

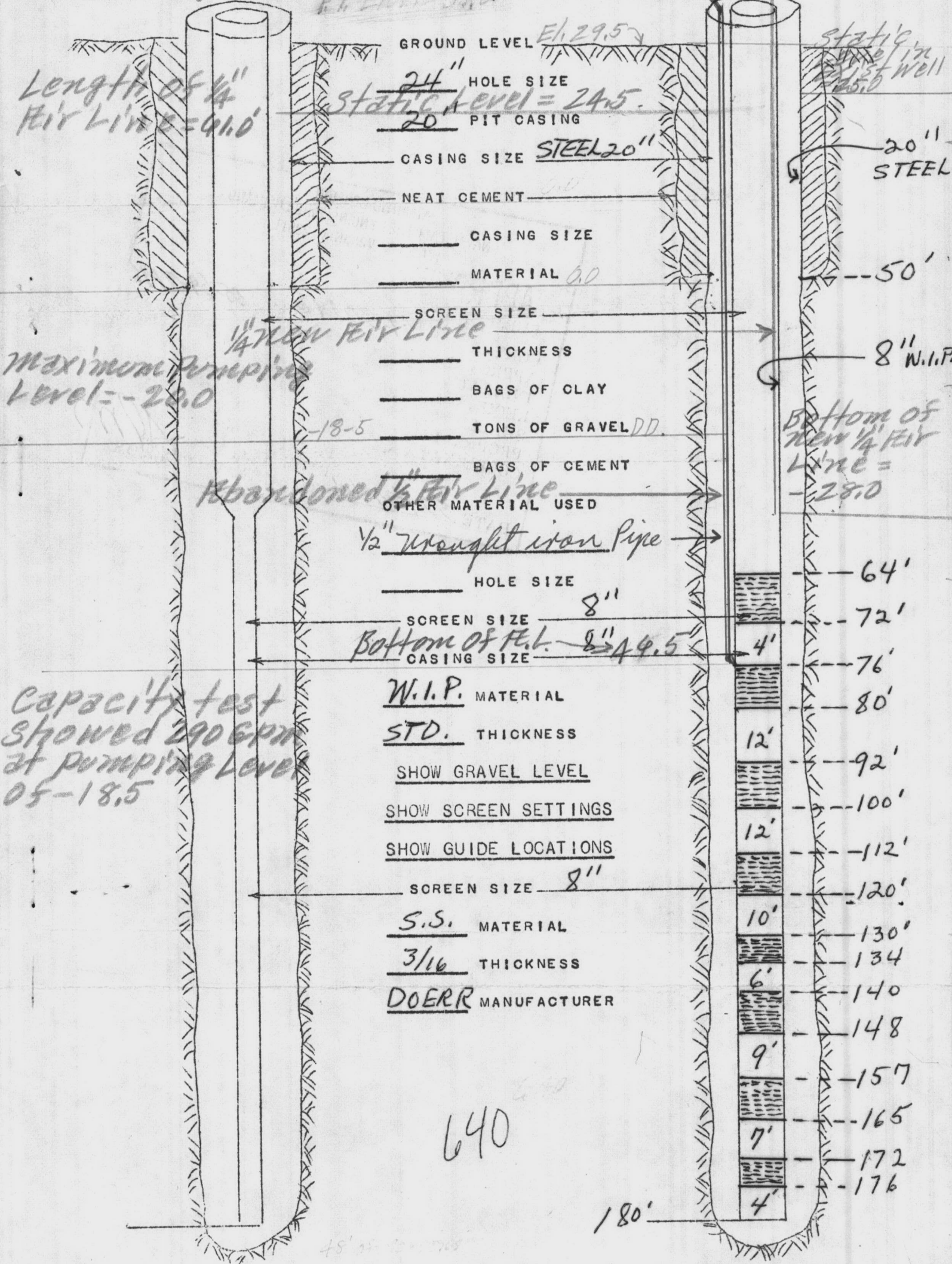
WELL DRAWING & MATERIALS LIST

HARTSFIELD WATER COMPANY, INC.  
 P. O. DRAWER 3109 - PH. 523-2154  
 KINSTON, NORTH CAROLINA 28501

CUSTOMER: U.S. Marine Corp WELL No. 640

ADDRESS: Camp Lejeune, N.C.

WELL LOCATION: Sneads Ferry Road F.F. = 31.0  
Gauge Connection = 31.0



*U.S. Marine Corp  
Camp Lejeune, N.C.  
Beaches Army Land*

*240*

ATLANTIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
MORFOLK, VIRGINIA 23511

**APPROVED:**

SUBJECT TO THE REQUIREMENTS OF  
CONTRACT NO. *69-6-0792* STEEL  
APPROVAL OF THE CONTRACTOR'S  
INDICATED MATERIALS AND OF EQUIPMENT  
REQUIREMENTS FOR THE INSTALLATION  
SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR  
PROPER PLYING OF CONTRACT DOCUMENTS, INCLUDING  
COORDINATION OF TRADES, IS REQUIRED.

P. E. SEUFER  
RADM, CEC, USN *PEM*

DATE *30 SEPT. 69* COMLANAVFACENGCOM

*STEEL*  
*8" W.P.*

176	4
177	4
178	4
179	4
180	4
181	4
182	4
183	4
184	4
185	4
186	4
187	4
188	4
189	4
190	4
191	4
192	4
193	4
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227	4
228	4
229	4
230	4
231	4
232	4
233	4
234	4
235	4
236	4
237	4
238	4
239	4
240	4

*8"*  
*8"*  
*W.P.*  
*STEEL*  
*8"*  
*2.2*  
*3/16*  
*DOER*

*180*







20

2



DATE 7-25-00

PWSID 04-67-041

WELL # HP 640

WELL NAME HADNOT POINT HP20

BLDG. HP 640

CODE G.

AVAILABILITY P.

LOCATION SNEADS FERRY ROAD

LATITUDE 34.62743

LONGITUDE 77.29583

WELL DIAMETER 8"

WELL DEPTH 179'

SCREEN INTERVAL \_\_\_\_\_

YIELD 157

STATIC LEVEL 13'

PUMPING LEVEL 30'

PUMP TYPE VERTICAL TURBINE

MOTOR HP 15

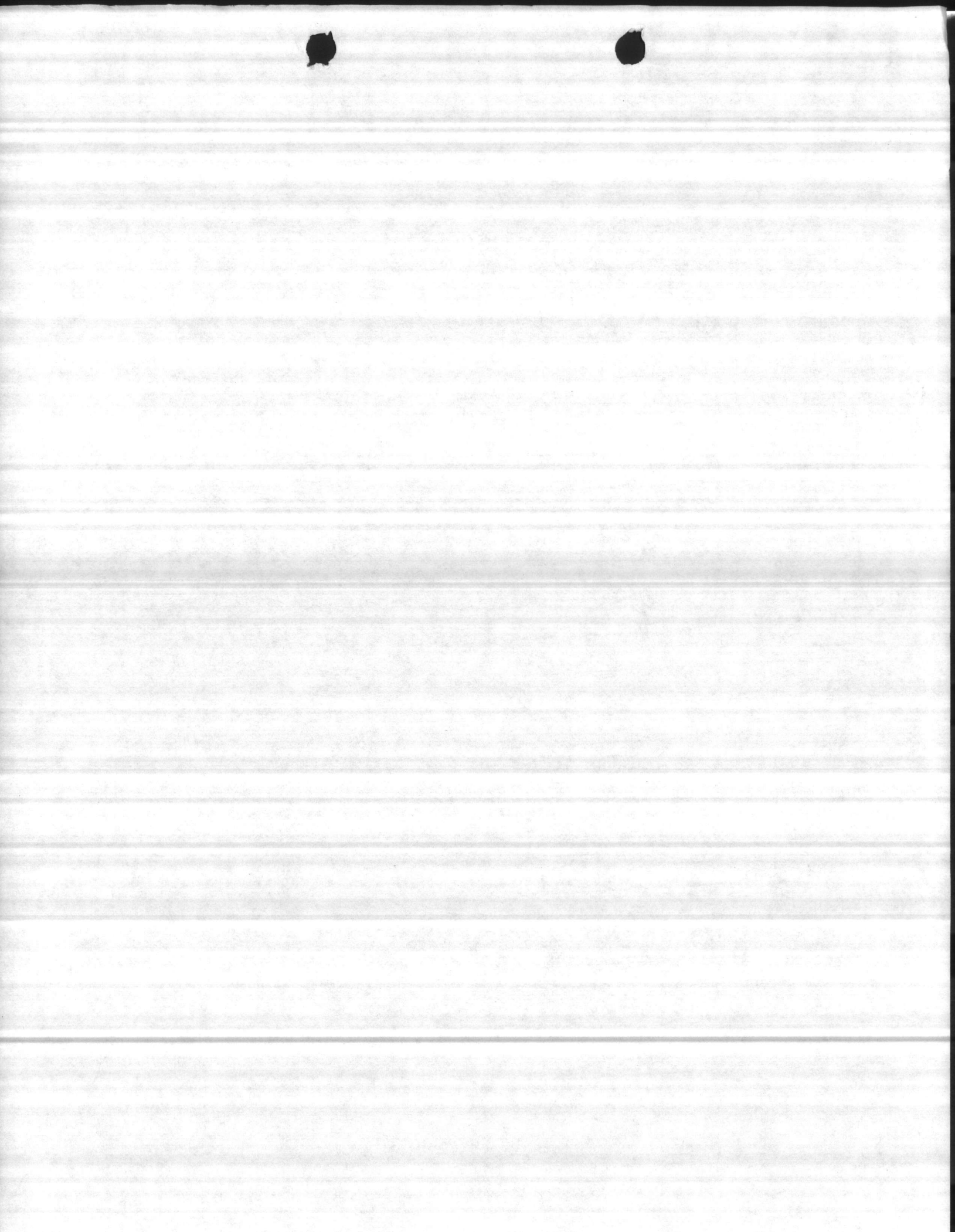
INTAKE DEPTH 65

DESIGN CAPACITY 290

ACTUAL GPM 290

SIZE OF CONCRETE SLAB 12 X 12

HEIGHT OF CASING 12"





North Carolina Department of Environment, Health, and Natural Resources  
 Division of Environmental Health, Public Water Supply Section

# SOURCE INFORMATION GROUND WATER

Date Form Completed

M M D D Y Y  
 0 1 2 5 9 5

PWSID  
 0467041

Owner Assigned Source Code Well Name (If purchase, name of system)

640 HADNOT POINT 040

Code  
 G=Ground  
 W=Purchase/G  
 Y=G w/direct influence  
 Z=W w/direct influence  
 G

If Purchase, seller ID# Source Begin Date Source exempt— Direct Influence Date  
 M M Y Y SWTR? Y N M M D D Y Y

Availability  
 P=Permanent  
 E=Emergency  
 S=Seasonal  
 I=Interim  
 O=Other  
 P

Location of well within the system (If purchase, location of master meter)  
 SNEADS FERRY ROAD

Latitude (N) Longitude (W) How Determined GPS Data No. of Sats. Locked on  
 Deg. Min. Sec. Deg. Min. Sec. G=GPS M=Map S=Surveyed Q# or DOP #

(If purchase, use seller's primary source lat/long)  
 Vulnerable (VOCs) Y N Assessment Date M M D D Y Y

## ENTRY POINT INFORMATION

Use Code Availability  
 C=Ground/Permanent D=Ground/non-permanent P=Year-round E=Emergency S=Seasonal I=Interim O=Other  
 C P

Owner Assigned Entry Point Code Entry Point Name  
 100 HR640MCA HADNOT PT WTP

Location:  
 Well Site: Owned or controlled? Y (Y,N) Control Area (100' radius)? N (Y,N) If no, explain:  
 Sources of pollution/distance: 75' to Road R/w ditch

Surface water within 200'? N (Y,N) If yes, actual distance      feet If yes, bact. samples collected?      (Y,N)  
 Adequate slope? Y (Y,N) Flooding? N (Y,N) Maintenance: OK

Well House: Free of stored materials? Y (Y,N) Properly drained? Y (Y,N) Locked? Y (Y,N)  
 Condition of house: OK Type of freeze protection: None

Well: Diameter: 8" Type: GRAVEL PACK Yield (gpm): 390 Properly sealed?      (Y,N)  
 Properly vented? Y (Y,N) Casing depth 64 ft. (If unknown, put 'UNK') Well depth: 179' Meter available? N (Y,N)

Concrete slab adequate? Y (Y,N) If no, explain: Well not in center of slab Size: 12x12  
 Size of blow-off: 4" (V) Sample tap: Before treatment? Y (Y,N) After treatment?      (Y,N)

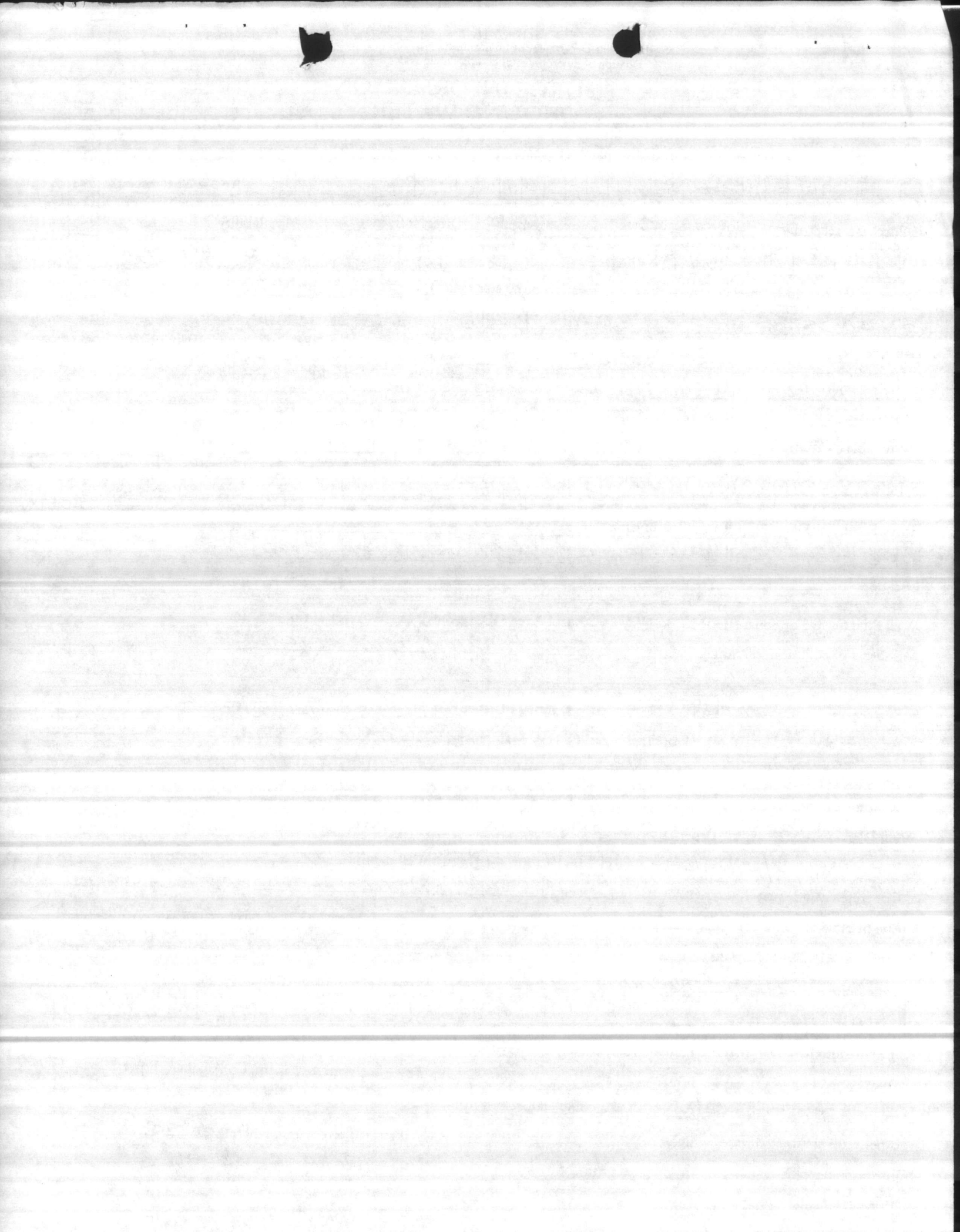
Pumps: Capacity: GPM: 210 HP: 15 Pump intake depth: 65 Auxiliary Power? Y (Y,N)  
 Type pump: VERTICAL TURBINE Height above floor (pump/casing): 12"

Storage at well site: Elev:      Hydro:      Ground:       
 If hydroautomatic, air volume control?      (Y,N) Safety valves?      (Y,N) Coded?      (Y,N)

High service pumps: 1.      gpm      hp 2.      gpm      hp 3.      gpm      hp Auxiliary Power?      (Y,N)  
 Is the water treated at this well? N (Y,N) If yes, complete back of form.

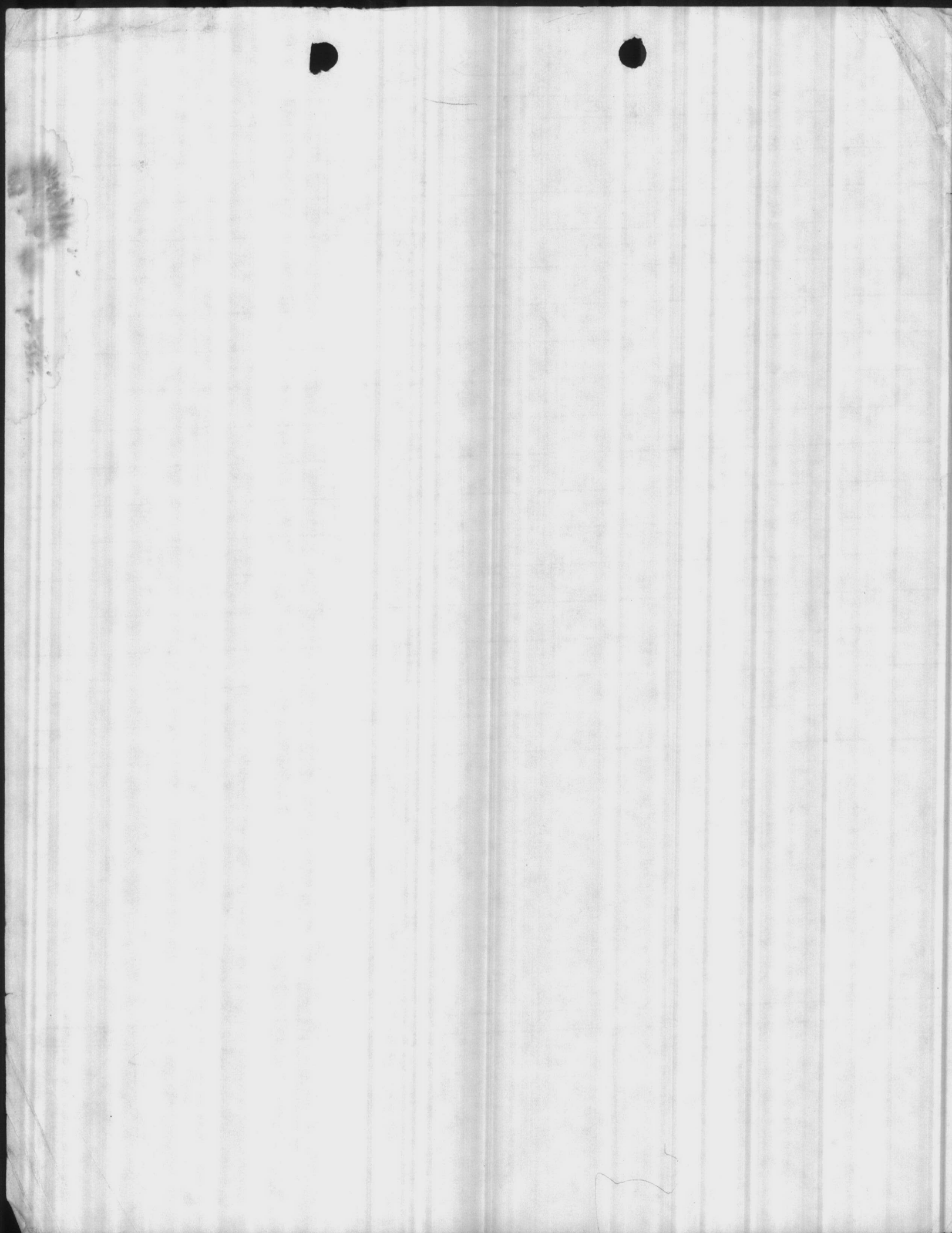
If other wells are treated here, which ones?      If treated elsewhere, where? HP-20 PLANT  
 If purchase, retreat?      (Y,N) If yes, complete back of form.

- ① Severe Motor vibration - Bearings
- ② Gasoline odor from Aux drive unit
- ③ Move sample tap -









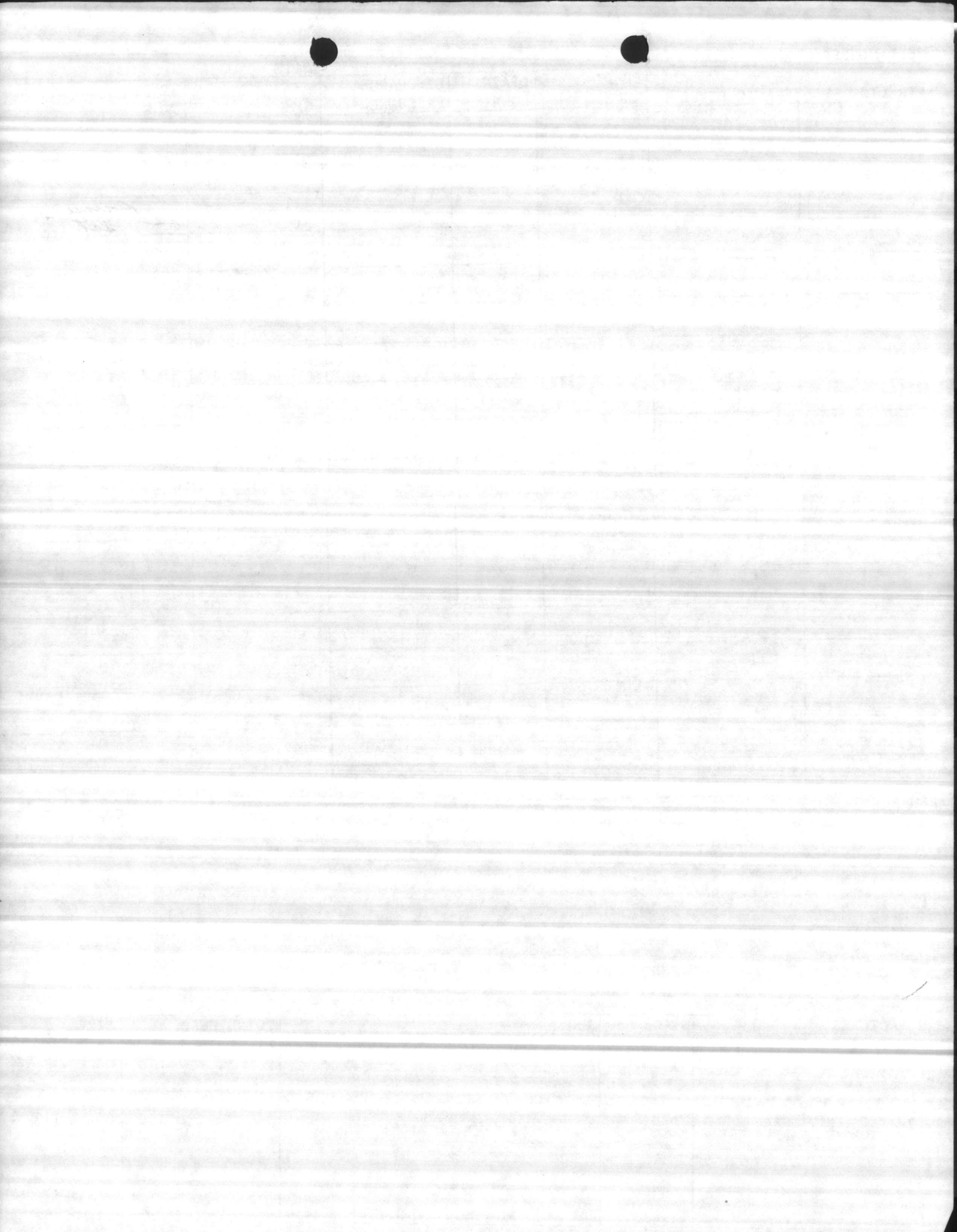




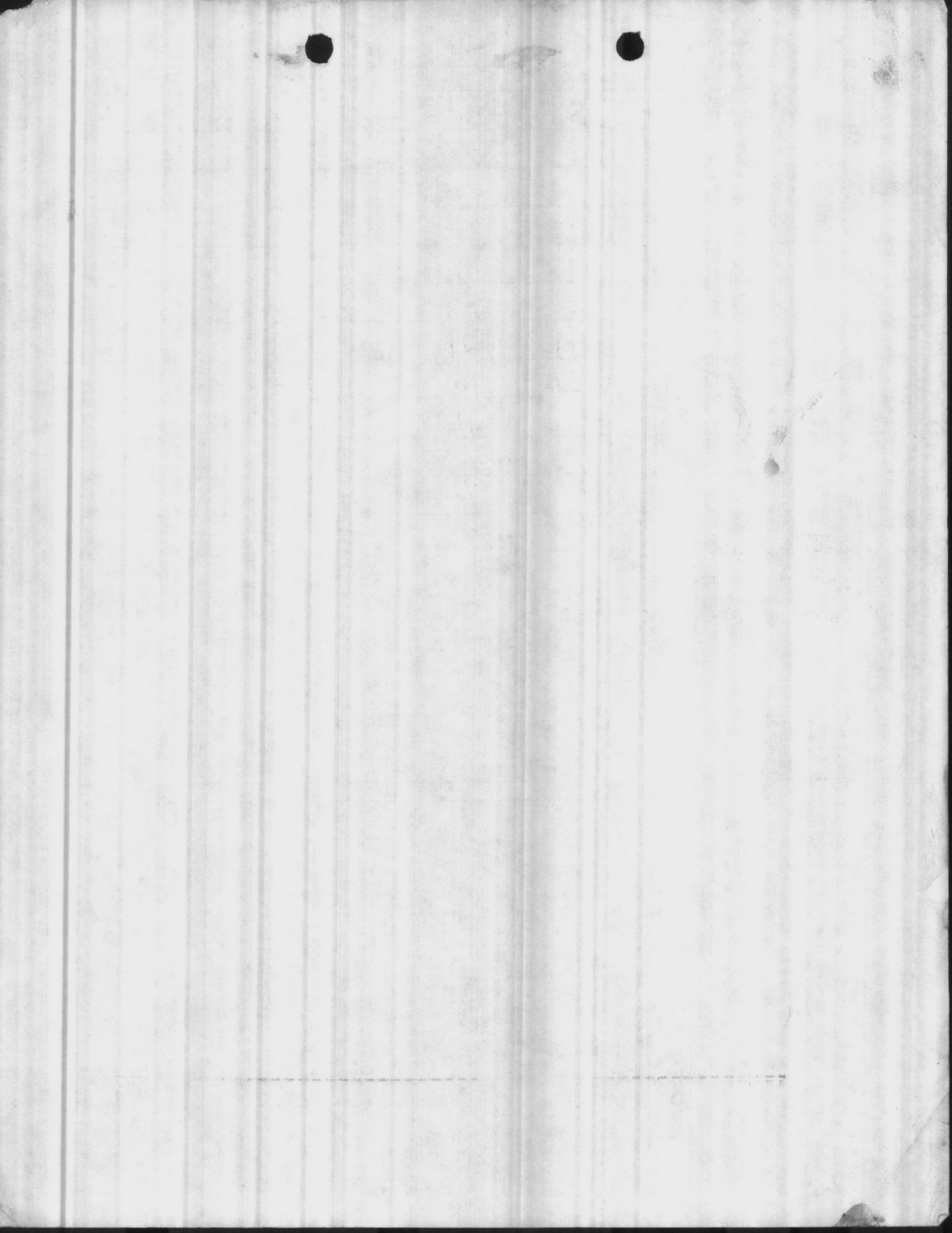










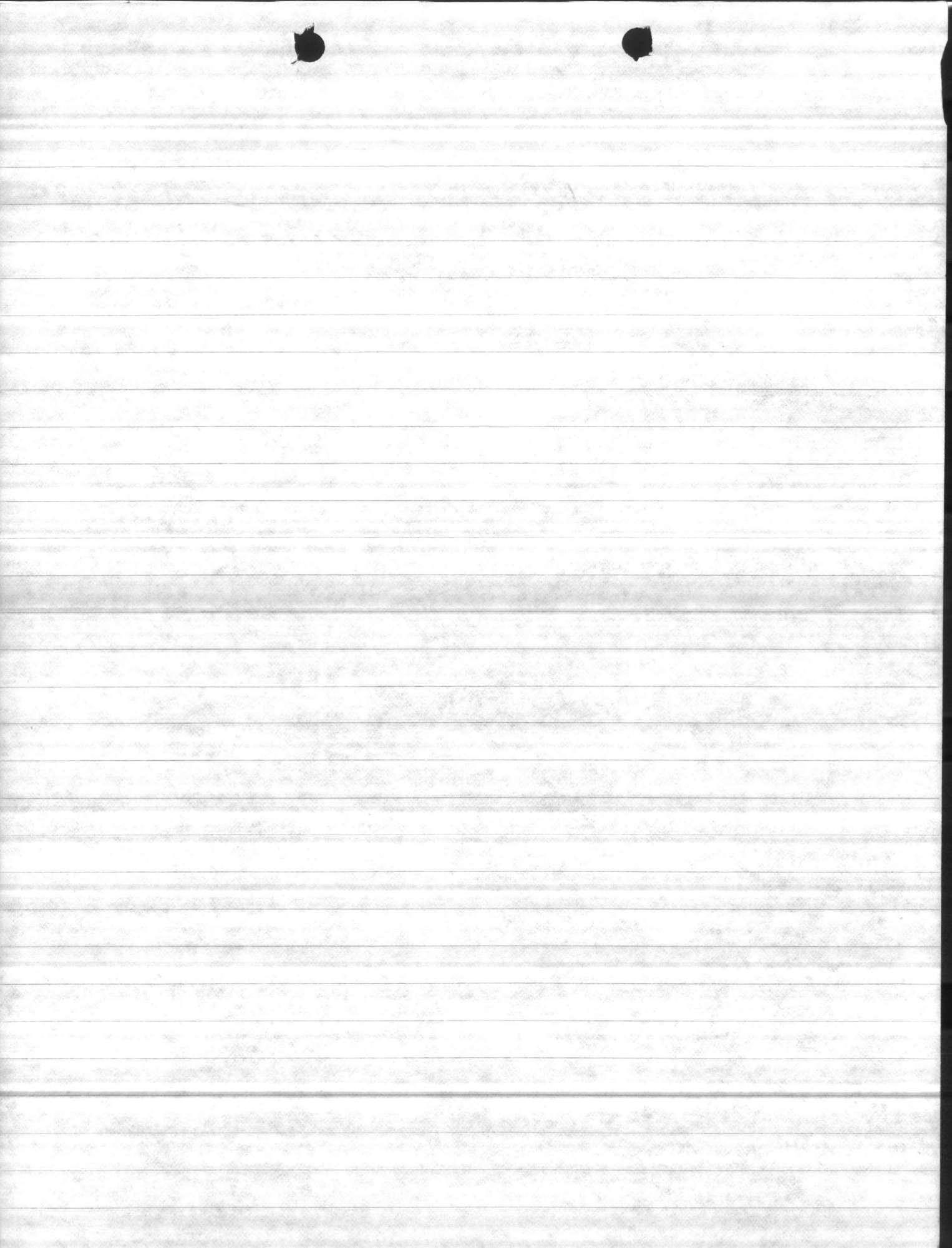




640

8-26-85

A/L	S/L	P/L	O/O	A <sub>ST</sub>	GPM	START Time
61	14	22	18	25	119	<del>1252</del> 1301
		23	9	21	125	1311
		26	12	18	140	1322
		31	17	15	154	

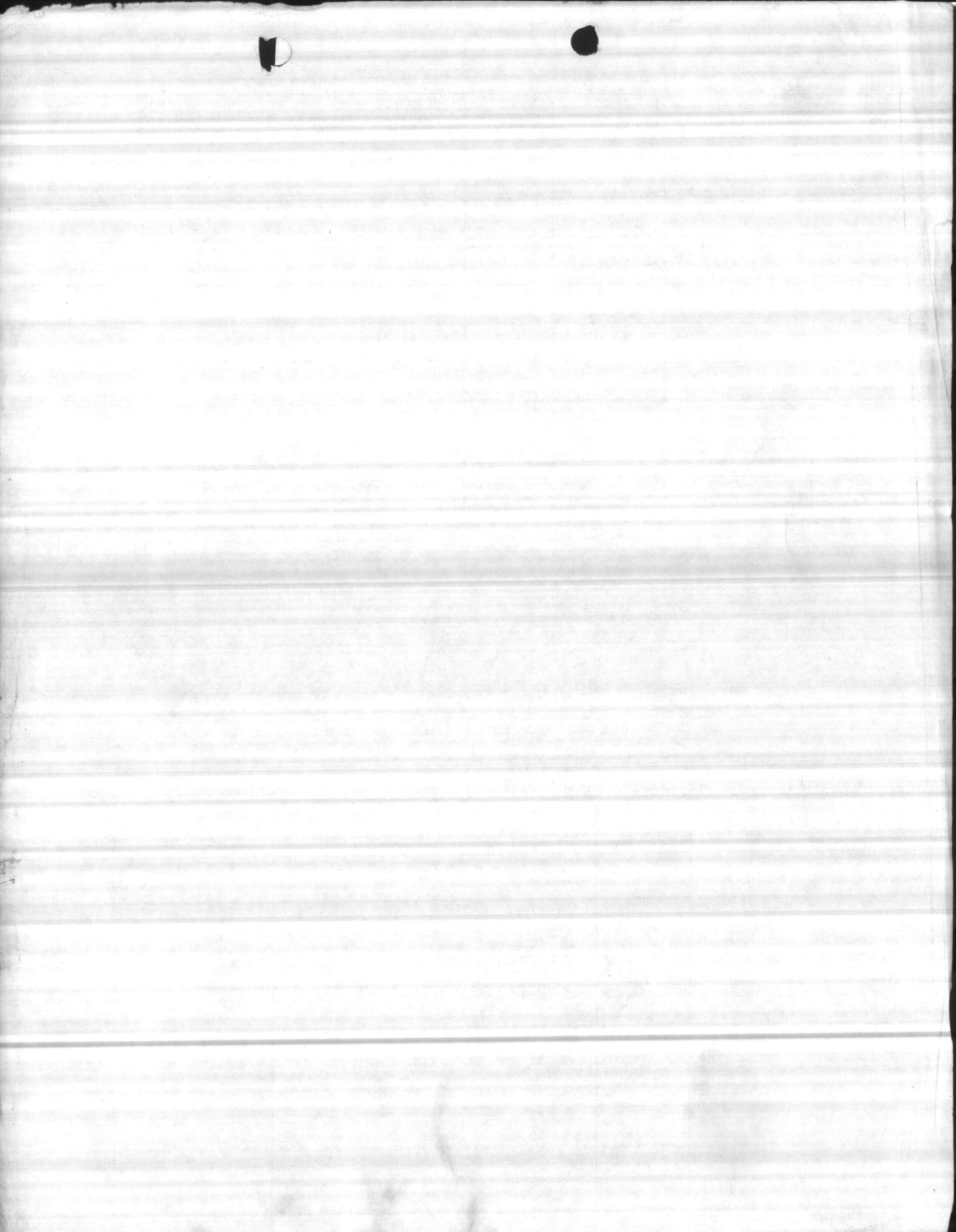


WELL NUMBER <i>690</i>		BY <i>THOMAS BROWN</i>			DATE <i>10-25-84</i>	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
<i>61</i>	<i>13</i>	<i>14</i>	<i>1</i>	<i>39</i>	<i>115</i>	<i>1325</i>
		<i>15</i>	<i>2</i>	<i>36</i>	<i>122</i>	<i>1335</i>
		<i>20</i>	<i>7</i>	<i>32</i>	<i>130</i>	<i>1400</i>
		<i>25</i>	<i>12</i>	<i>28</i>	<i>146</i>	<i>1412</i>
		<i>29</i>	<i>16</i>	<i>25</i>	<i>157</i>	<i>1423</i>
		<i>34</i>	<i>21</i>	<i>22</i>	<i>164</i>	<i>1435</i>
		<i>37</i>	<i>24</i>	<i>19</i>	<i>175</i>	<i>1448</i>
		<i>40</i>	<i>27</i>	<i>16</i>	<i>183</i>	<i>1503</i>

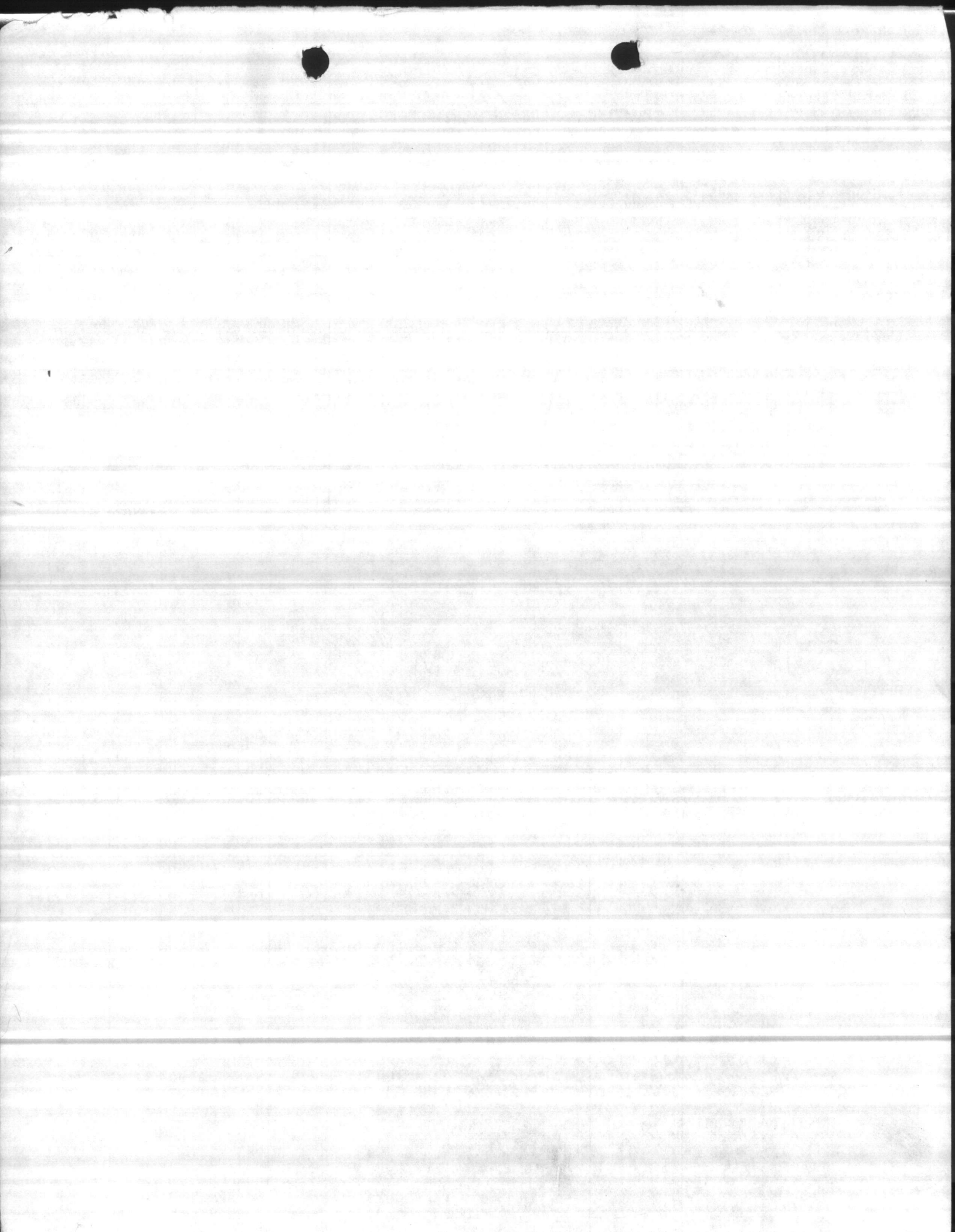
REMARKS *Left set at 16 psi 183 GPM*

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE











640

LENGTH  
OF  
ATR LINE

STATIC  
LEVEL

PUMPING  
LEVEL

DRAW  
DOWN

DISCHARGE  
PRESSURE

CAP. PER  
FOOT OF  
DRAW DOWN

TOTAL  
CAP.

7-30-82

61'

19'

44

25'

62

104

1315

49

30

59

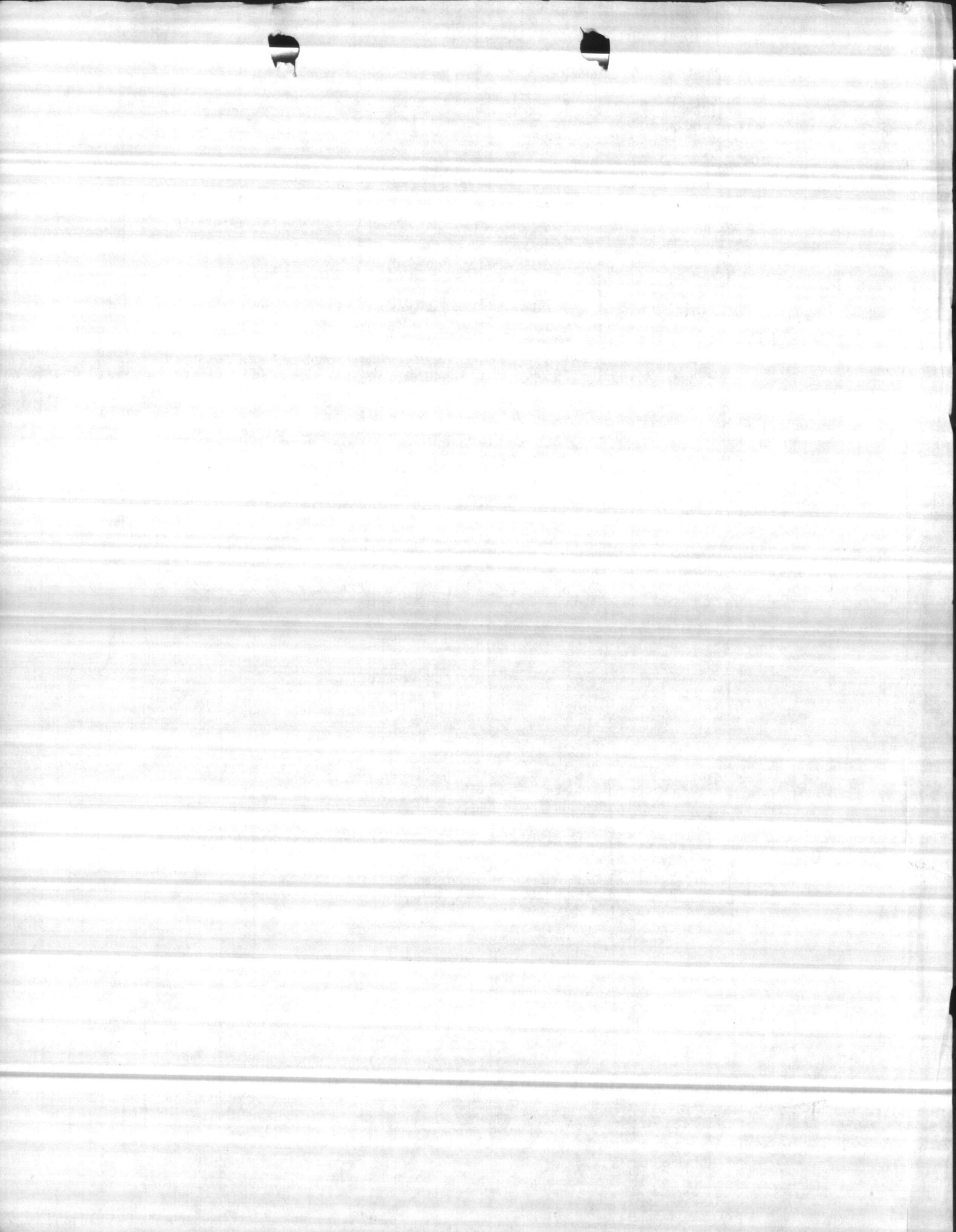
111

1330

Start time 1300

REMARKS:

used direct reading gage  
set at 111 GPM 59 PSI @ 30 P/L 49





WELL #

640

9, 10, 81  
DATE

LENGTH  
OF  
AIR LINE

STATIC  
LEVEL

PUMPING  
LEVEL

DRAW  
DOWN

DISCHARGE  
PRESSURE

CAP. PER  
FOOT OF  
DRAW DOWN

TOTAL  
CAP.

61'

19'

42'

23'

71 <sup>LB</sup>

3"

45'

26'

68 <sup>LB</sup>

4 1/2"

51'

32'

65 <sup>LB</sup>

104'

54'

35'

62 <sup>LB</sup>

108

60'

41'

59 <sup>LB</sup>

122

REMARKS:

set at

65 <sup>LB</sup>

pressure

51'

pumping level

32'

drawdown

104

GPM

61'

air line.

DEPTH OF  
WELL:

AIRLINE

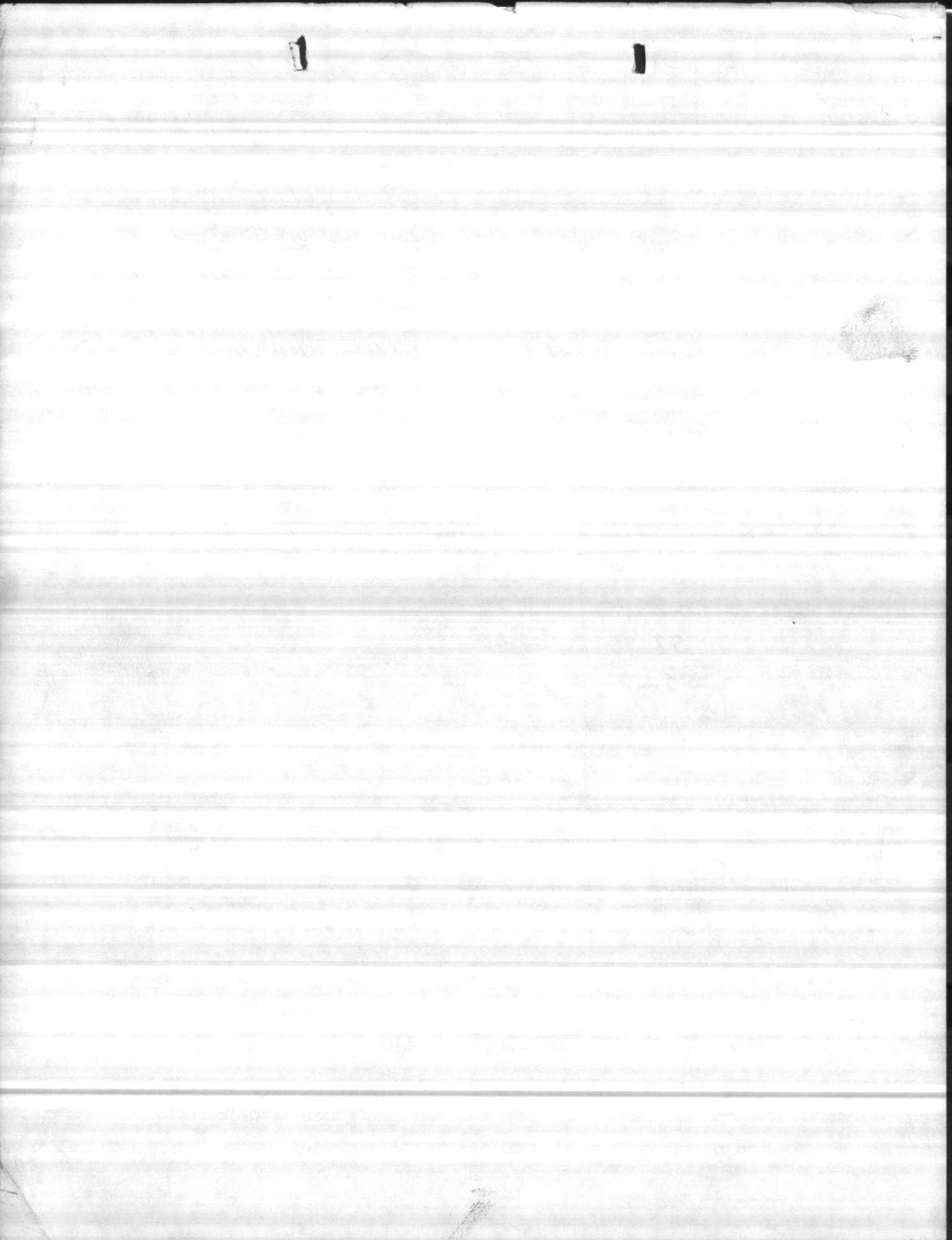
ELEVATION:

+

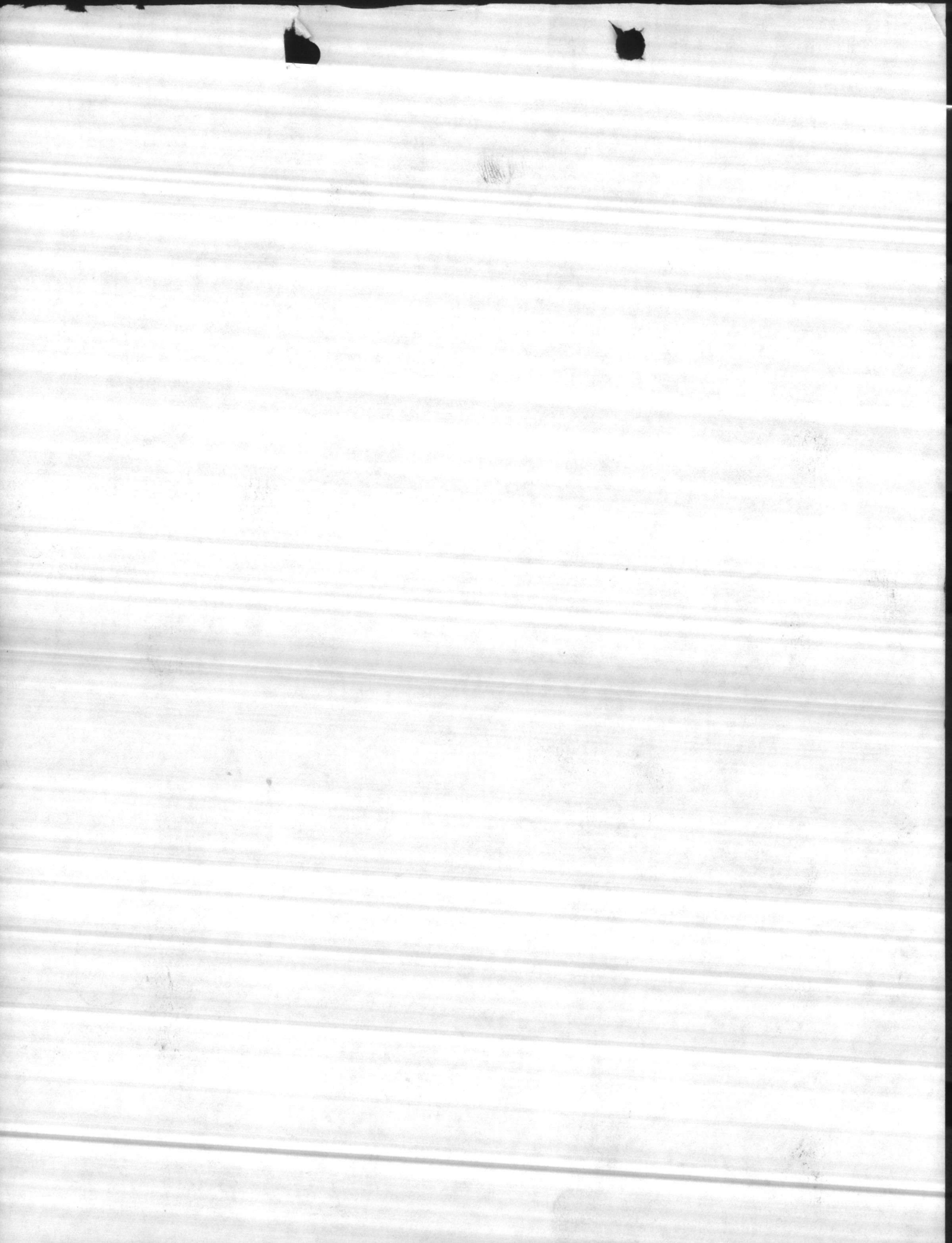
DATE

INSTALLED:







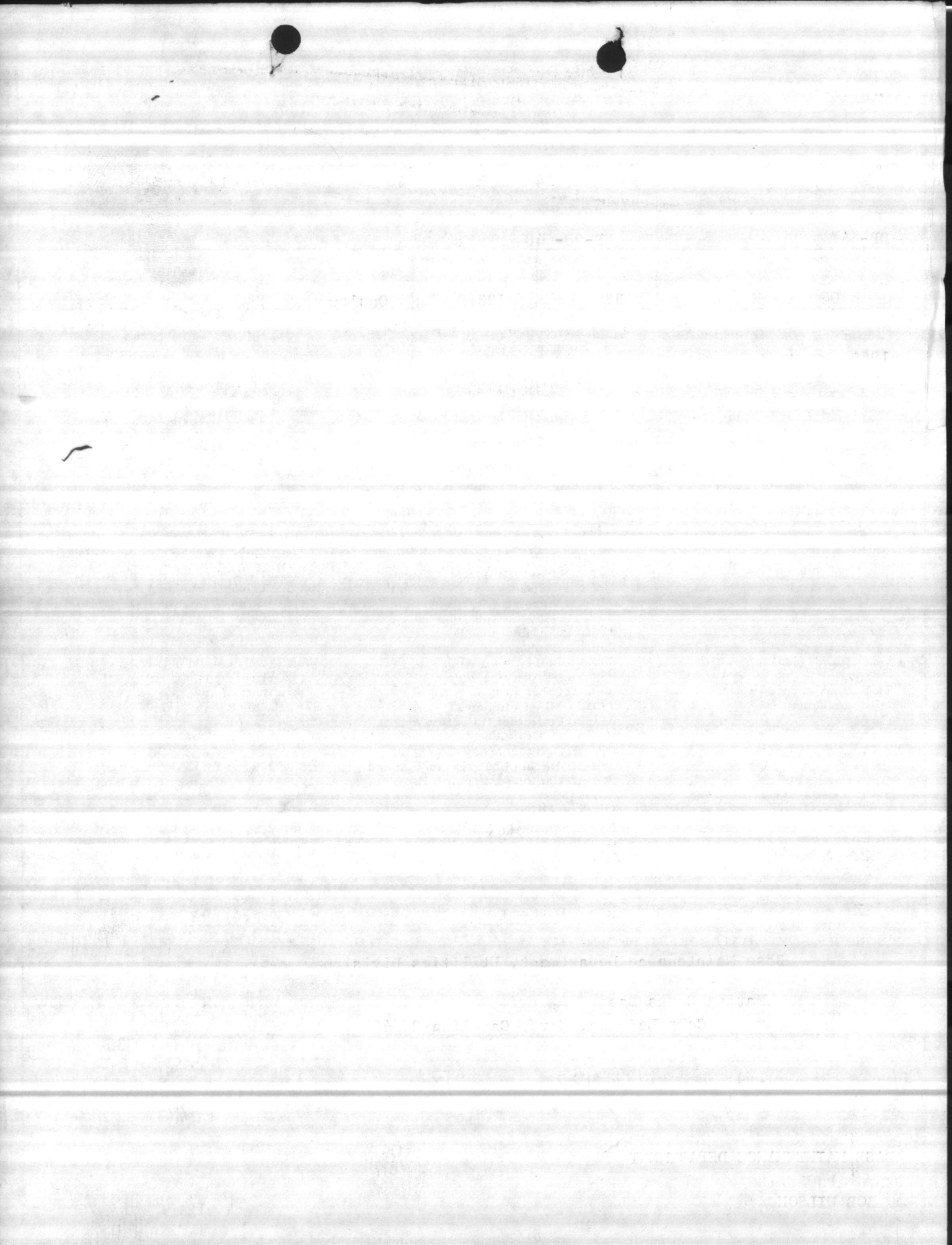




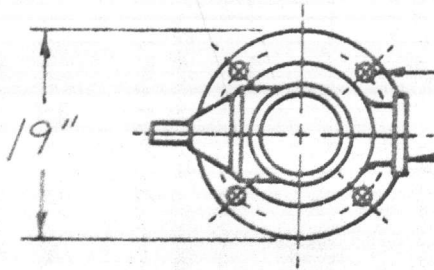
U.S. DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
OFFICE OF WATER DATA COORDINATION  
INVENTORY OF HYDROLOGIC DATA STATIONS  
QUALITY OF WATER

APPROVED.  
Budget Bureau No. 42-R1485  
Approval Expires June 30, 1976

1. AGENCY CODE <b>MC</b>	2. TYPE <b>Q</b>	3. LATITUDE ° ' " N <b>34 37 40</b>	4. LONGITUDE ° ' " W <b>77 17 45</b>			
6. AGENCY STATION NO. <b>HP-640</b>		7. STATION NAME <b>HP-20-640</b>				
8. DRAINAGE BASIN CODE No. Letter <b>06 N</b>		9. STATE CODE <b>32</b>	10. COUNTY CODE <b>133</b>			
		11. COUNTY NAME <b>Onslow</b>				
12. PERIOD OF RECORD Began Discontinued <b>1969</b>		13. Y <input type="checkbox"/> Continuous Interruption Exceeds 1 Year				
15. SITE						
<input type="checkbox"/> 101 Stream <input type="checkbox"/> 104 Reservoir <input checked="" type="checkbox"/> 107 Well <input type="checkbox"/> 102 Canal <input type="checkbox"/> 105 Estuarine zone <input type="checkbox"/> 108 Drain <input type="checkbox"/> 103 Lake <input type="checkbox"/> 106 Spring <input type="checkbox"/> 109 Other						
16. TYPES OF DATA AVAILABLE AND FREQUENCY OF MEASUREMENT (Enter appropriate number (1-8) beside each parameter to indicate frequency of measurement. For parameters telemetered, enter "T".)						
1 Continuous                      3 Daily                              5 Monthly                              7 Annual 2 Seasonal                        4 Weekly                            6 Quarterly                            8 Other Periodic						
<table style="width:100%; border:none;"> <tr> <td style="width:33%; vertical-align: top;"> <b>Physical</b>            311— Temperature            312— Specific conductance            313— Turbidity            314— Color            315— Odor            316— p<sub>i</sub> (field)            317— <b>8</b> p<sub>i</sub> (lab)            318— Eh            319— Suspended solids            320— Other         </td> <td style="width:33%; vertical-align: top;"> <b>Chemical</b>            331— Dissolved solids            332— <b>8</b> Chloride            333— Nutrients (nitrogen)            334— Nutrients (phosphorus)            335— Common ions            336— <b>8</b> Hardness            337— Radiochemical            338— Dissolved oxygen            339— Other gases            340— Minor elements            341— Pesticides (insecticides, herbicides, etc.)            342— Detergents -MBS            343— Biochemical oxygen demand            344— Carbon (total, dissolved, etc.)         </td> <td style="width:33%; vertical-align: top;"> <b>Biologic</b>            361— Coliforms            362— Other micro-organisms (Benthic organism, phytoplankton, etc.)            363— Other   <b>Sediment</b>            371— Concentration (suspended)            372— Particle size (suspended)            373— Particle size (bed load material)            374— Other         </td> </tr> </table>				<b>Physical</b> 311— Temperature 312— Specific conductance 313— Turbidity 314— Color 315— Odor 316— p <sub>i</sub> (field) 317— <b>8</b> p <sub>i</sub> (lab) 318— Eh 319— Suspended solids 320— Other	<b>Chemical</b> 331— Dissolved solids 332— <b>8</b> Chloride 333— Nutrients (nitrogen) 334— Nutrients (phosphorus) 335— Common ions 336— <b>8</b> Hardness 337— Radiochemical 338— Dissolved oxygen 339— Other gases 340— Minor elements 341— Pesticides (insecticides, herbicides, etc.) 342— Detergents -MBS 343— Biochemical oxygen demand 344— Carbon (total, dissolved, etc.)	<b>Biologic</b> 361— Coliforms 362— Other micro-organisms (Benthic organism, phytoplankton, etc.) 363— Other  <b>Sediment</b> 371— Concentration (suspended) 372— Particle size (suspended) 373— Particle size (bed load material) 374— Other
<b>Physical</b> 311— Temperature 312— Specific conductance 313— Turbidity 314— Color 315— Odor 316— p <sub>i</sub> (field) 317— <b>8</b> p <sub>i</sub> (lab) 318— Eh 319— Suspended solids 320— Other	<b>Chemical</b> 331— Dissolved solids 332— <b>8</b> Chloride 333— Nutrients (nitrogen) 334— Nutrients (phosphorus) 335— Common ions 336— <b>8</b> Hardness 337— Radiochemical 338— Dissolved oxygen 339— Other gases 340— Minor elements 341— Pesticides (insecticides, herbicides, etc.) 342— Detergents -MBS 343— Biochemical oxygen demand 344— Carbon (total, dissolved, etc.)	<b>Biologic</b> 361— Coliforms 362— Other micro-organisms (Benthic organism, phytoplankton, etc.) 363— Other  <b>Sediment</b> 371— Concentration (suspended) 372— Particle size (suspended) 373— Particle size (bed load material) 374— Other				
17. SUPPLEMENTARY DATA AVAILABLE FOR STATION						
<input type="checkbox"/> 421 Surface water station <input type="checkbox"/> 423 Water stage or level <input type="checkbox"/> 425 Time of travel <input type="checkbox"/> 422 Ground water station <input checked="" type="checkbox"/> 424 Water discharge <input type="checkbox"/> 426 Drainage area						
18. STORAGE OF DATA						
<input type="checkbox"/> 501 Published <input type="checkbox"/> 503 Data on punchcard <input type="checkbox"/> 505 Other <input checked="" type="checkbox"/> 502 Not published <input type="checkbox"/> 504 Data on magnetic tape, disc, data cell, etc.						
19. INQUIRIES ABOUT DATA SHOULD BE SENT TO:						
Office <b>Base Maintenance Department, Utilities Division</b>						
Street No. <b>Marine Corps Base</b>						
City, State, Zip <b>Camp Lejeune, North Carolina 28542</b>			City Code <b>0735</b>			
20. DATA ARE AVAILABLE TO PUBLIC ON REQUEST <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
21. OFFICE COMPLETING FORM <b>BASE MAINTENANCE DEPARTMENT</b>						
22. COMPILER'S NAME <b>BOB WILSON</b>			23. DATE Month   19 Year <b>12   19 76</b>			



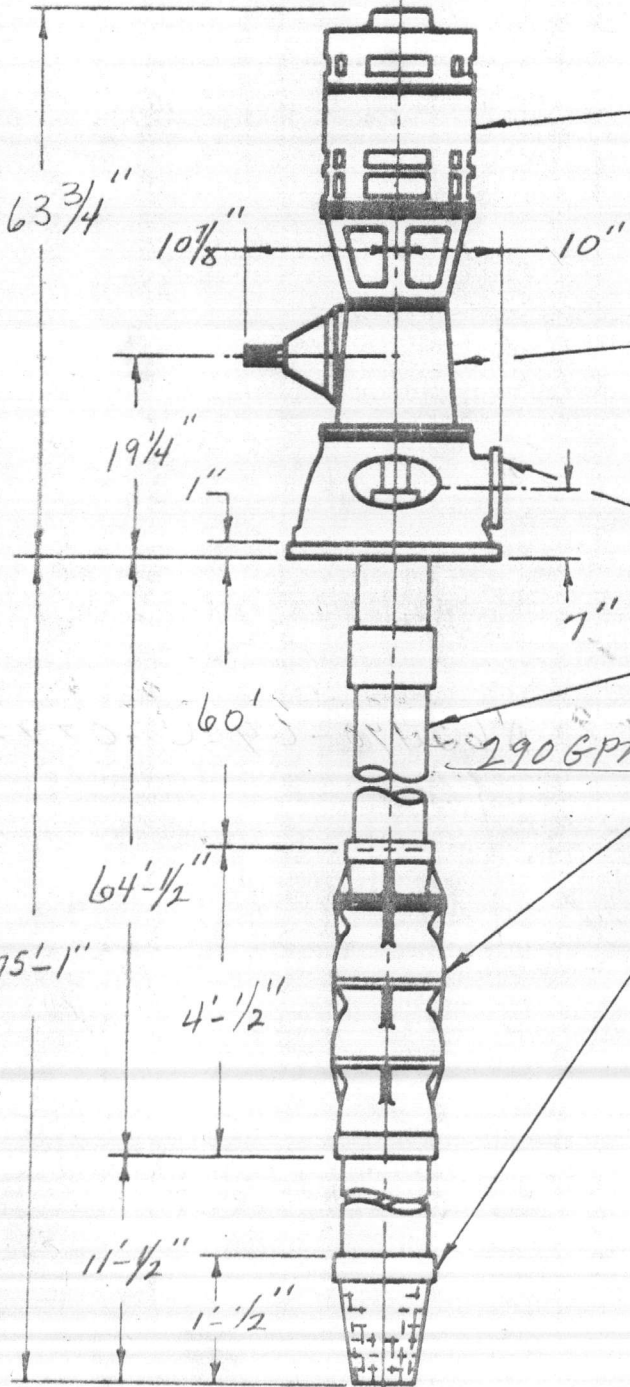
# JOHNSTON VERTICAL TURBINE PUMP *Well No. 640*



$\leftarrow \frac{5}{8}$  " DIA. HOLES ON  $7\frac{3}{4}$  " B.C.

5 " x 125 ASA DISCHARGE FLANGE

CONDITIONS:  
 U.S. GALLONS PER MINUTE - 290  
 TOTAL DYNAMIC HEAD IN FT. - 145  
 LIQUID - WATER  
 SPEC. GRAV. 1.0 @ °F. TEMP.



*G.E.*  
 VERTICAL HOLLOW SHAFT MOTOR  
 HP - 15 PHASE - 3 CYCLE - 60  
 VOLTAGE - 208 RPM - 1760  
 ENCLOSURE - WPI

*AMARILLO* RIGHT ANGLE COMBINATION  
 GEAR DRIVE MODEL - JRL-20 RATIO - 1:1  
 DRIVER RPM - 1760 PUMP RPM - 1760  
 SHAFT DIA. - 1 1/4" KEYWAY 5/16"  
 (GEAR MAY BE ROTATED 90°)

TYPE "A" DISCHARGE HEAD - 10 x 6

COLUMN ASSEMBLY - 5 x 2 x 1 3/16

*COL. TO BE G.W.I.*  
 BOWL ASSEMBLY - 6 STAGE 8 CC  
 - 18.5 D.D. Elev.  
 SUCTION PIPE & CONE STRAINER - 5

CUSTOMER CAMP LEJEUNE N.C.  
 PO# - N62470-69-C-0792  
 DEALER HARTSFIELD WATER CO.  
 PO#  
 JOHNSTON SERIAL NO. GB 1704 ✓  
 JOHNSTON QUOTATION NO. 688-B-106N

*WELL # 640*

NOTE: DO NOT USE FOR CONSTRUCTION  
 UNLESS CERTIFIED



OFFICE OF THE  
OFFICER IN CHARGE OF CONSTRUCTION  
CAMP LEJEUNE, NORTH CAROLINA

**APPROVED**

SUBJECT TO CONTRACT REQUIREMENTS  
CONTRACT NBY \_\_\_\_\_ SPEC. NO. N62470-69-C-0792  
DATE: 10 Jul 69 *J.M.*

J. W. UPDEGROVE  
CAPT. CEC, USN  
Officer in Charge  
of Construction

*Summerlin*

DEPARTMENT OF THE NAVY  
RESIDENT OFFICER IN CHARGE OF CONSTRUCTION  
NAVAL FACILITIES ENGINEERING COMMAND  
MARINE CORPS BASE, CAMP LEJEUNE, NORTH CAROLINA 28542

In Reply Refer to:  
23-510:HH:lc  
N62470-69-C-0792  
18 July 1969

Hartsfield Water Company, Inc.  
Post Office Drawer 3109  
Kinston, North Carolina 28501

Re: Contract N62470-69-C-0792, Replace 4 Raw  
Water Wells 604, 624, 628, and 629 Marine  
Corps Base, Camp Lejeune, North Carolina

Gentlemen:

We are returning X herewith, \_\_\_\_\_ under separate cover, the following  
shop drawings or data sheets with action indicated:

No. of Dwgs.	Dwg. No.	Description	Action
2	DSI-7366	CONTINENTAL MTRS. CORP. Model Y112 4-cylinder Gasoline Engine	Approved, AS NOTED, subj. to contract requirements
2	Cat 26/Dwg.	AMARILLO "Right Angle Gear Drives" 26 Jun 69 w/dimension prints of Combination Drive Manual Operation- sliding clutch	Approved, subject to contract requirements
2	Bul 1080-R	JOHNSON PUMP CO. "Johnson Vertical Pumps"	Approved, subject to contract requirements
2(ea)	H-1253-A	JOHNSON Vertical Turbine Pumps w/ graphs as follows: Gal per/min: 150 HP: 10 PH 3 CY 60 290    15    3    60 180    10    3    60 185    10    3    60	Approved, subject to contract requirements 437 ✓ 1840 ✓ 1658 ✓ 439 ✓
6	Brochure	GE TRICLAD Vertical Mtrs. thru 200HP	NOT APPROVED * RESUBMIT
6	Brochure	GE CONTROL "Combination Magnetic Starters"	" * "
6	GEM-2296C	GE Induction Mtr/Coupling Dimensions	" * "

OK {

\*Note: Specify the piece of equipment being submitted for approval.

Copy to:  
Field(w/1 cy encl)  
File(w/1 cy encl)  
Records(w/2 cys encl)  
Board

Sincerely yours,

D. T. JONES  
ENS, CEC, USNR  
Assistant Resident Officer  
in Charge of Construction



DEPARTMENT OF THE ARMY  
ENGINEER OFFICE IN CHARGE OF INVESTIGATION  
MAJOR WILLIAM HENRY BROWN  
WATER WORKS CAMP BRITAIN, NORTH CAROLINA 1924

In Reply Refer to:  
11-210-11

Reference is made to the following report, the following  
and drawings or data sheets with action indicated:

Notes

Location

No. of

Pages

11-210-11  
11-210-11  
11-210-11



H.P. 640

PSI	FT	GAL
60	58	151
55	—	17 2
50	—	19 2

2-11-81

AIR LINE 61 FT



H.P. Well 640



Reman  
Copis

A complex, stylized handwritten signature or scribble consisting of multiple overlapping loops and a long, sweeping tail that extends downwards and to the right.

U.S. MARINE BASE

641

9.5.71

Camp Lejeune, N.C.

Page 66

Oswalo County

Well 641

Contract. N62470-71-C-0528

Drilled by:

Sydner Hydrodynamics, Inc.

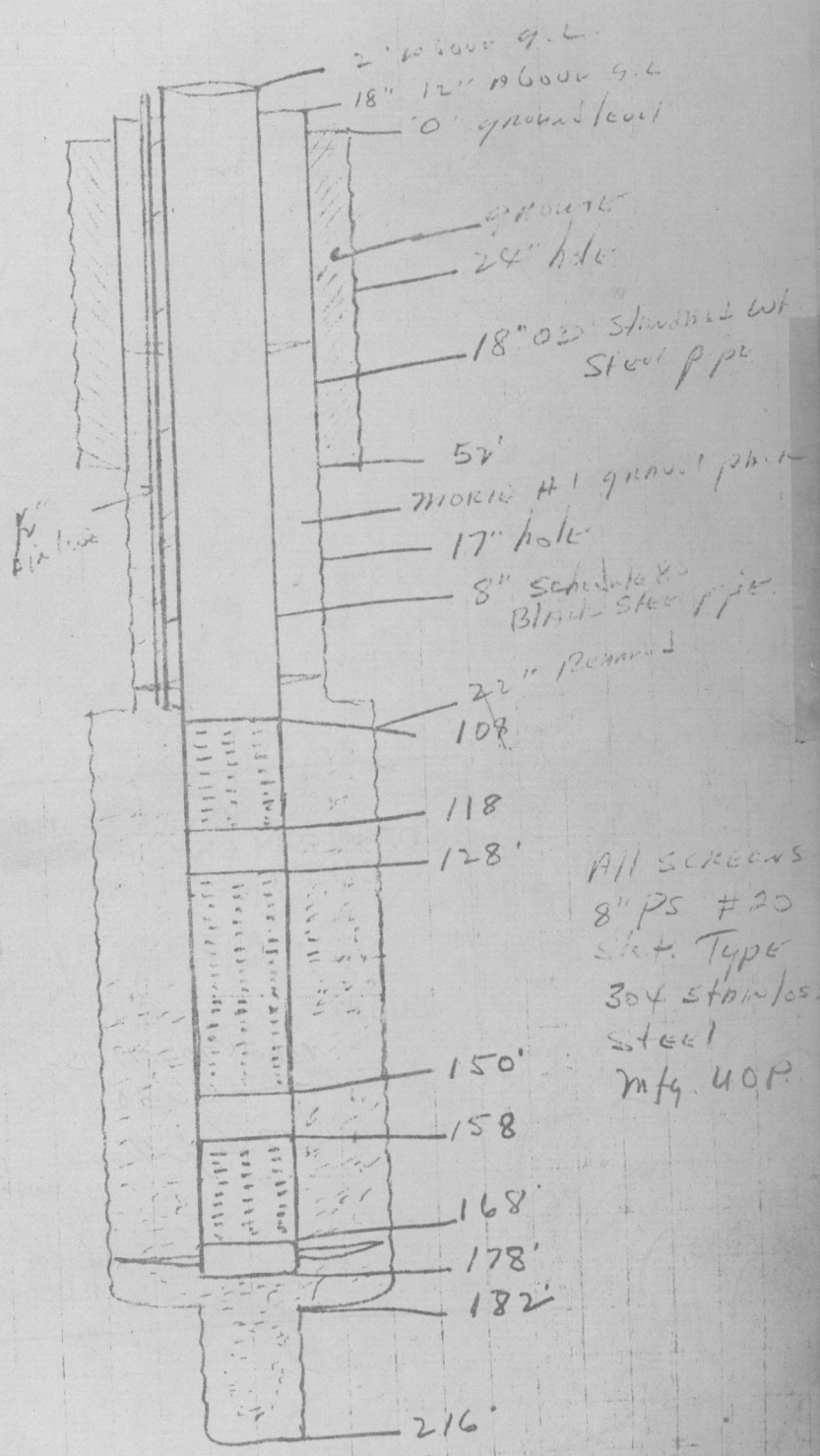
P.O. Box 27186

Richmond, VA 23261

Driller:

Earl Long

No scale - Norris





U.S. Marine Base

641

9/5/71

Camp Lejeune, N.C.

Reg 66

Onslow County

Well 641

Contract. N62470-71-C-0528

Drilled by:

Sydner Hydrodynamics, Inc.

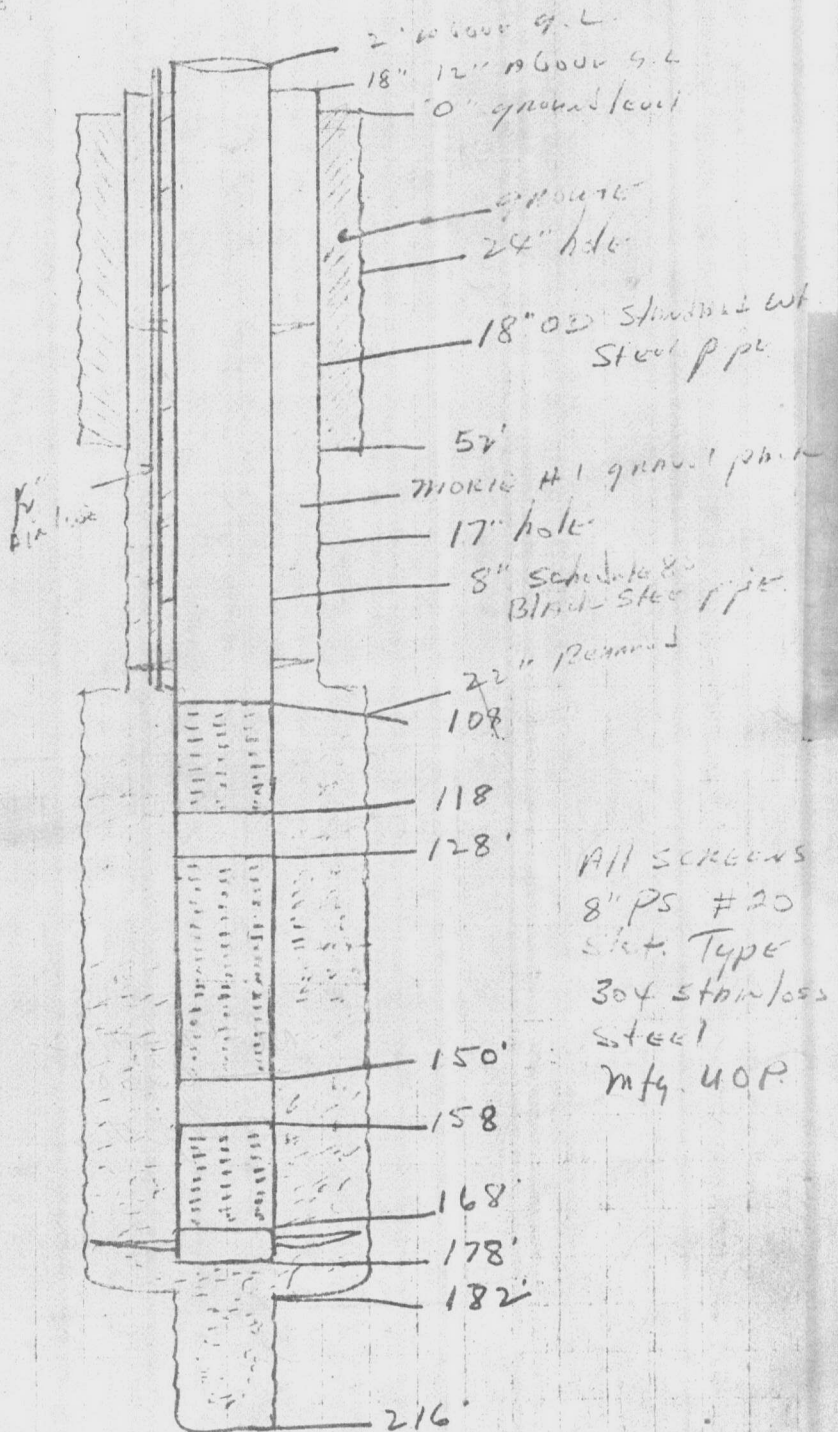
P.O. Box 27186

Richmond, VA 23261

Driller:

Earl Long

No scale - Norris





OFFICE OF THE  
OFFICER IN CHARGE OF CONSTRUCTION  
CAMP LEJEUNE, NORTH CAROLINA

**APPROVED**

SUBJECT TO CONTRACT REQUIREMENTS

*N62470-71-C-*  
CONTRACT-NB: *0528* SPEC. NO. *05-71-0528*

DATE *17 Sep 71*

W. F. RUSSELL, JR.  
CAPT. CEC. USN  
Officer in Charge  
of Construction

DATE 7-25-00

PWSID 04-67-041

WELL # HP 641

WELL NAME HADNOT POINT HP-20

BLDG. HP 641

CODE G.

AVAILABILITY P.

LOCATION SAW MILL ROAD

LATITUDE 34.70832

LONGITUDE 77.32242

WELL DIAMETER 8"

WELL DEPTH 178'

SCREEN INTERVAL \_\_\_\_\_

YIELD 506

STATIC LEVEL 22'

PUMPING LEVEL 63'

PUMP TYPE VERTICAL TURBINE

MOTOR HP 15

INTAKE DEPTH 70

DESIGN CAPACITY 315

ACTUAL GPM 315

SIZE OF CONCRETE SLAB 12X12

HEIGHT OF CASING 17"





# SOURCE INFORMATION GROUND WATER

Date Form Completed

M M D D Y Y  
0 1 2 5 9 4

PWSID  
0467041

Owner Assigned Source Code

Well Name (If purchase, name of system)

Code

G=Ground  
W=Purchase/G  
Y=G w/direct influence  
Z=W w/direct influence

841 HADNOT POINT 641

G

If Purchase, seller ID#

Source Begin Date

Source exempt— SWTR?

Direct Influence Date

Availability

P=Permanent  
E=Emergency  
S=Seasonal  
I=Interim  
O=Other

Source Begin Date: M M Y Y  
Source exempt:  Y  N  
Direct Influence Date: M M D D Y Y  
Availability: P

Location of well within the system (If purchase, location of master meter)

Saw Mill Road

Latitude (N)

Longitude (W)

How Determined

GPS Data

No. of Sats. Locked on

34 42 29

0 77 19 22

G

G=GPS  
M=Map  
S=Surveyed

Q# or DOP #  
3

4

(If purchase, use seller's primary source lat/long)

Vulnerable (VOCs)  Y  N

Assessment Date

## ENTRY POINT INFORMATION

Use Code

Availability

Owner Assigned Entry Point Code

Entry Point Name

C=Ground/Permanent  
D=Ground/non-permanent

P=Year-round  
E=Emergency  
S=Seasonal  
I=Interim  
O=Other

100 HP 64 MCB HADNOT PT WTP

Location:

Well Site: Owned or controlled?  (Y,N) Control Area (100' radius)?  (Y,N) If no, explain:

Sources of pollution/distance:

Surface water within 200'?  Y  N If yes, actual distance  feet If yes, bact. samples collected?  (Y,N)

Adequate slope?  (Y,N) Flooding?  (Y,N) Maintenance: OK

Well House: Free of stored materials?  (Y,N) Properly drained?  (Y,N) Locked?  (Y,N)

Condition of house: OK Type of freeze protection: None

Well: Diameter: 8" Type: SCREENED Yield (gpm): 30-310 Properly sealed?  (Y,N)

Properly vented?  (Y,N) Casing depth  52 ft. (If unknown, put 'UNK') Well depth: 178' Meter available?  (Y,N)

Concrete slab adequate?  (Y,N) If no, explain: Size: 12x12

Size of blow-off: 4" (V) Sample tap: Before treatment?  (Y,N) After treatment?  (Y,N)

Pumps: Capacity: GPM: 310 281 HP: 15 Pump intake depth: 70 Auxiliary Power?  (Y,N)

Type pump: VERTICAL TURBINE Height above floor (pump/casing): 17"

Storage at well site: Elev:  Hydro:  Ground:

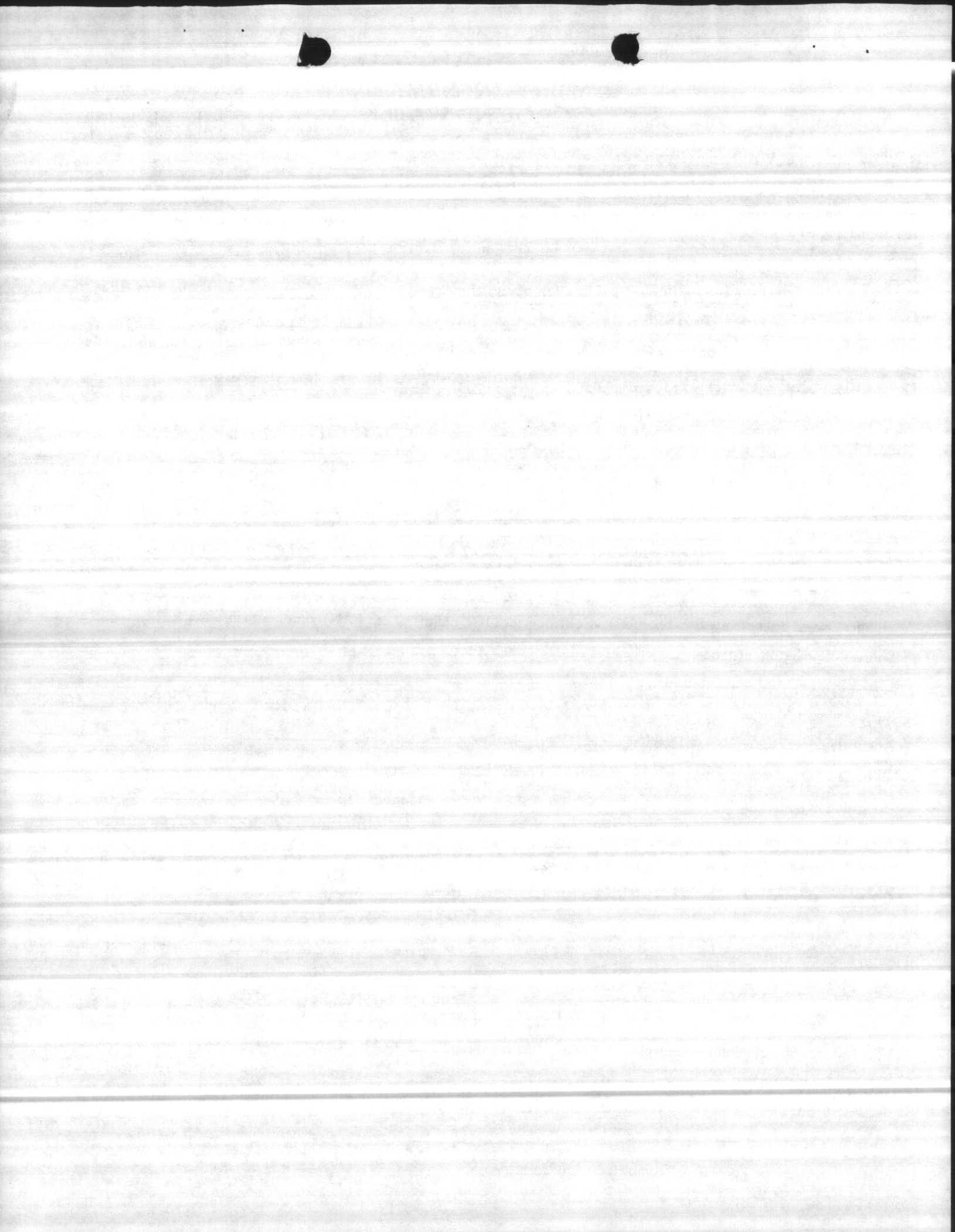
If hydroautomatic, air volume control?  (Y,N) Safety valves?  (Y,N) Coded?  (Y,N)

High service pumps: 1.  gpm  hp 2.  gpm  hp 3.  gpm  hp Auxiliary Power?  (Y,N)

Is the water treated at this well?  Y  N If yes, complete back of form.

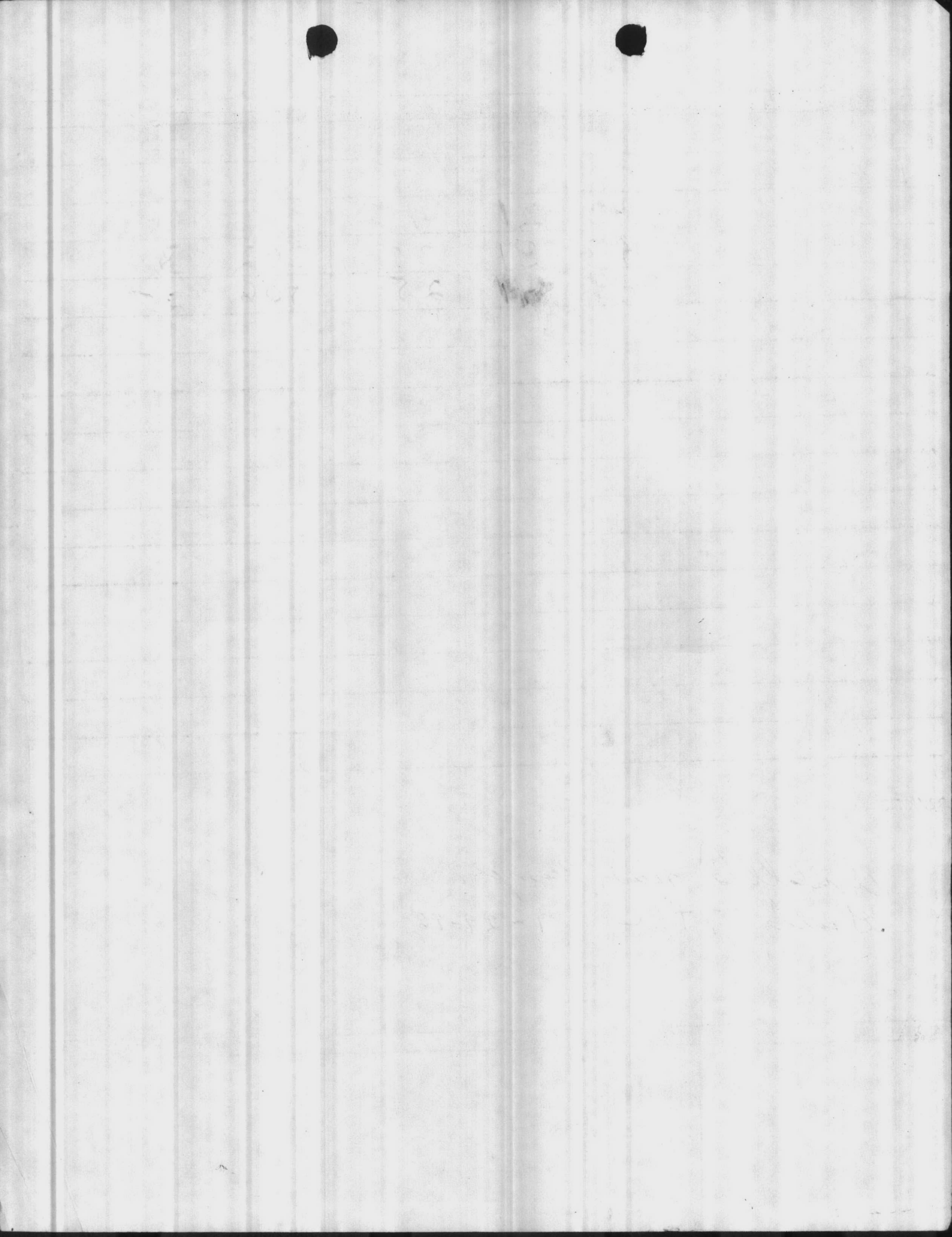
If other wells are treated here, which ones? HP-20 PLANT If treated elsewhere, where?

If purchase, retreat?  Y  N If yes, complete back of form.  
1) NO METER  
2) NO VENT

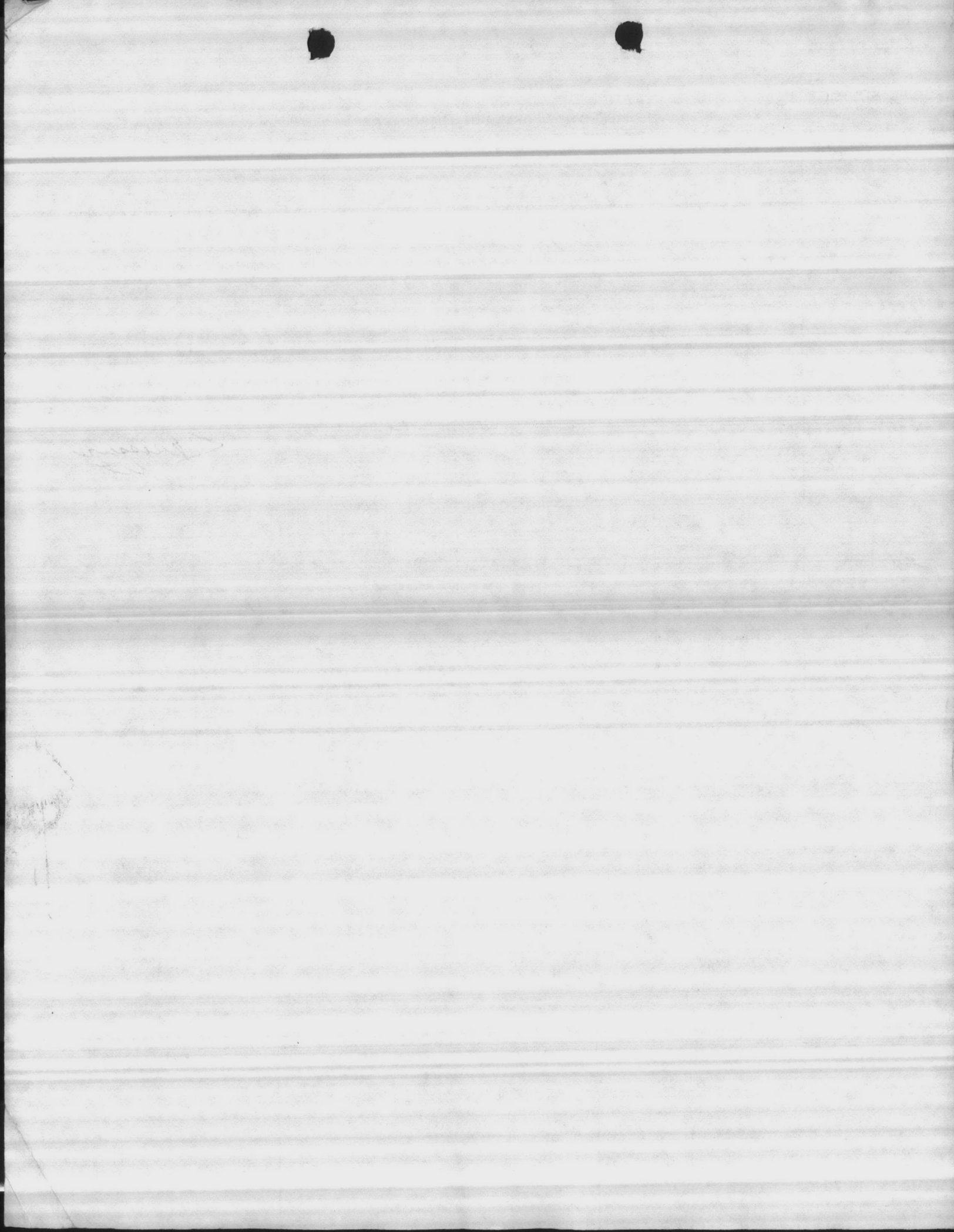






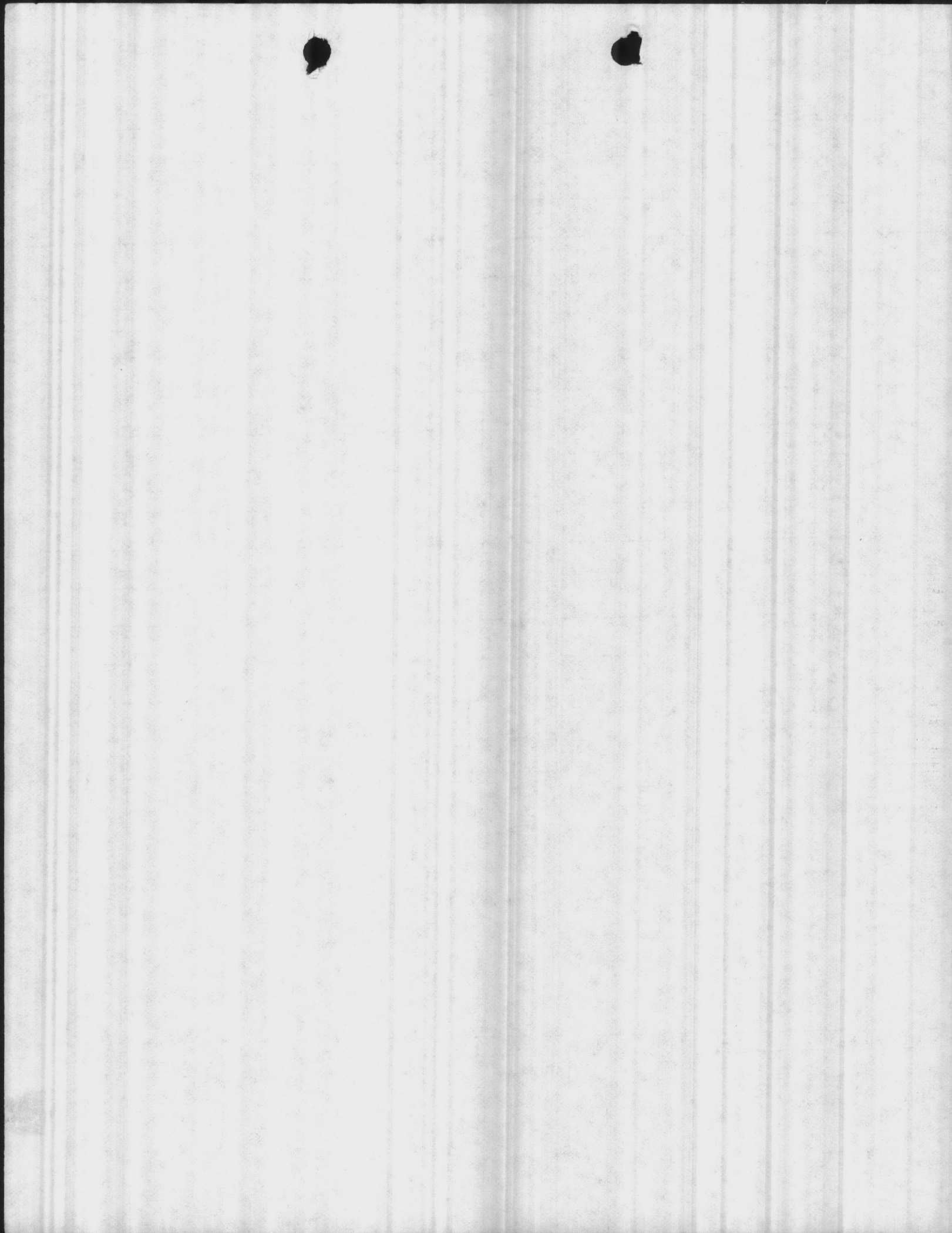






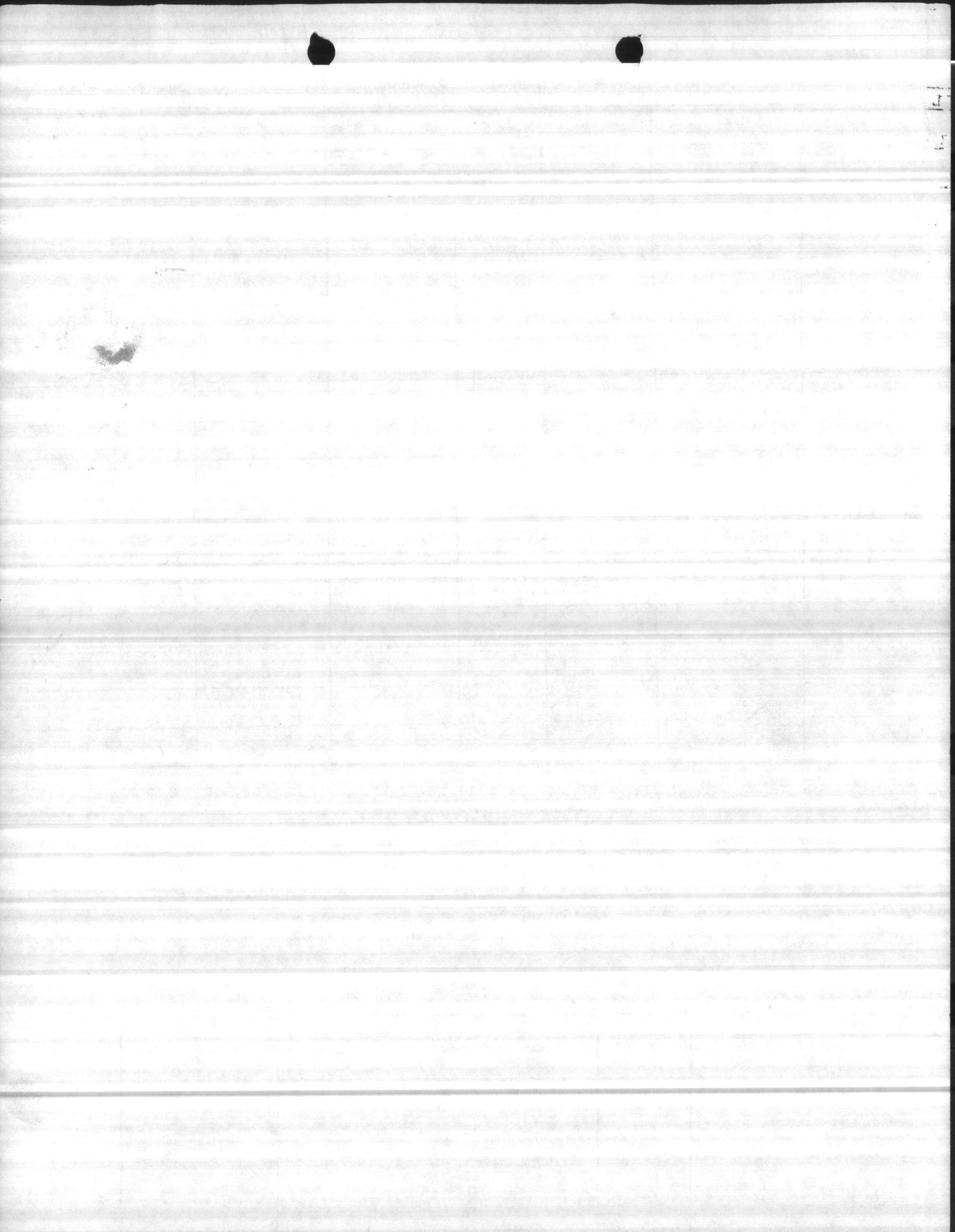




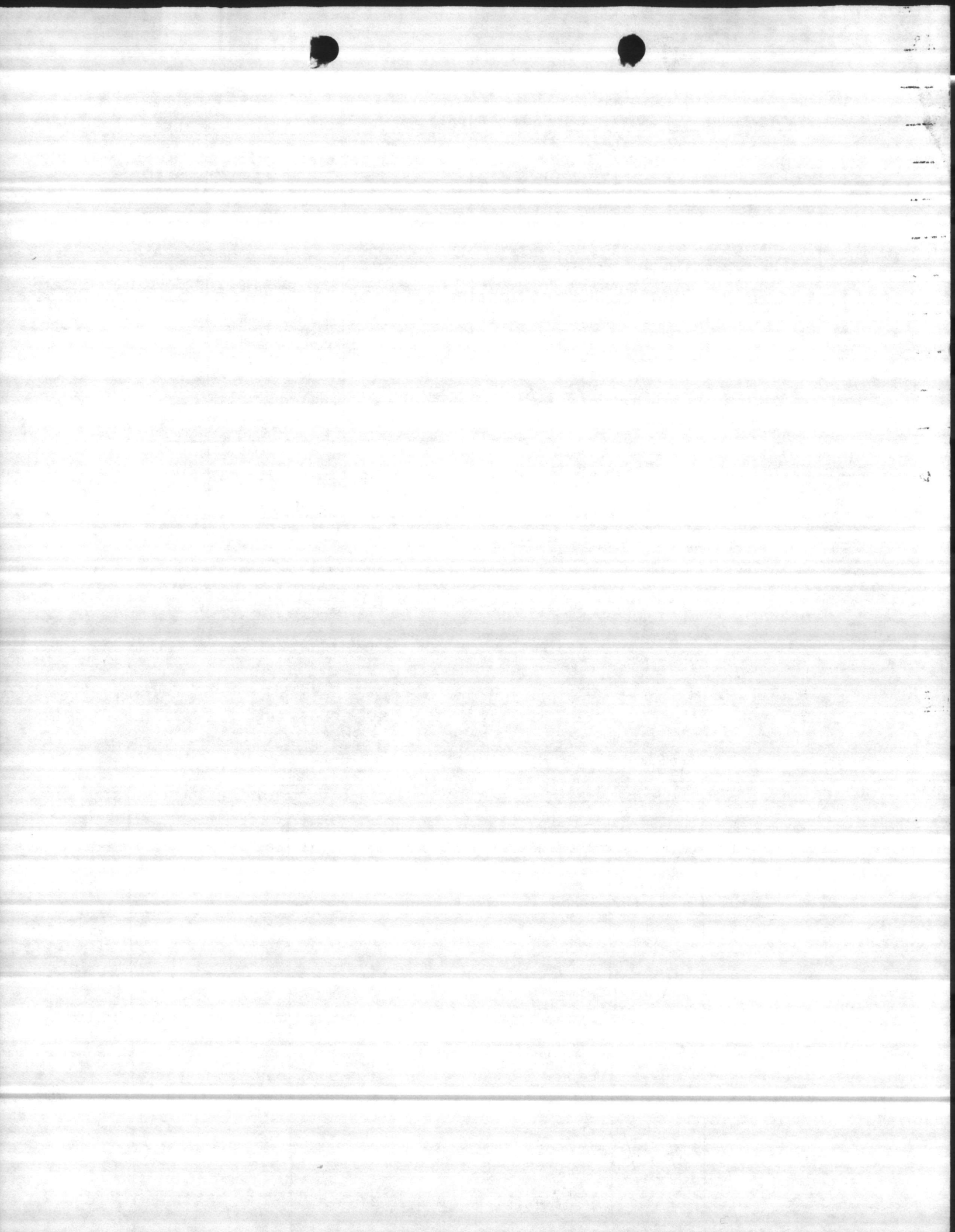














WELL NUMBER 641		BY THOMAS/SARDINAS			DATE 12-10-86	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
108	26	38	12	52	104	0955
		41	15	49	125	1005
		43	17	46	146	1015
		46	20	43	164	1025
		48	22	40	159	1035
		52	26	37	214	1045
		56	30	34	240	1055
		58	32	31	260	1105
		61	35	29	275	1110
		64	38	25	319	1120

dead head 60 PSI

REMARKS

MANUFACTURER

SIZE

641

W/O	178			
P/D	70			
A/L	108	108		
S/L	26	43	108	
P/L	64	83	40	
D/D	38			
GPM	319		10846	
PSI	25		40108	
			6846	

12-10-86

TH

108  
84  
24

108  
40

68

23

43

108  
83  
25



0.11

0.11

0.11

641

W/O 178  
 P/O 70  
 A/L 108  
 S/L 26  
 P/L 64  
 D/O 38  
 GPM 319  
 PSI 25 ✓

108  
 43  
 83

108  
 40  
 10846  
 40108  
 6844

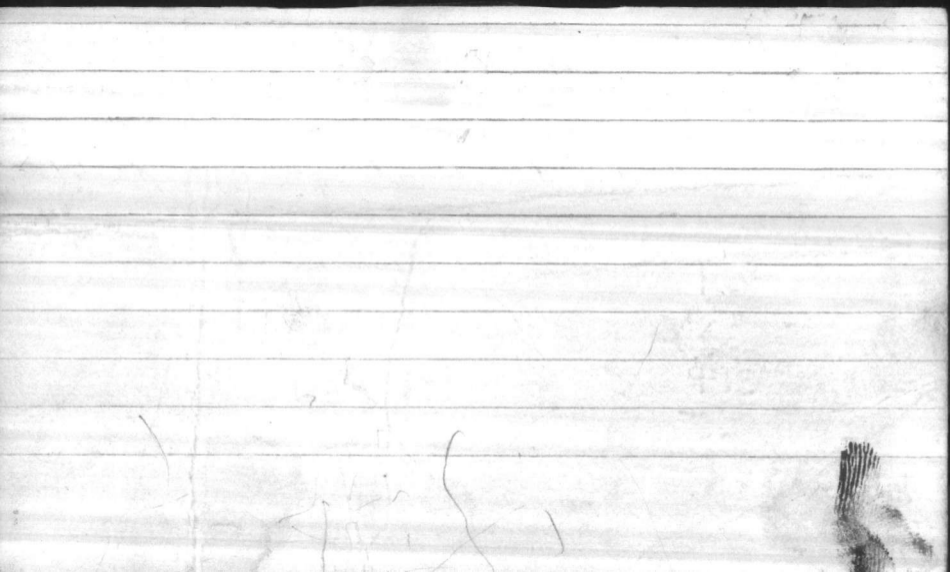
108  
 84  
 24

108  
 40  
 68  
 23  
 43

12-10-86

108  
 83  
 25

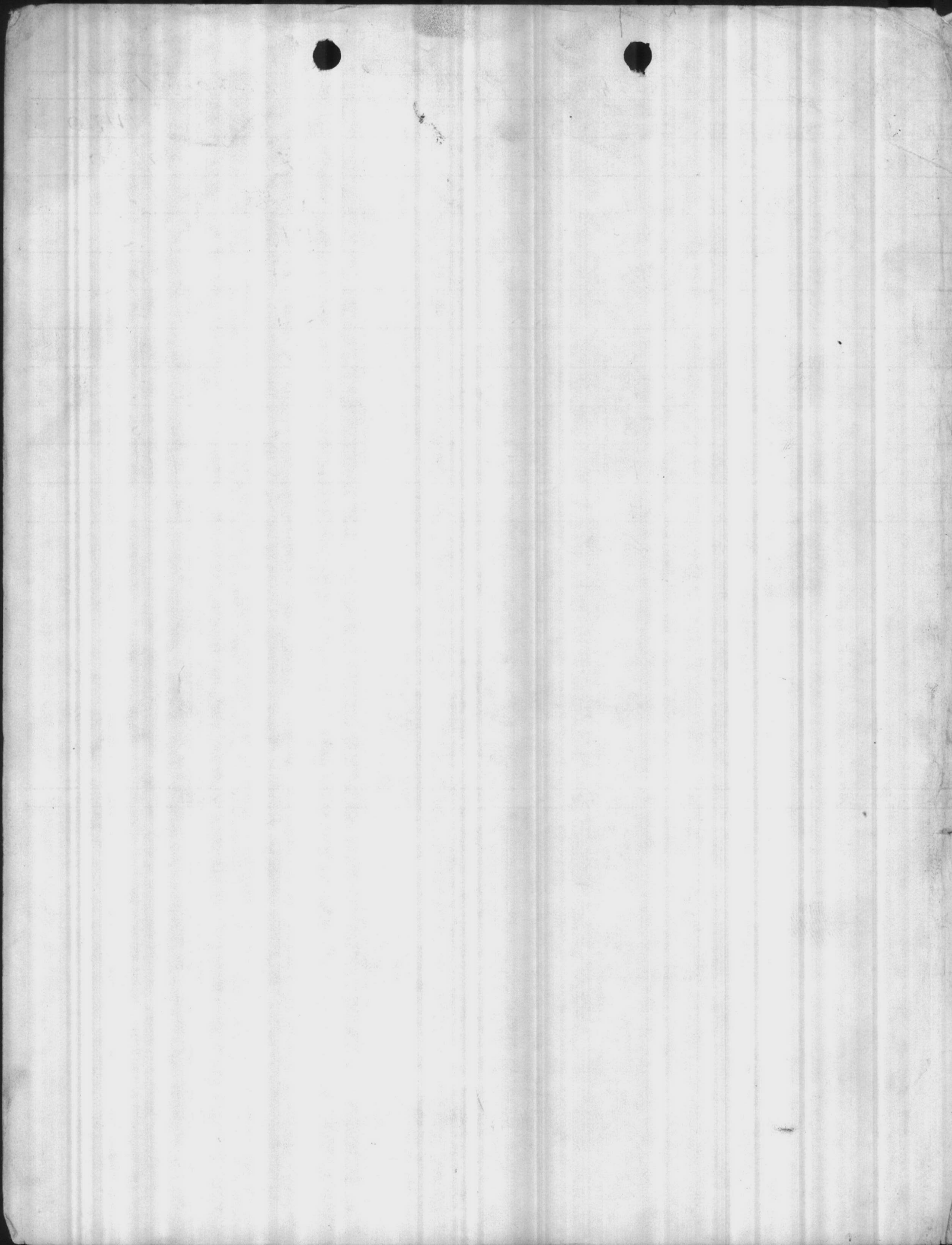




WELL NUMBER 641		BY THOMAS/SARDINAS			DATE 12-10-86	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
108	36	38	12	52	104	0955
		41	15	49	125	1005
		43	17	46	146	1015
		46	20	43	164	1025
		48	22	40	159	1035
		52	26	37	216	1045
		56	30	34	240	1055
		58	32	31	260	1105
		61	35	29	275	1110
		64	38	25	319	1120

REMARKS dead head 60 PSI

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE

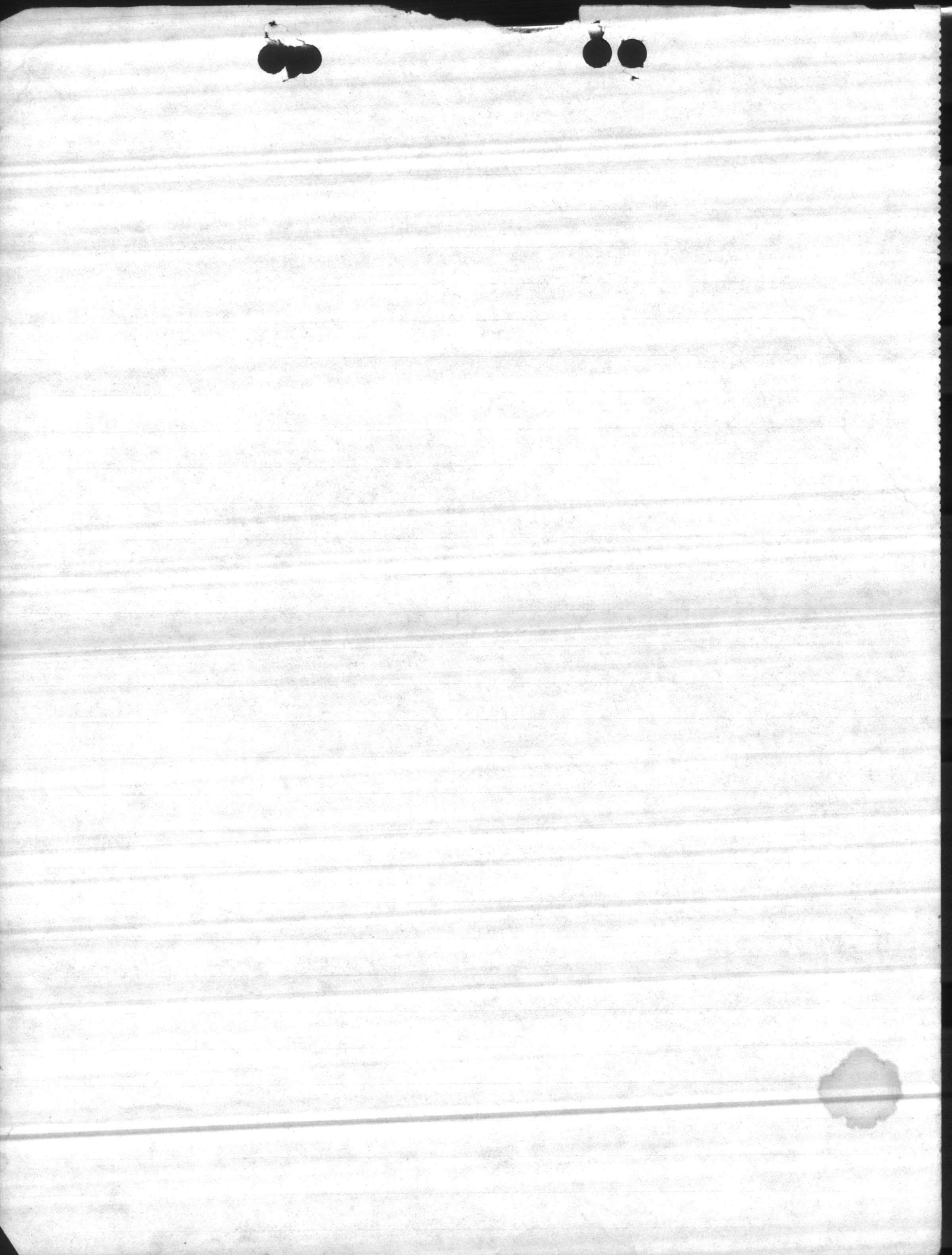




6-41

8-21-85

AL	SL	PL	DO	PSI	CPM	Time
105	75	37	12	56	104	1325
		40	15	52	122	1340
		44	19	48	149	1355
		48	23	44	178	1411
		51	26	40	205	1422
		54	29	35	254	1435
		75	50	10	335+	

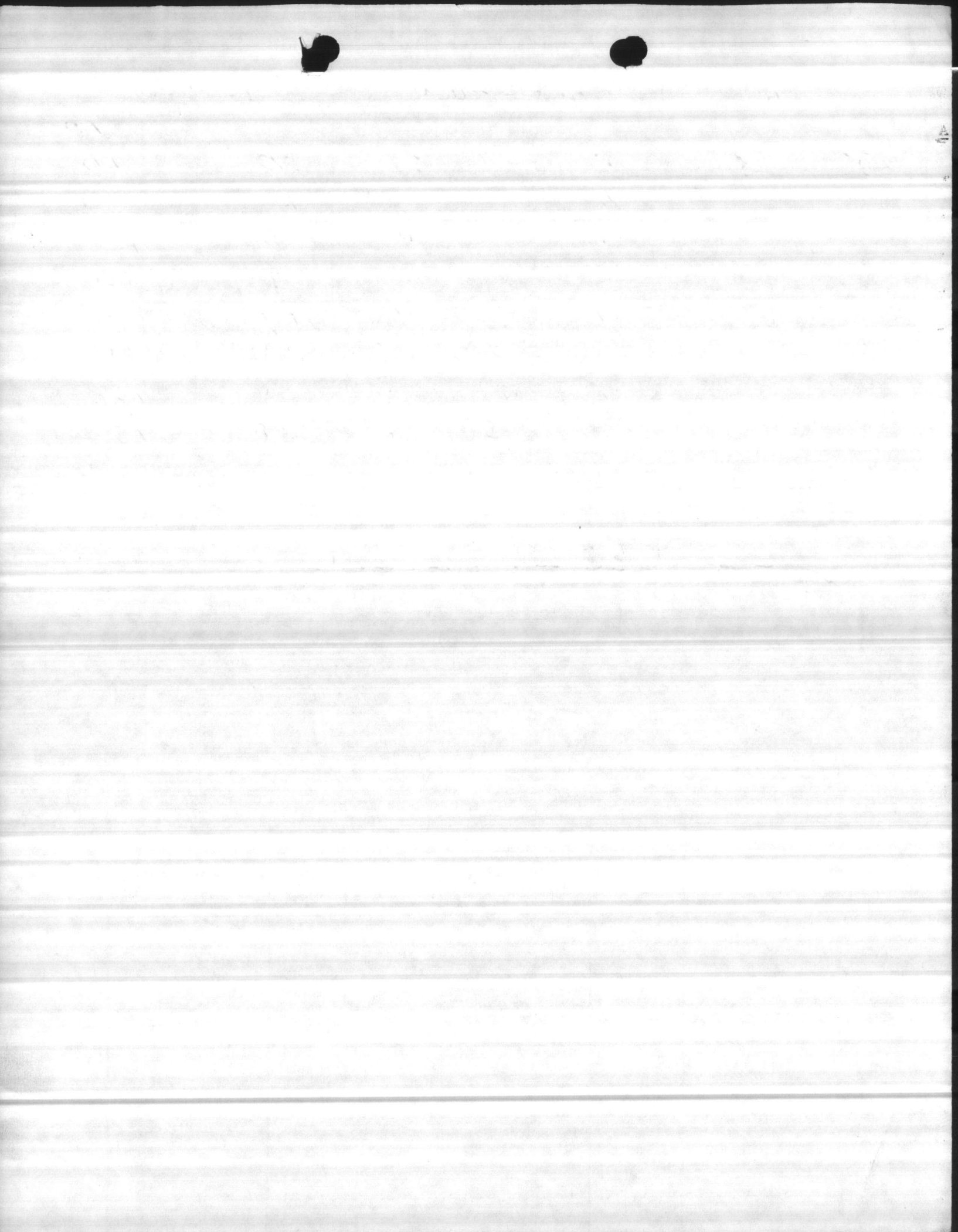


WELL NUMBER 641		BY THOMAS - BROWN			DATE 12-18-84	
AIR LINE	STATIC LEVEL	PUMPING LEVEL	DRAIN DOWN	DISCHARGE PRESSURE	GPM	START TIME
105	25	35	10	50	100	0920
		40	15	47	128	0930
		42	17	44	143	0940
		45	20	41	159	0950
		48	23	38	187	1000
		52	27	25	214	1010
		55	30	31	239	1020
		58	33	28	260	1030
		41	36	25	270+	1040
		64	39	21	300	1050
		66	41	18	325	1100
REMARKS	Left set at	70	45	15	335	1110

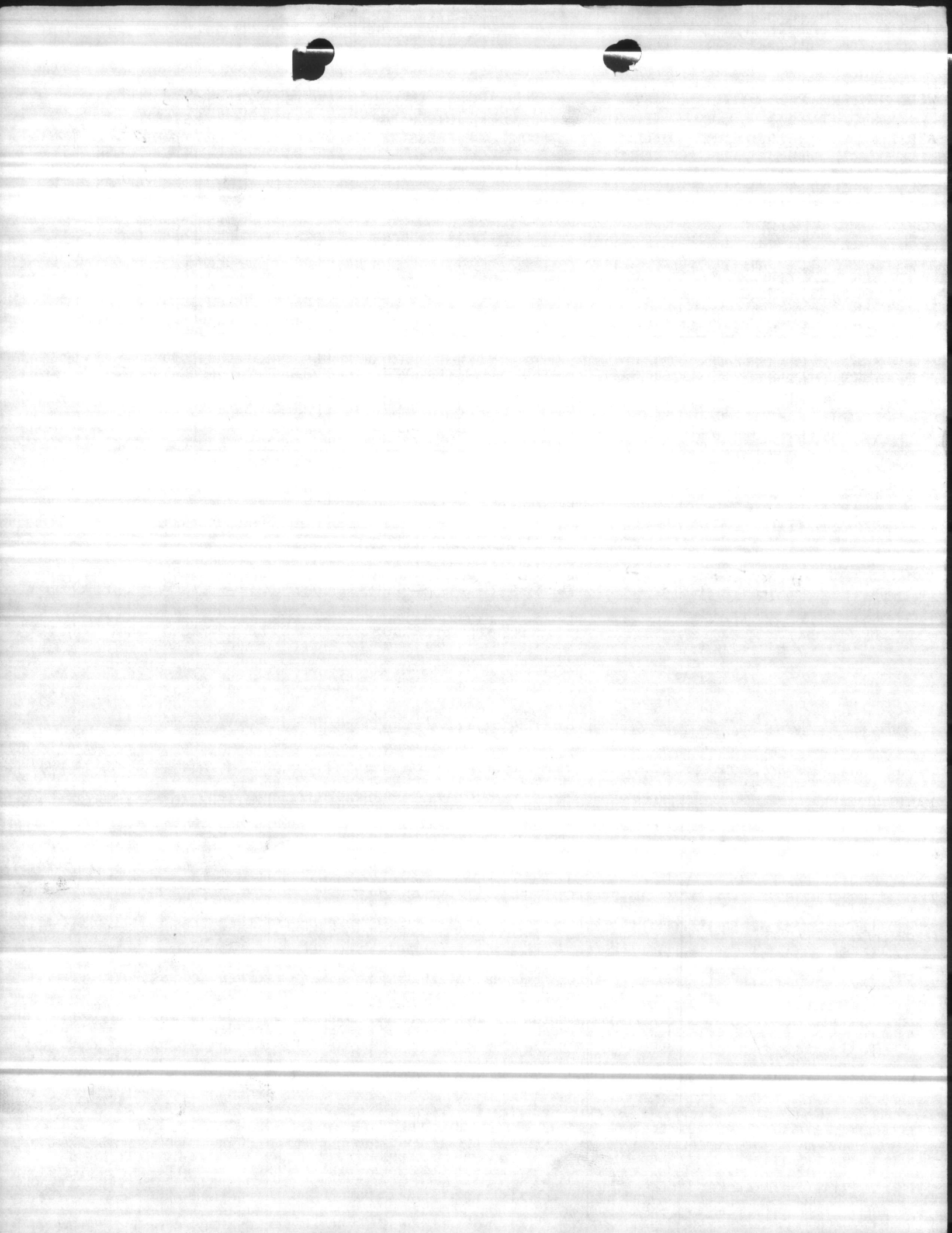
Pump set at 86'

MANUFACTURER	STAGE	S.N.	TOTAL HEAD	SIZE











WELL #

641

DATE

LENGTH OF AIR LINE

STATIC LEVEL

PUMPING LEVEL

DRAW DOWN

DISCHARGE PRESSURE

CAP. PER FOOT OF DRAW DOWN

TOTAL CAP.

3/30/77

108

55

34

52

32

51

30

50

28

48

26

1-11-79

108

85

42'

26

290

47'

30

242

51'

35

201

55'

40

151

REMARKS: 1-10-79 Used ALT. Gage

READING ~~WAS~~ DIRECT

2-13-80

108'

79'

24

289

69'

30

242

70'

35

201

DEPTH OF WELL:  
AIRLINE ELEVATION: +  
DATE INSTALLED:



FORM A-4  
(MAY '70)

U.S. DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY  
OFFICE OF WATER DATA COORDINATION  
INVENTORY OF HYDROLOGIC DATA STATIONS  
QUALITY OF WATER

APPROVED.  
Budget Bureau No. 42-R1485  
Approval Expires June 30, 1976

1. AGENCY CODE <b>MC</b>		2. TYPE <b>Q</b>	3. LATITUDE <b>34° 42' 28" N</b>		4. LONGITUDE <b>77° 19' 24" W</b>	
6. AGENCY STATION NO. <b>HP-641</b>		7. STATION NAME <b>HP-20-641</b>				
8. DRAINAGE BASIN CODE No. <b>06</b> Letter <b>N</b>		9. STATE CODE <b>32</b>	10. COUNTY CODE <b>133</b>	11. COUNTY NAME <b>Onslow</b>		
12. PERIOD OF RECORD Began <b>1972</b> Discontinued		Y <input type="checkbox"/> Continuous <input type="checkbox"/> Interruption Exceeds 1 Year		13. 14. 		
15. SITE <input type="checkbox"/> 101 Stream <input type="checkbox"/> 102 Canal <input type="checkbox"/> 103 Lake <input type="checkbox"/> 104 Reservoir <input type="checkbox"/> 105 Estuarine zone <input type="checkbox"/> 106 Spring <input checked="" type="checkbox"/> 107 Well <input type="checkbox"/> 108 Drain <input type="checkbox"/> 109 Other						
16. TYPES OF DATA AVAILABLE AND FREQUENCY OF MEASUREMENT (Enter appropriate number (1-8) beside each parameter to indicate frequency of measurement. For parameters telemetered, enter "T".)						
1 Continuous      2 Seasonal      3 Daily      4 Weekly      5 Monthly      6 Quarterly      7 Annual      8 Other Periodic						
<i>Physical</i> 311— Temperature 312— Specific conductance 313— Turbidity 314— Color 315— Odor 316— p <sub>H</sub> (field) 317— <b>8</b> p <sub>H</sub> (lab) 318— Eh 319— Suspended solids 320— Other		<i>Chemical</i> 331— Dissolved solids 332— <b>8</b> Chloride 333— Nutrients (nitrogen) 334— Nutrients (phosphorus) 335— Common ions 336— <b>8</b> Hardness 337— Radiochemical 338— Dissolved oxygen 339— Other gases 340— Minor elements 341— Pesticides (insecticides, herbicides, etc.) 342— Detergents -MBS 343— Biochemical oxygen demand 344— Carbon (total, dissolved, etc.)		<i>Biologic</i> 361— Coliforms 362— Other micro-organisms (Benthic organism, phytoplankton, etc.) 363— Other  <i>Sediment</i> 371— Concentration (suspended) 372— Particle size (suspended) 373— Particle size (bed load material) 374— Other		
17. SUPPLEMENTARY DATA AVAILABLE FOR STATION <input type="checkbox"/> 421 Surface water station <input type="checkbox"/> 422 Ground water station <input type="checkbox"/> 423 Water stage or level <input checked="" type="checkbox"/> 424 Water discharge <input type="checkbox"/> 425 Time of travel <input type="checkbox"/> 426 Drainage area						
18. STORAGE OF DATA <input type="checkbox"/> 501 Published <input checked="" type="checkbox"/> 502 Not published <input type="checkbox"/> 503 Data on punchcard <input type="checkbox"/> 504 Data on magnetic tape, disc, data cell, etc. <input type="checkbox"/> 505 Other						
19. INQUIRIES ABOUT DATA SHOULD BE SENT TO: Office <u>Base Maintenance Department, Utilities Division</u> <u>Marine Corps Base</u> Street No. _____ City, State, Zip <u>Camp Lejeune, North Carolina 28542</u> City Code <u>0735</u>						
20. DATA ARE AVAILABLE TO PUBLIC ON REQUEST <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No						
21. OFFICE COMPLETING FORM <b>BASE MAINTENANCE DEPARTMENT</b>						
22. COMPILER'S NAME <b>BOB WILSON</b>				23. DATE Month <b>12</b>   19 <b>76</b> Year		







## Pump & Lighting

315 9TH STREET, S.E. • P.O. BOX 2504 • HICKORY, NC 28601 • PHONE: (704) 324-9705 • FAX: (704) 324-4365

November 10, 1995

Mr. Stanley Miller  
PSC Box 20004  
Base Maintenance Div. Bin \*1)  
Camp LeJeune, North Carolina  
28542

Dear Stanley:

Subject: **Well 641**

We are pleased to offer the following "American Made" pump bowl assembly for your consideration on the above application. The only pipe I am aware of with a 8 5/8" O.D. and a 7 1/2" I.D. could be schedule 80. I cannot imagine why any one would install this as a casing pipe in a well of this depth.

### Design Conditions: 300 GPM @ 117' TDH

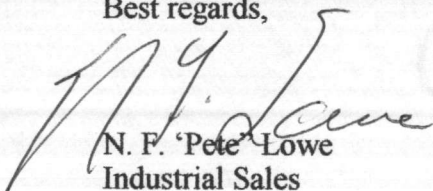
One (1) ea. Goulds Model 7THC Vertical Turbine Pump Bowl Assembly. Six Stage, Product Lubricated, 5" Suction, and 6" Discharge Connections. Shaft Projection and Thread to Match Fairbanks Morse 1 1/4" Shaft Coupling.

Your Cost                      \$1,865.00

Price includes freight to your location. Price does not include any taxes, anchor bolts, or other accessories not listed above. Terms are net 30 days.

You may want to make a note in the well file as to the inside diameter of this casing.

Best regards,

  
N. F. "Pete" Lowe  
Industrial Sales

NFL

cc: Ed White  
Cindy Benfield  
File

*CLASSIC CRIST*  
**INSTALLED**  
**1-24-96**

e



A Hughes Supply Company

Mr. Stanley Miller

East Main Street (Box 10)

Dear Sir:

Reference is made to

We are pleased to offer the following American made pump body assembly for your

consideration on the basis of the following information:

of this job:

Order Number 300 001 W 117 011

The (1) so Goods which will be received in your pump body assembly are: 2 1/2" Dia. Cast  
Iron, 2" Dia. Cast Iron, and 2" Dia. Cast Iron. Cast Iron, 2" Dia. Cast Iron, and 2" Dia. Cast Iron.  
Match the above items with the following items:

Your Cost \$1,805.00

This includes freight to your office. This does not include any taxes, which may be added.  
Inquiries not listed above will be met in due time.

I am sure you will find this information of interest.

Sincerely,  
C. J. Miller

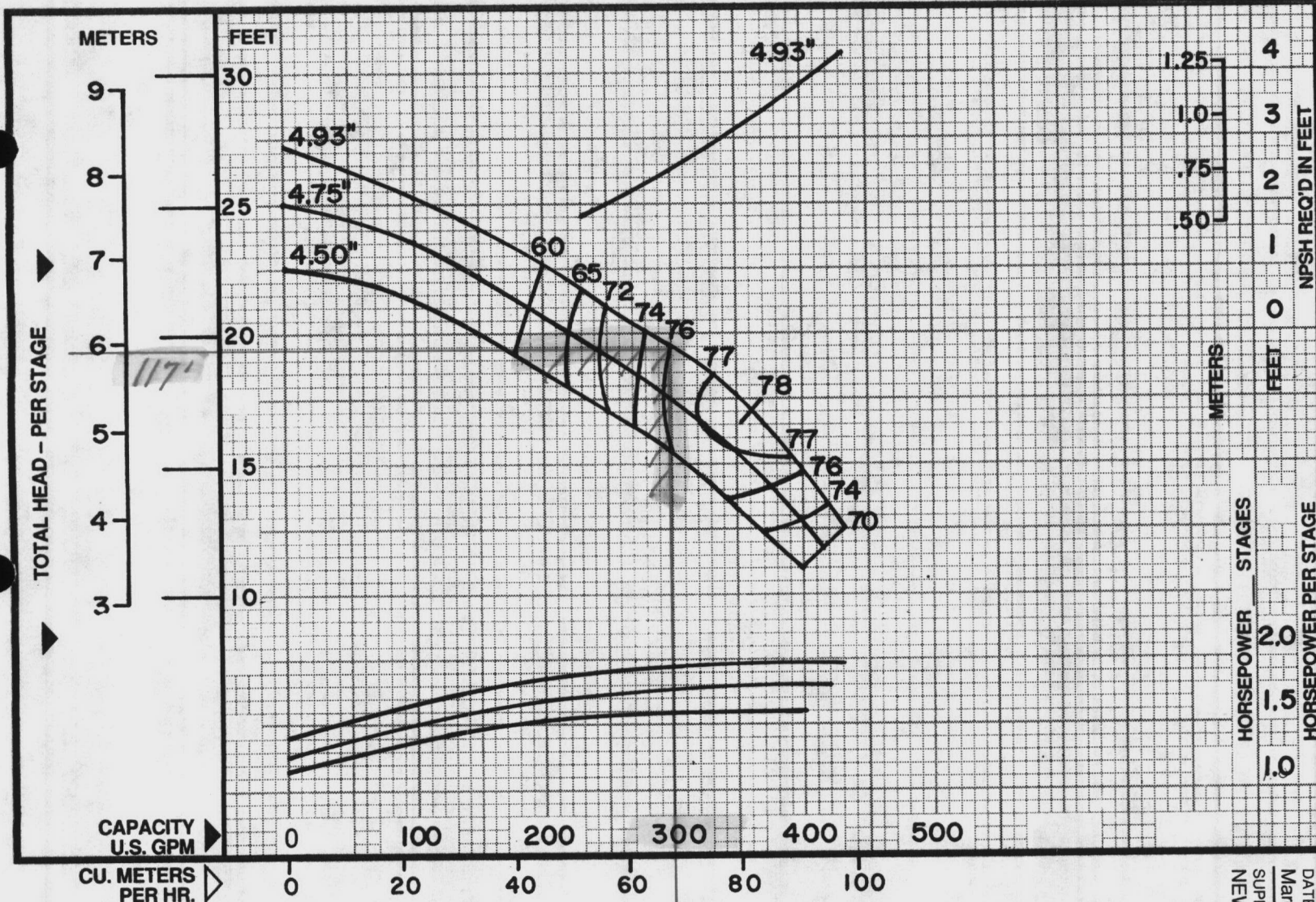
C. J. Miller

cc: Mr. Miller

C. J. Miller



GOULDS PROPOSAL NO.	GOULDS S.O. NO.	INQUIRY NO.	CUSTOMER P.O. NO.	P.O. DATE	ITEM NO.	CUSTOMER	
PROJECT			SERVICE	GPM CAPACITY	F.T. TDH	% EFFICIENCY	RPM



Curve No: E6407TFPCO  
 Model: 7THC  
 RPM: 1770

EFFICIENCY CORRECTION	
STGS. 1	-3.0
STGS. 2	-2.0
STGS. 3	-1.0

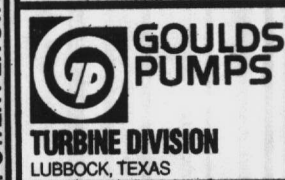
PERF BASED ON STD. MTL'S

Impeller= C02977B

$N_s = 3619$

$K = \frac{4.56 \text{ LBS/FT}}{6.78 \text{ KG/M}}$

K (Bal.)=

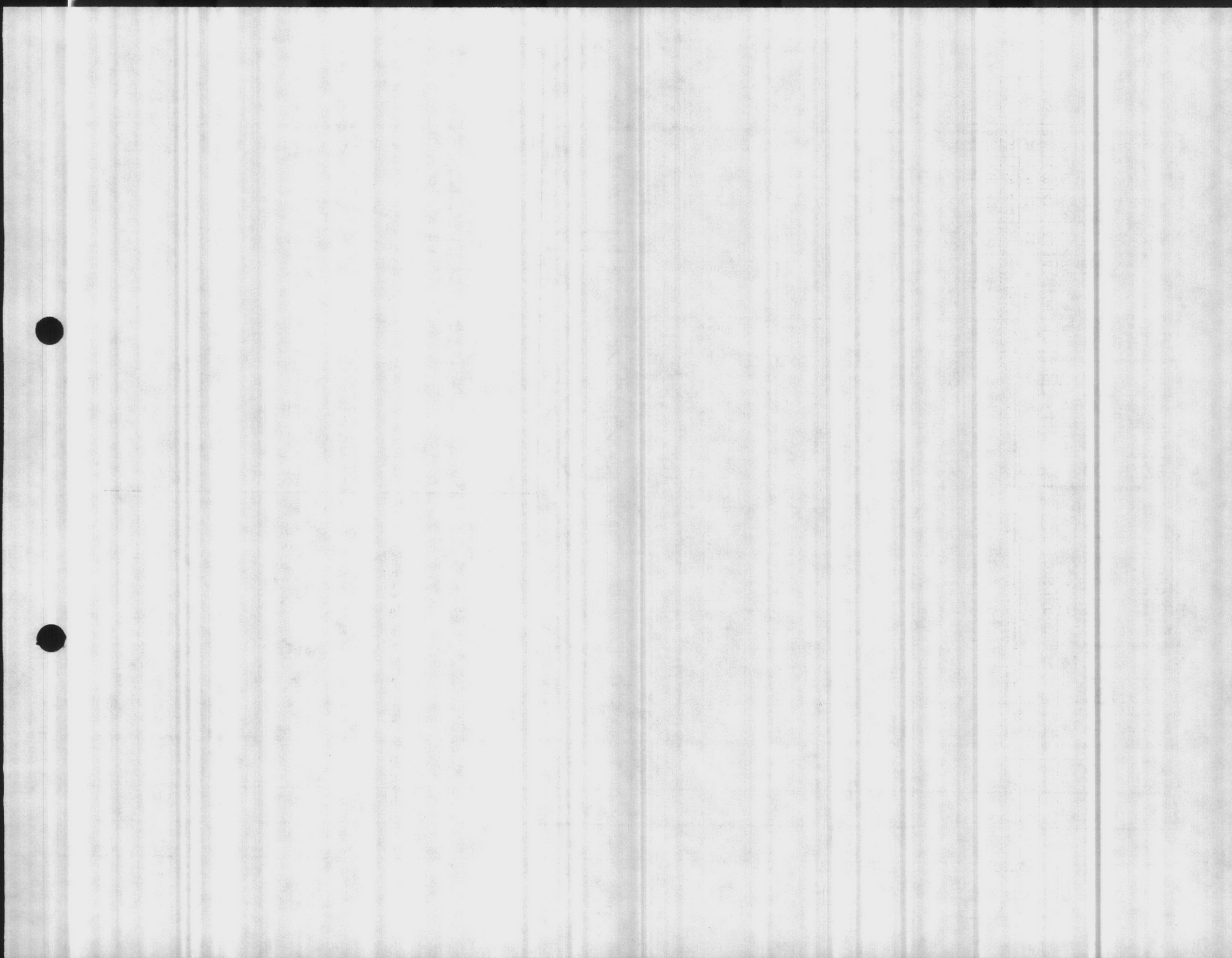


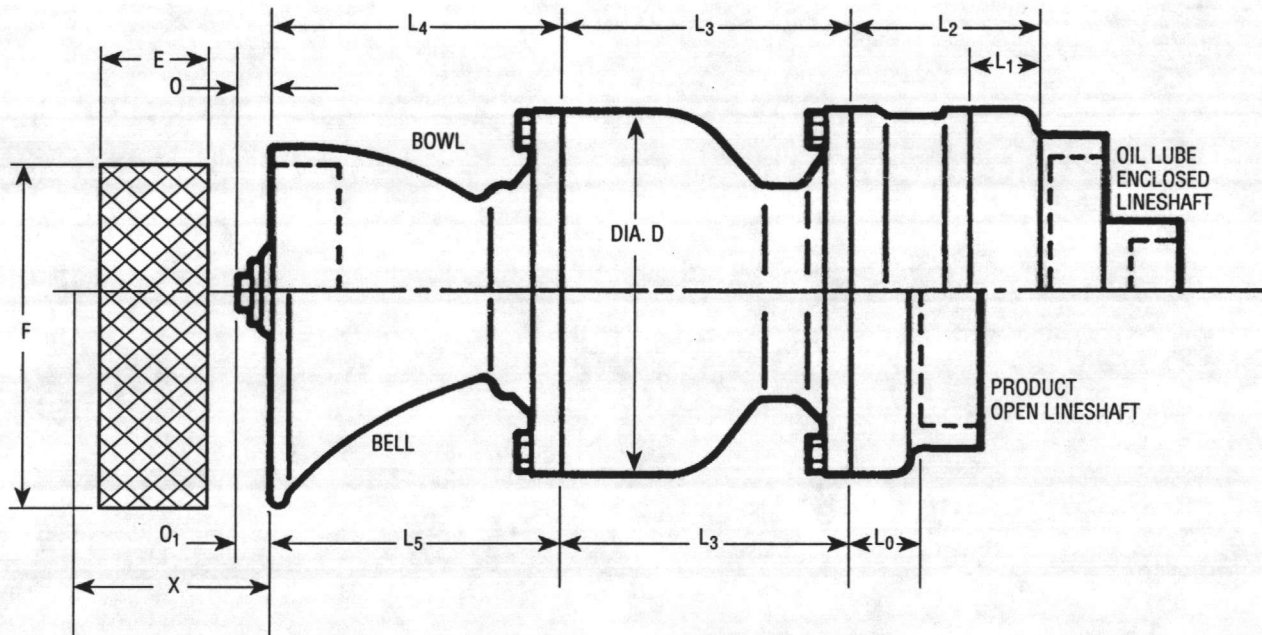
Characteristics based upon pumping clear, non-aerated water.  
 Rating point only is guaranteed. Column losses not included.

MODEL  
**7THC**

DATE  
 March 1995

SUPERCEDES  
 NEW



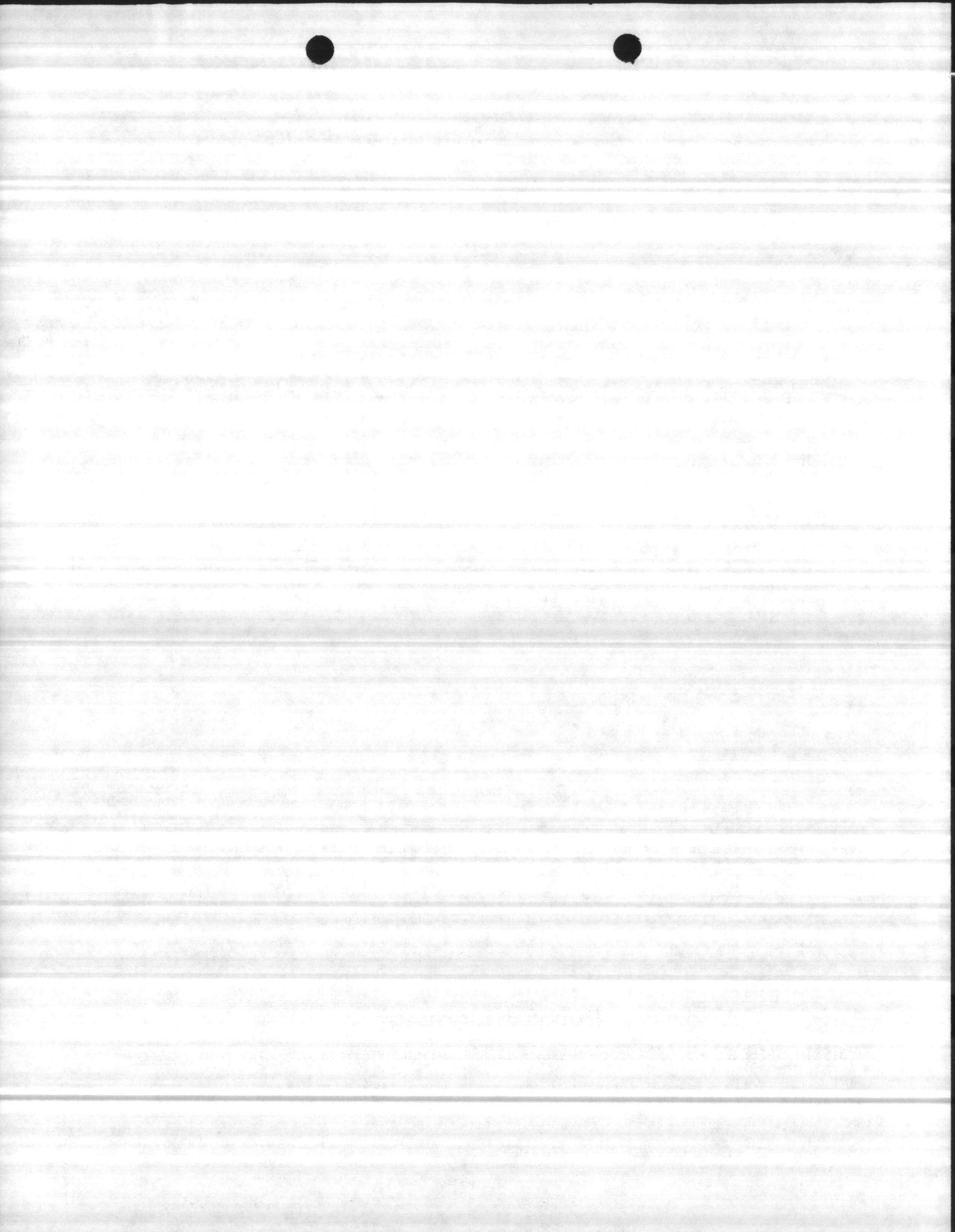


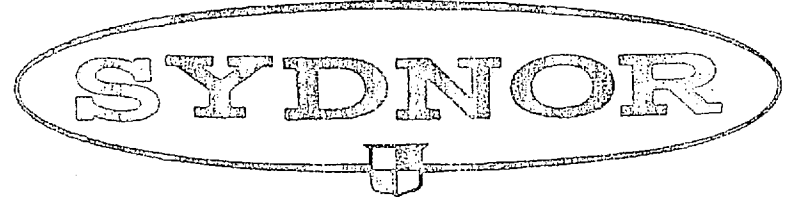
### Turbine Mechanical Bowl Data

Model and Size	Bowl Assembly Length									Basket Strainer (Optional)		Floor Clearance X	Bowl O.D. D	Bowl Shaft Dia.	Available Lineshaft Sizes	Column Pipe Size	Suction Pipe Size	1st Stage Bowl Assembly Weight		Add'l Stage Weight
	L <sub>0</sub>	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	L <sub>5</sub>	O	O1	E	F	Open Shaft							Enclosed Shaft		
5C	1.82	NA	NA	4.62	5.0	NA	0	NA	NA	NA	2.0	5.12	1.0	1.0	3,4	4	42	NA	13	
5T	1.82	NA	NA	4.80	5.0	NA	0	NA	NA	NA	2.0	5.12	1.0	1.0	3,4	4	43	NA	13	
6C	2.50	NA	5.12	5.12	5.0	3.75	1.0	1.75	4.0	7.31	2.0	5.9	1.0	1.0	3,4	4	47	55	17	
6DH	3.50	NA	5.12	5.5	5.38	5.38	1.0	1.5	4.0	7.31	4.62	5.5	1.0	1.0	3,4	4,5	48	57	16	
6RA	2.06	NA	5.12	3.75	NA	3.0	NA	4.0	4.87	7.0	2.0	5.5	1.0	1.0	3,4	NA	42	52	20	
7C	2.44	.88	4.38	6.38	5.88	2.88	1.0	3.25	6.81	8.0	4.5	7.13	1.19	1.0-1.19	4,5,6	5	50	72	28	
7RA	2.44	1.19	4.38	4.5	NA	3.62	NA	3.38	4.87	7.0	5.38	7.5	1.0	1.0	3,4	NA	51	69	28	
7T	2.44	.88	4.38	7.09	5.9	-	1.00	-	NA	NA	5.50	7.13	1.19	1.0-1.19	4,5,6	5	53	71	31	
7WA	2.44	.88	4.38	5.5	6.13	3.25	NA	4.12	6.81	8.0	8.0	7.13	1.19	1.0-1.19	4,5,6	4	54	76	30	
8DH	2.37	1.19	4.38	7.37	6.0	6.0	2.5	2.5	8.5	9.5	9.0	7.5	1.19	1.0-1.19	4,5,6	6	80	95	34	
8I	2.37	1.19	4.38	6.38	6.38	3.75	1.0	4.13	6.25	8.62	6.5	7.5	1.19	1.0-1.19	4,5,6	5	75	90	33	
8RA	2.37	1.19	4.38	5.0	NA	3.12	NA	3.88	5.87	8.0	5.88	7.5	1.19	1.0-1.19	4,5,6	NA	67	82	36	
8RJ	2.37	1.19	4.38	6.5	6.25	3.5	1.0	3.75	5.5	9.25	6.5	7.5	1.19	1.0-1.19	4,5,6	5	77	92	34	
9RA	2.37	1.19	4.38	5.5	NA	4.0	NA	5.25	5.87	8.0	7.25	7.5	1.19	1.0-1.19	4,5,6	NA	66	126	46	
10DH	2.94	1.25	5.19	9.25	8.38	5.75	4.38	7.75	14.0	14.25	14.0	9.5	1.69	1.0-1.69	6,8	8	140	170	64	
10I	2.94	1.25	5.19	7.81	9.73	5.0	1.0	5.75	6.62	10.75	7.5	9.5	1.5	1.0-1.5	6,8	6	128	162	58	
10RA	2.94	1.25	5.19	6.62	NA	3.6	NA	3.0	6.5	9.75	1.91	9.5	1.5	1.0-1.5	4,6,8	NA	141	176	76	
10RJ	2.94	1.25	5.19	8.4	9.73	5.87	1.0	5.87	5.5	11.0	7.5	9.5	1.5	1.0-1.5	6,8	6	130	165	60	

(All dimensions are in inches and weights in lbs.)







# GEOPHYSICAL WELL SURVEY

SYDNOR HYDRODYNAMICS, INC.  
2111 MAGNOLIA STREET - RICHMOND, VA. 23261

CUSTOMER: Marine Corps Base ENGINEER: \_\_\_\_\_  
 LOCATION: Camp Lejeune ADDRESS: \_\_\_\_\_  
 COUNTY: Onslow STATE North Carolina  
 WELL NO. 641 LOCATION 50' South of RW Line in Service Rd. DRILLER Earl Reay  
 DEPTH 216 DATA FROM Ground level ELEVATION \_\_\_\_\_  
 HOLE DIAMETER 6" DESCRIPTION Sand, clay, rock and shells  
 MUD: KIND Acragel WEIGHT \_\_\_\_\_  
 VISCOSITY \_\_\_\_\_ RESISTIVITY \_\_\_\_\_ °F  
 CASING: 7" OD surface pipe

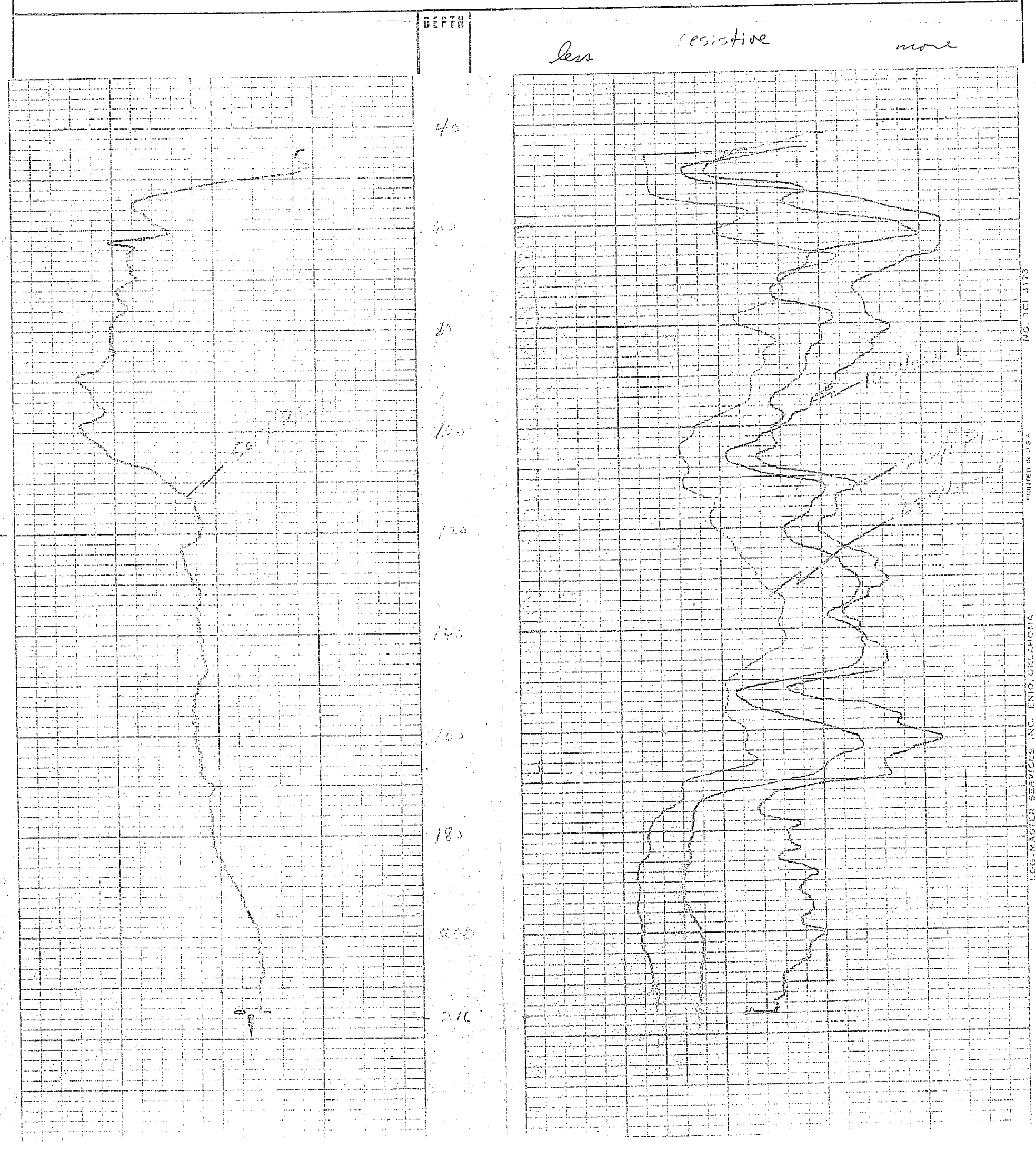
TYPE OF SURVEY: Resistivity

16" Normal	25 ohms/ft
63" Normal	50 ohms/ft
Single Point	10 ohms/ft
Self Potential	10 mV/ft

REMARKS: Test Well

Zone 1	140-170
Zone 2	108-138
Zone 3	58-88

LOGGED BY: C. C. Morris  
 DATE: 8-19-71



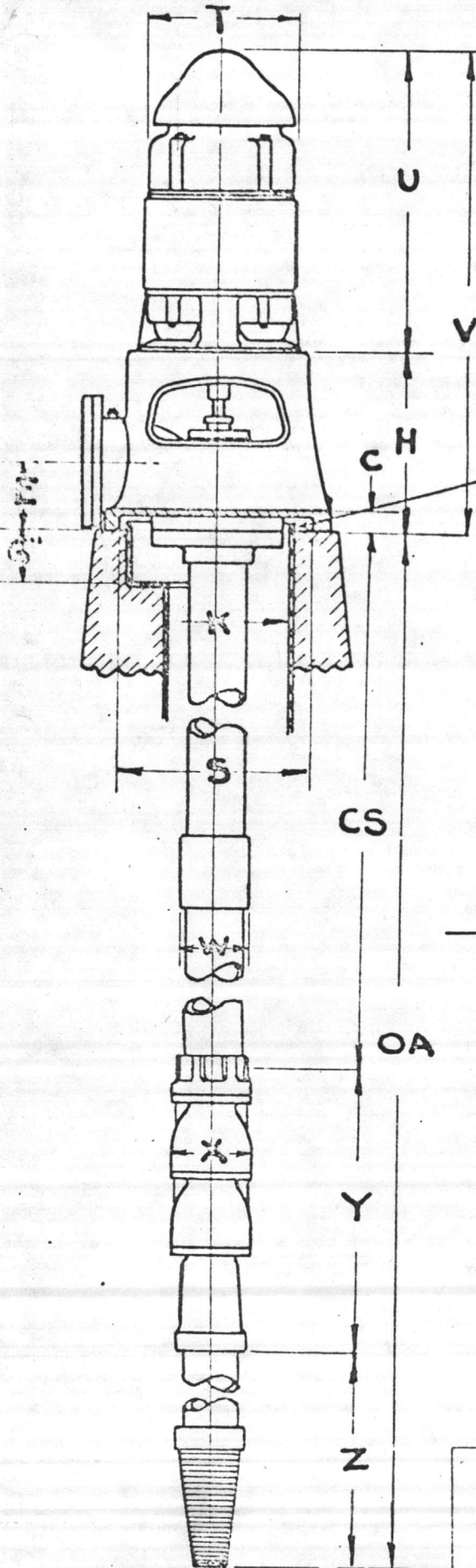
LOG-MASTER SERVICE, INC. ENID, OKLAHOMA







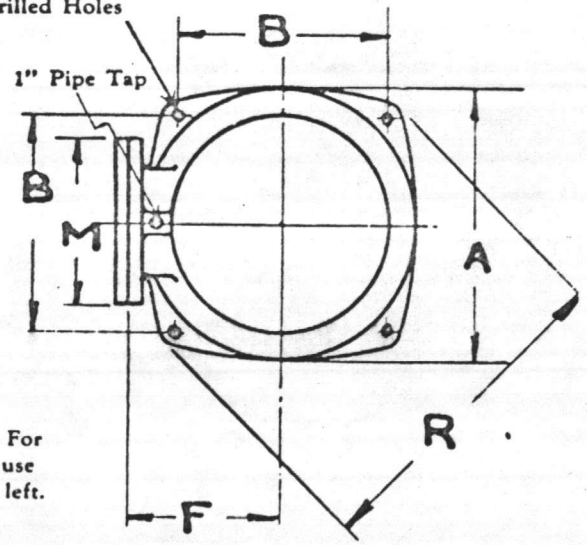
H.P. 641  
**DEMING VERTICAL TURBINE PUMPS**



AP 641

Recess for 1" casing extension. For well casing smaller than "K" use alternate arrangement shown at left.

4 - D Drilled Holes



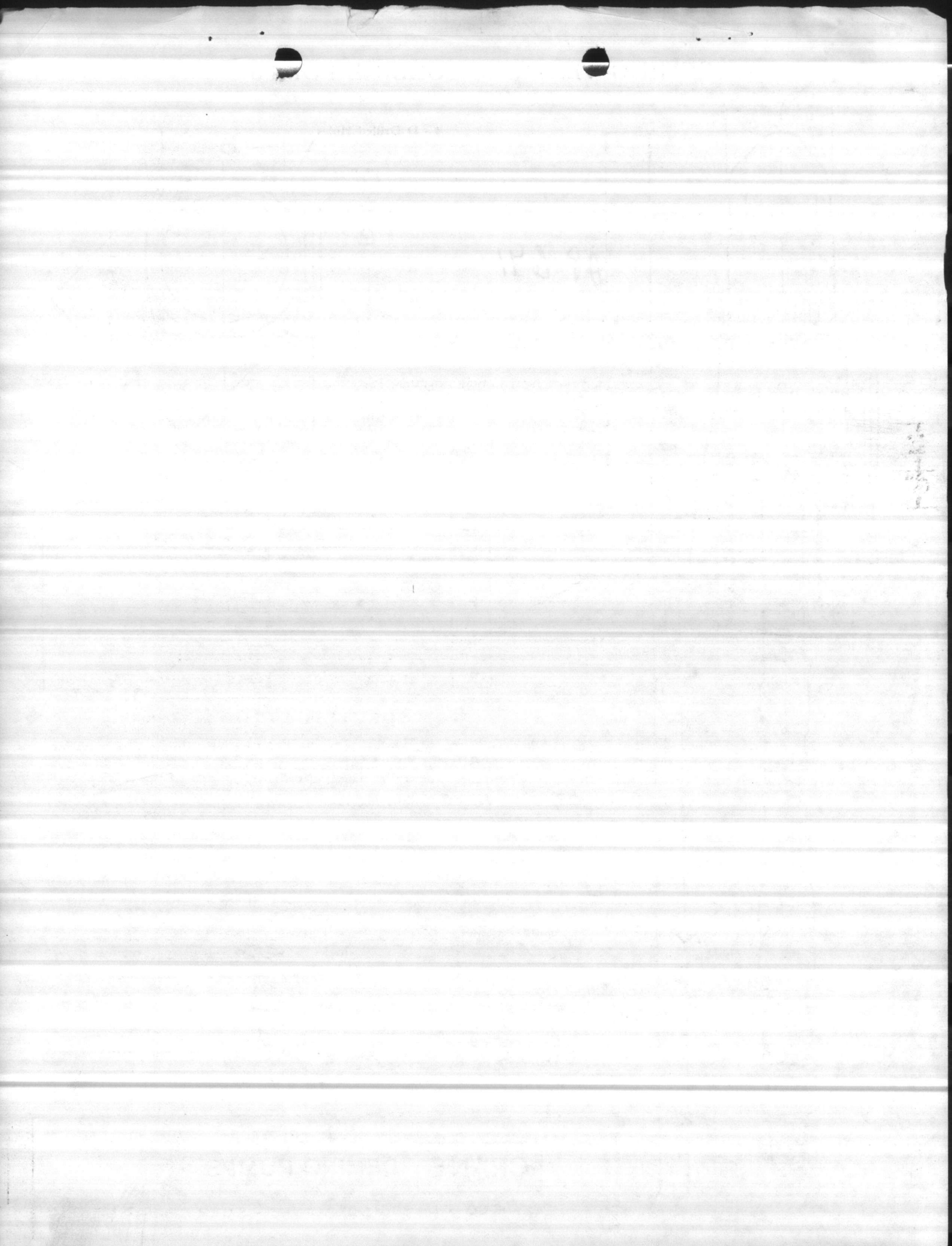
DIMENSIONS			
A	18"	S	15"
B	14 1/2"	T	12"
C	2"	U	25 1/16"
D	7/8"	V	43 13/16"
E	6"	W	7.39"
F	10 3/4"	X	7 1/2"
H	18 1/2"	Y	4' 4 3/4"
K	8"	Z	11' 3"
M	11"	CS	70' 0"
R	22 3/4"	OA	85' 7 3/4"

**SPECIFICATIONS**

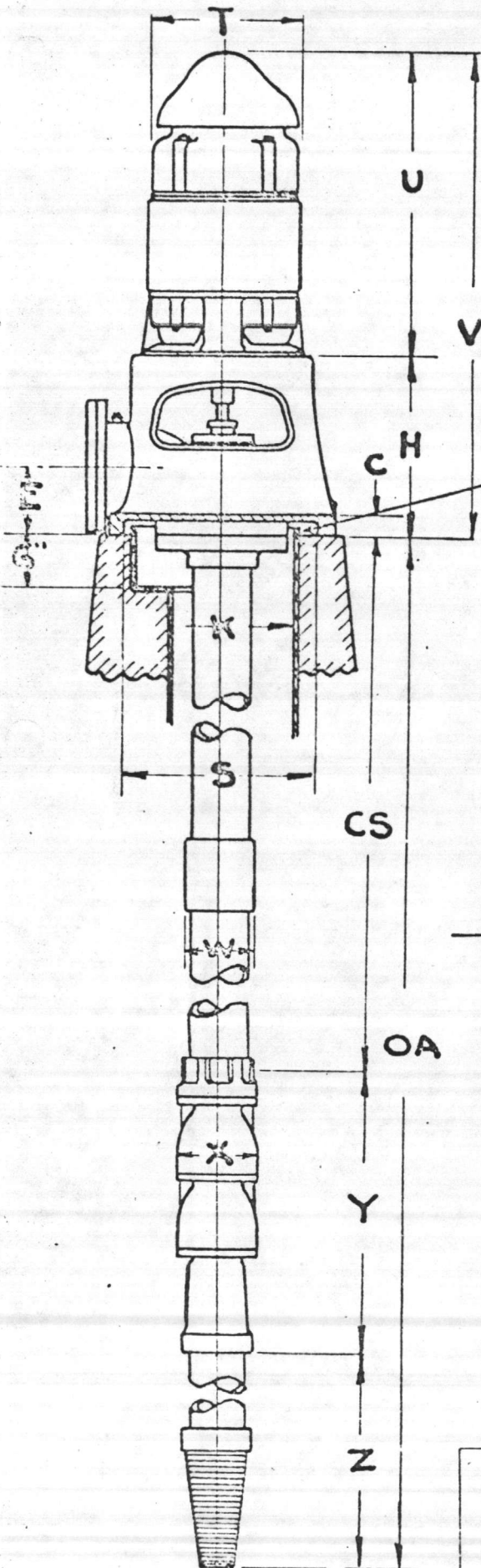
1 DEMING Fig. 4750 Vertical Turbine Pump designed for 315 GPM at 115 feet head, including: --  
15 HP 1800 RPM 230 Volt 3 Phase 60 Cycle  
TEFC Vertical Hollowshaft Motor with N31-2025SC  
Coupling  
 SD 66" 12 Surface Discharge Head with 6" inch discharge flange with bolts and gasket.  
70 feet 6" x 1 1/4" Column and shaft with oil lube Bronze Bearings on 10 foot centers  
5 Stage 8 inch SIZE Bowl Assembly using Impeller "A" from Curve P.C. 2567  
10 feet 5 inch steel suction pipe  
5 inch galv strainer

When properly endorsed this print is correct for  
CAMP LEJEUNE NC WELL # 641  
 Customer's P. O. \_\_\_\_\_ Turbine No. T- \_\_\_\_\_  
 Date 12-1-71 By RLR

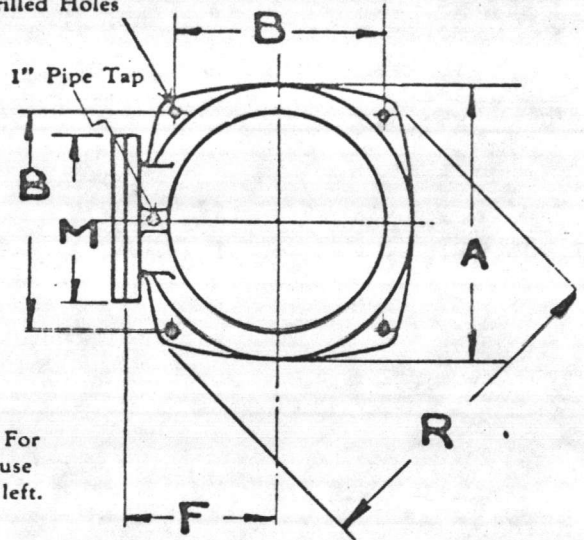
**CRANE DEMING PUMPS**



# DEMING VERTICAL TURBINE PUMPS



4 - D Drilled Holes



Recess for 1" casing extension. For well casing smaller than "K" use alternate arrangement shown at left.

### DIMENSIONS

A	18"	S	15"
B	14 1/2"	T	12"
C	2"	U	25 1/4"
D	7/8"	V	43 13/16"
E	6"	W	7.37"
F	10 3/4"	X	7 1/2"
H	18 1/2"	Y	4' 4 3/4"
K	8"	Z	11' 3"
M	11"	CS	70' 0"
R	22 3/4"	OA	85' 7 3/4"

### SPECIFICATIONS

1 DEMING Fig. 4750 Vertical Turbine Pump designed for 315 GPM at 115 feet head, including: --  
15 HP 1800 RPM 230 Volt 3 Phase 60 Cycle  
 TEFC Vertical Hollowshaft Motor with Non-reverse Coupling  
 SD 66" 12 Surface Discharge Head with 6" inch discharge flange with bolts and gasket.  
70 feet 6" x 1 1/4" Column and shaft with oil lube Bronze Bearings on 10 foot centers  
5 Stage 8 inch size Bowl Assembly using Impeller "A" from Curve P.C. 2567  
10 feet 5 inch steel suction pipe  
5 inch galv strainer

When properly endorsed this print is correct for

Camp Le Toune NC Well # 641

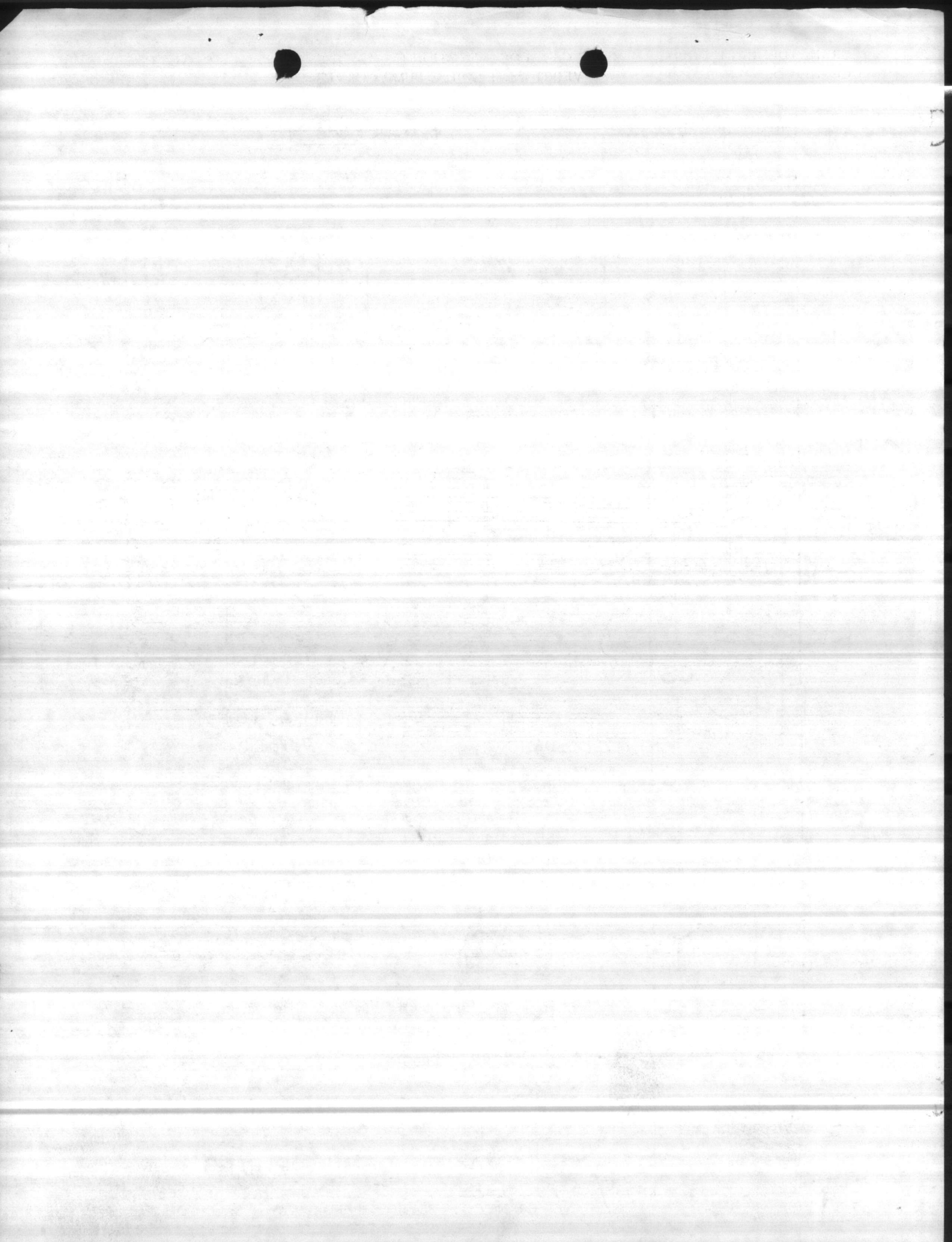
Customer's P. O. \_\_\_\_\_ Turbine No. T. \_\_\_\_\_

Date 12-1-71 By RLR

## CRANE DEMING PUMPS

CRANE CO • 884 SOUTH BROADWAY • SALEM, OHIO 44460

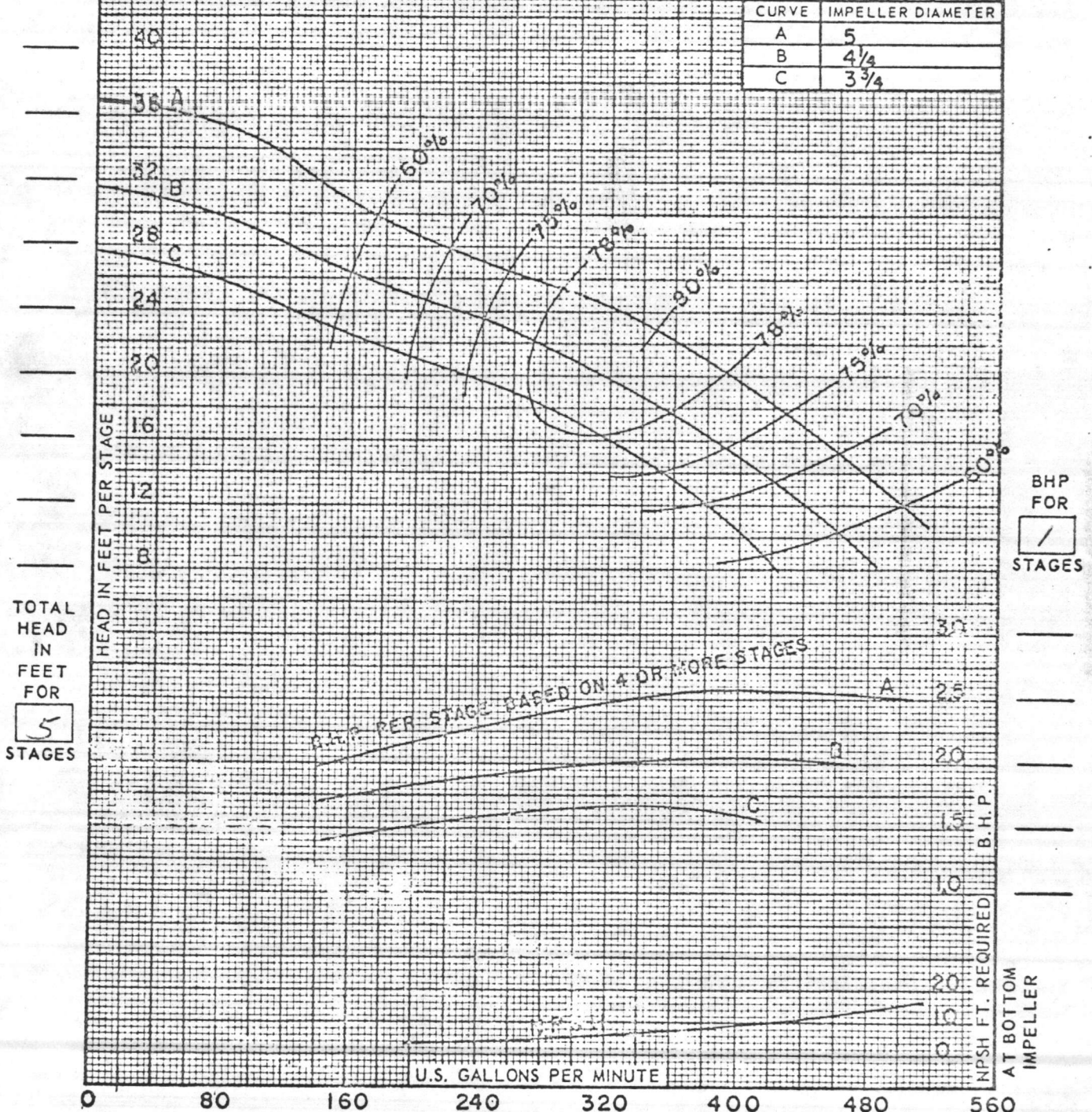




EFFICIENCY CHANGE:		DIMENSIONS		FIG. 4700	FIG. 4750
4	STAGE DEDUCT	0	POINTS	7 1/2	7 1/2
3	STAGE DEDUCT	1	POINTS	1 1/4	1 1/4
2	STAGE DEDUCT	2	POINTS	17 5/16	23
1	STAGE DEDUCT	3	POINTS	6 3/4	6 3/4
FOR ENAMELED BOWLS ADD		2	POINTS	THRUST FACTOR = 4.5	

SUCTION - I.D. PIPE SIZE 5 " SIZE COLUMN ADAPTER " 5 " OR 6 " ENCLOSED IMPELLER  
 FOR OVER 20 STAGES CHECK BOWL LIMITATION ENGINEERING SECTION NO. 27010

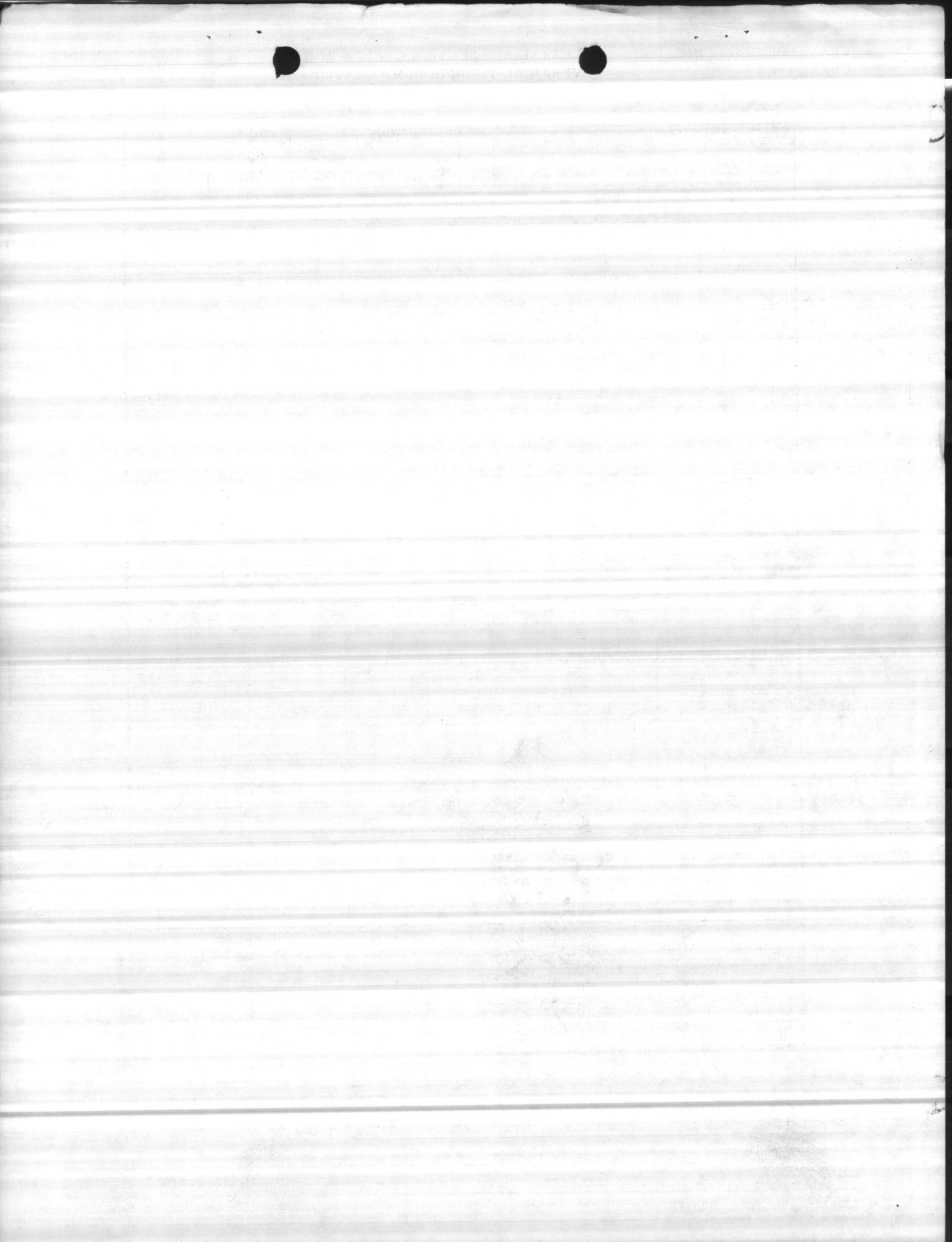
CURVE	IMPELLER DIAMETER
A	5
B	4 1/2
C	3 3/4



TOTAL HEAD IN FEET FOR **5** STAGES

BHP FOR **5** STAGES

Customer	Well # 641	C.No.	Capacity	315 gpm	Bowl Eff.	%	
Fig.	4750	Size	8"	Stages	5	Impeller	A
Column - Length	Size	Lineshaft Dia.	Column Friction	ft	Shaft Fric.	HP	
Motor - HP	RPM	Type Head	Bowl Head	ft	Total BHP		
S.O.	Serial	Date					

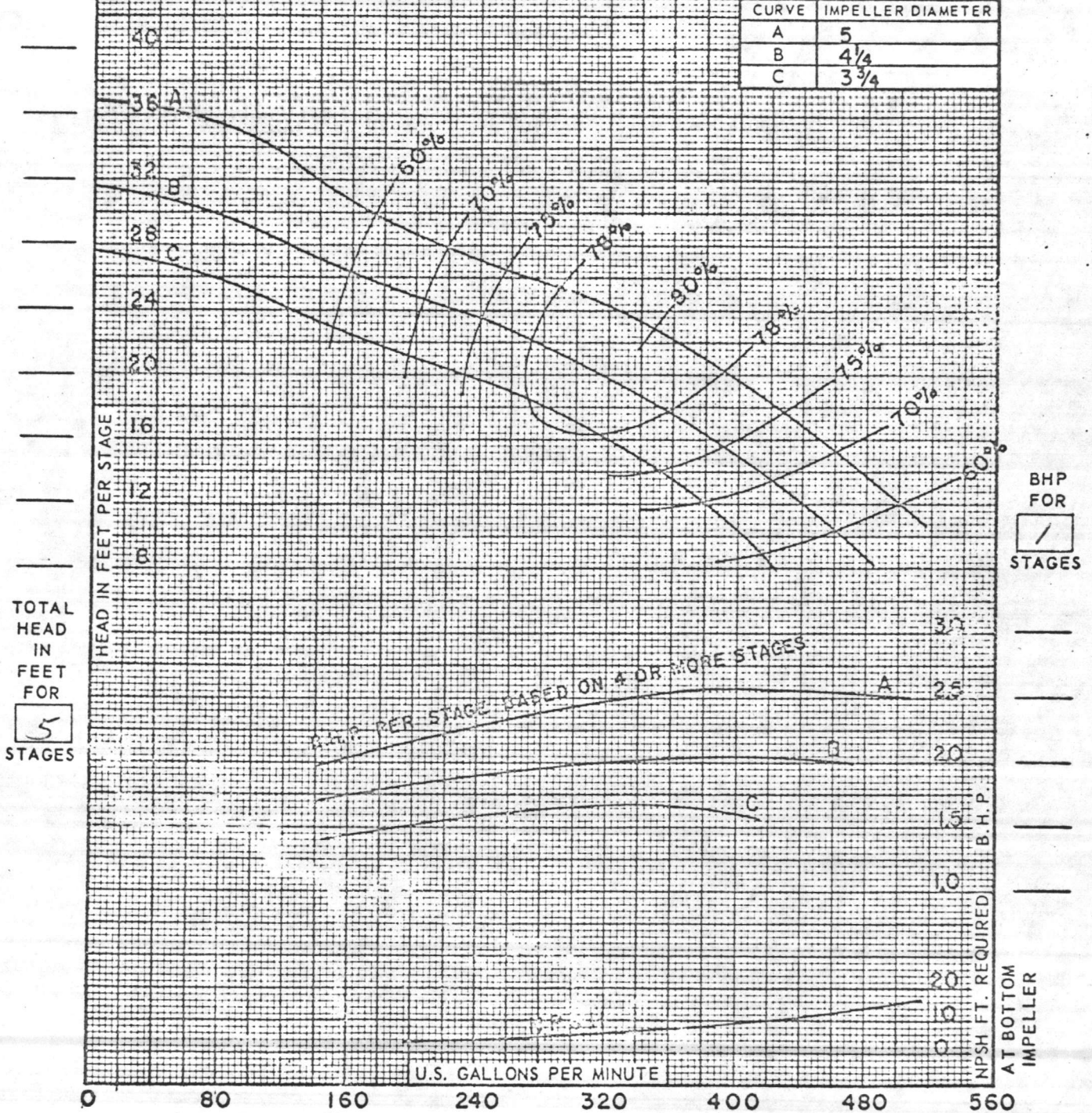




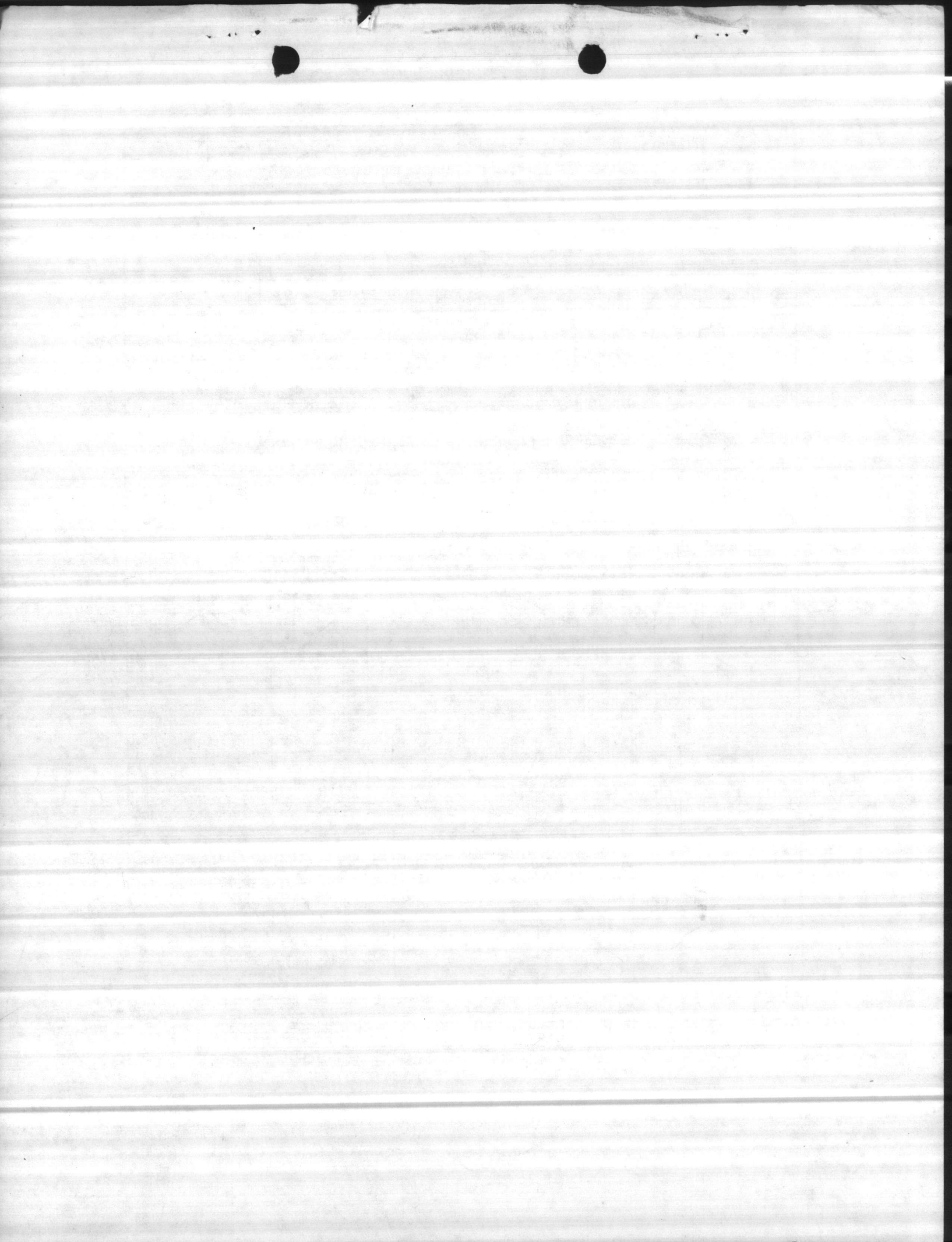
EFFICIENCY CHANGE:		DIMENSIONS		FIG. 4700	FIG. 4750
4	STAGE DEDUCT	0	POINTS	7 1/2	7 1/2
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SUCTION - I.D. PIPE SIZE 5 " SIZE COLUMN ADAPTER " 5 " OR 6 " ENCLOSED IMPELLER  
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CURVE	IMPELLER DIAMETER
A	5
B	4 1/4
C	3 3/4



Customer	Well # 641	C.No.	Capacity	315 gpm	Bowl Eff.	%	
Fig.	4750	Size	8"	Stages	5	Impeller	A
Column - Length	Size	Lineshaft Dia.	Column Friction	ft	Shaft Fric. HP		
Motor - HP	RPM	Type Head	Bowl Head	ft	Total BHP		
S.O.	Serial	Date					



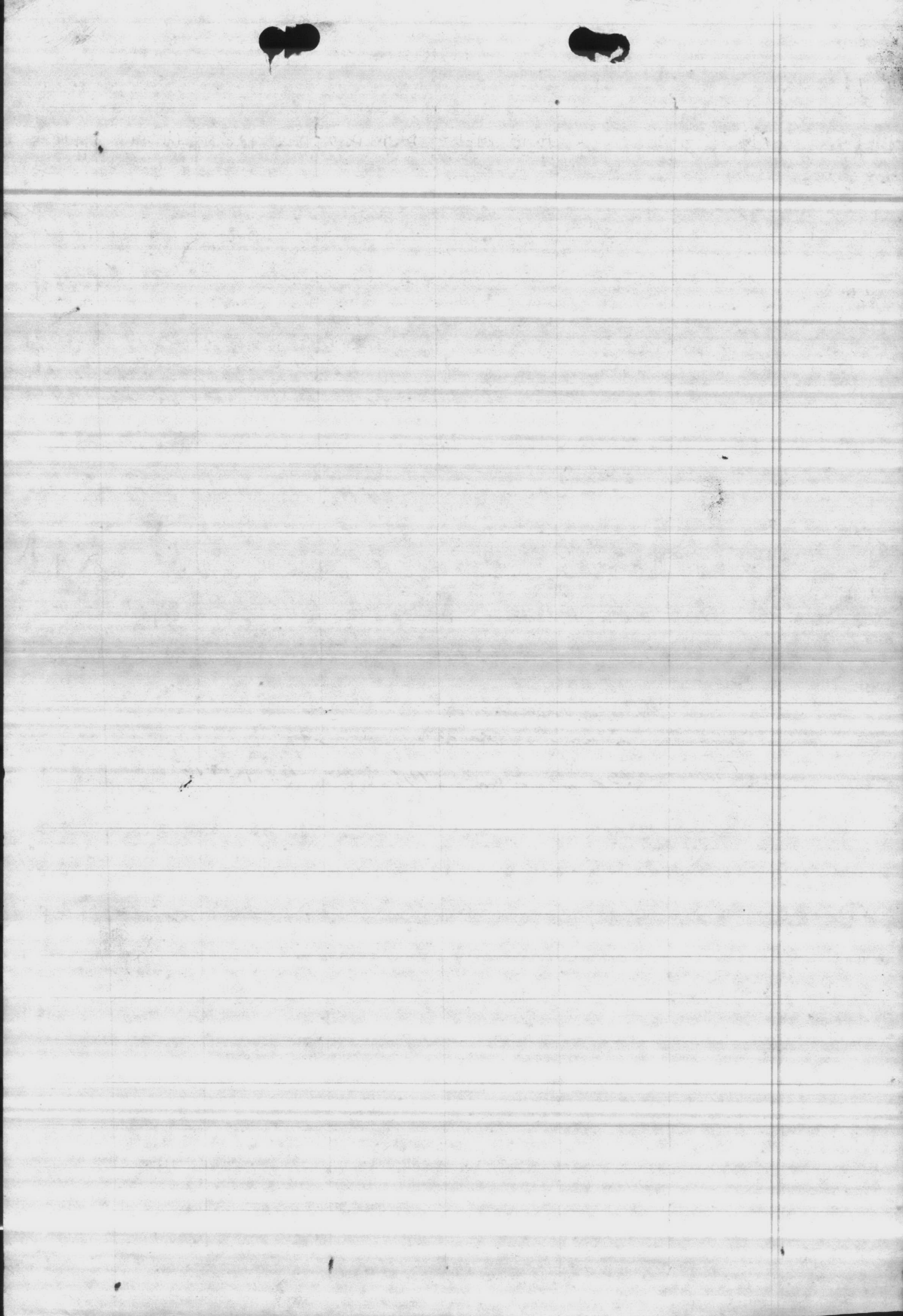


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DATE	AIR LINE	STATIC L.	PUMP LEVEL	DRAW DOWN	DISC PRESS.	GPM	TIME
7-26-82	108	32				start	1330
	108	32	44	12	47	104	1345
			48	16	44	125	1400
			51	19	41	140	1415
			53	21	38	157	1430
			57	25	35	183	1445
			62	30	30	222	1500

used direct reading gage  
 set at 30 PSI P/L 62 D/D 30 GPM 222





#18 Bldg 641

20 lb discharge pressure pumping level <sup>55</sup>~~54~~'

GPM 350

(25) lb pumping level 52' GPM 326

