:58	98			36			error
12:15p	115			41	345.29	208	OK
12:20	120			41	"		
12:50	150			35.5	358.	220	
1:15	175	14.50	129	30	370.7	233	
1:20	180			29	373	235	
1:50	210			25	382.3	245	
2:15	235	14.75		21	391.5	254	
2:22	242			19	396	258.5	
2:35	255	14.75	130	17	401	263	
2:50	270			14	408	270	pH 7.0(?) (Litmus)
3:00	280			13	410	272	
3:20	310			11	415	277	
3:50	340	14	128	9	419	281	
4:20	370			9	419	281	
4:50	400	13.75	126	6.5	425	287	pH 6.6 (water plant)
5:20	430	13.50	125	8	422	284	
5:50	460			8	422	284	
6:25	495	13.25		8	422		

Well casing cemented  
-7-220'

Pitless adapter 0-7'

IOWA GEOLOGICAL SURVEY

123 North Capitol St.  
Iowa City, Iowa 52242  
Phone (319) 338-1173

Job North Liberty City

Well no. 3

Date Tested 5/17/84

Location \_\_\_\_\_

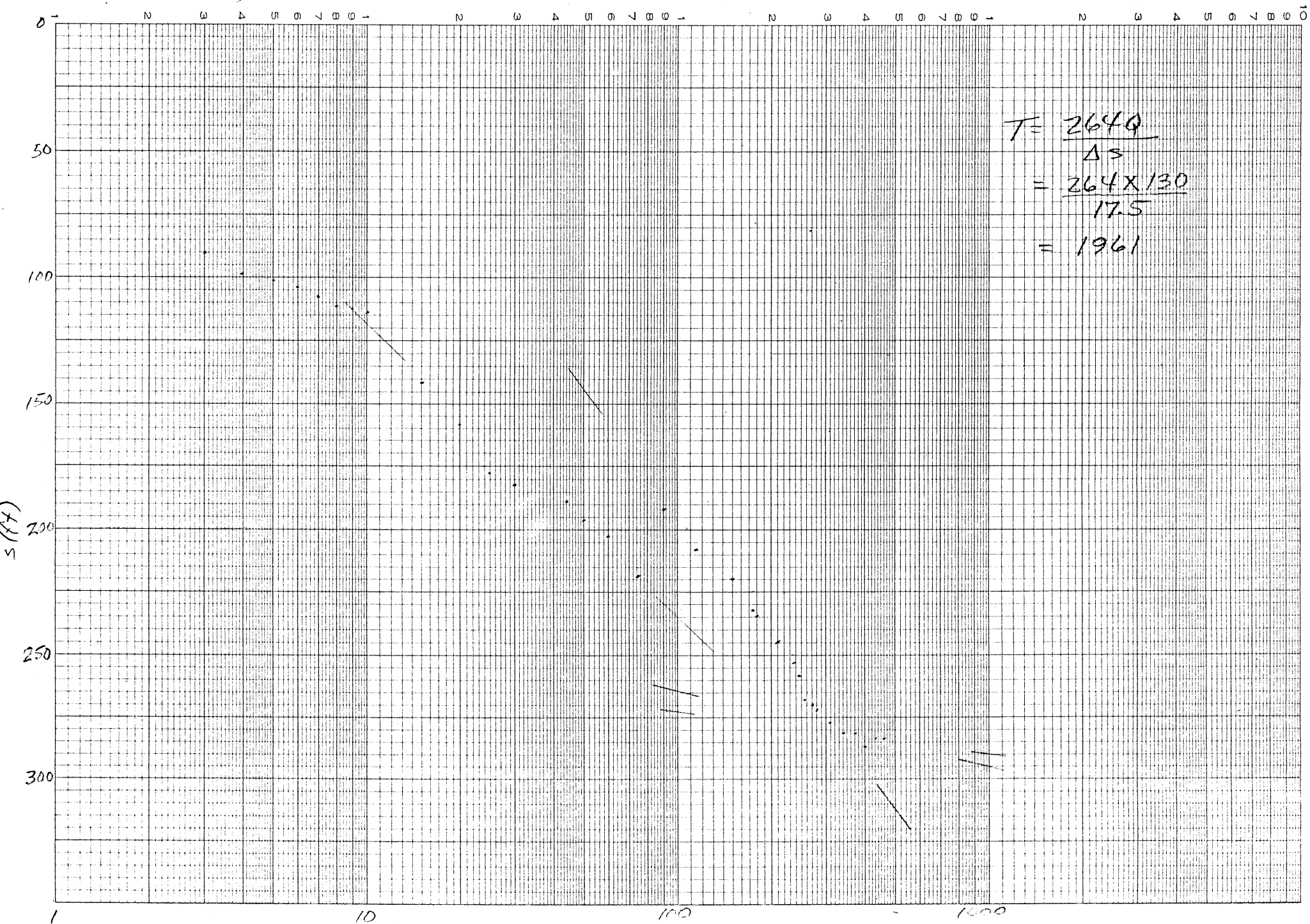
(Recovery)

Tested by \_\_\_\_\_

Date and Time	Time Accumulative	Piezometer Reading(in.)	G.P.M.	Air Gauge Reading (ft.)	P.W.L. (ft.)	Drawdown (ft.)	Remarks
		13.5	125				
5/17 6:30p	0			25	422		Pump off
	.30s			25	382.3		
	1.30			64	292.2		
	2			74	269.1		
	3			78	259.8		
	4			82	250.6		
	5			87	239.0		
	7			92	227.5		
6:40	10			96.5	217.1		
	15			107	192.8		
	20			110	185.9		
	25			112	181.3		
7:00p	30			114	176.7		
	35			114	176.7		
	40			115	174.4		
	45			115.5	173.2		
	50			116	172.		
	55			116			
7:30	60			117	169.7		
7:45	75			117			
8:00	90			117			
8:05	95				151.8		Electric line measurement
8:08	98			119			



North Liberty #3 Test Production well 5/17/84



$$\begin{aligned} T &= \frac{264Q}{\Delta s} \\ &= \frac{264 \times 130}{17.5} \\ &= 1961 \end{aligned}$$

North Liberty #3 Test 5/17/84 Recovery measurements

