Mitchell, Brian

From: Cook, Dan <dan.cook@dnr.iowa.gov>
Sent: Friday, February 08, 2019 1:43 PM
To: Mitchell, Brian
Subject: Re: City of Jefferson CIS 1,2 Dichloroethylene
Attachments: Municipal Well 4A w6088.jpg; Municipal Well 6A w6090.jpg; Municipal Well 9 w40476.pdf; Municipal Well 4A w6088.pdf; Municipal Well 10 w42013.jpg; Municipal Well w60.jpg; Municipal Well 6 w25602.pdf

Here are the well logs. These are available on line at:

https://www.iihr.uiowa.edu/igs/geosam/home

Daniel Cook | Environmental Specialist Senior
Iowa Department of Natural Resources
Contaminated Sites Section
502 E. 9th St., Des Moines, IA 50319
P 515-725-8371 | F 515-725-8202
www.iowadnr.gov

RCRA 2/8/2019
580436

On Thu, Feb 7, 2019 at 11:37 AM Mitchell, Brian <Mitchell.Brian@epa.gov> wrote:

Can you get me any muni well logs? I am also interested in the two muni wells north of the city too.

The reason I say this is because we tried to take down-gradient GW samples from the former Electrolux site via DPT that showed nothing but we could not push down as far as we wanted and secondly, we installed a couple of roto-sonic drilled/completed wells down-gradient in the same areas as well and did not find anything. Would like to compare logging data.

Also, can you list any other former or operating facilities that may be responsible for the muni well contamination?

Brian Mitchell

RCRA Corrective Action Officer

EPA Region 7

AWMD/WRAP

2.3 – P44

11201 Renner Blvd

Lenexa, Kansas 66219

913-551-7633 work

816-304-4158 cell

From: Wilken, Keith <keith.wilken@dnr.iowa.gov>
Sent: Wednesday, February 06, 2019 9:12 AM
To: Mitchell, Brian <Mitchell.Brian@epa.gov>
Cc: Jefferson Water Plant <jeffwaterplant@hotmail.com>; Dan Cook <dan.cook@dnr.iowa.gov>; Amie Davidson <amie.davidson@dnr.iowa.gov>
Subject: Re: City of Jefferson CIS 1,2 Dichloroethylene

Brian,

According to the information I obtained from our website https://programs.iowadnr.gov/sourcewater/SystemDetail.aspx?pwsid=3742004

Well #4 - Total depth of ~150 feet. The bottom 30 feet is screened.

Well #6 - Total depth of 160 feet. 15' of screen from approximately 142' to 157'.

Well #9 - Total depth of 159 feet. I couldn't find any information on the screen.

The City of Jefferson and the DNR's Contaminated Sites Section are copied on this e-mail in case they have additional information regarding the wells.

Keith

On Wed, Feb 6, 2019 at 9:01 AM Mitchell, Brian <Mitchell.Brian@epa.gov> wrote:

How deep are the wells? Screened at what depth intervals?

Brian Mitchell

RCRA Corrective Action Officer

EPA Region 7

11201 Renner Blvd

Lenexa, Kansas 66219

913-551-7633 work

816-304-4158 cell

From: Wilken, Keith <keith.wilken@dnr.iowa.gov>
Sent: Wednesday, February 06, 2019 8:01 AM
To: Mitchell, Brian <Mitchell.Brian@epa.gov>
Cc: Jefferson Water Plant <jeffwaterplant@hotmail.com>
Subject: Re: City of Jefferson CIS 1,2 Dichloroethylene

Those are the 2 year, 5 year, and 10 year capture zones for the wells. The Geological Survey Bureau has estimated how far the wells will pull water from within 2 years, 5 years, and 10 years.

On Tue, Feb 5, 2019 at 9:37 AM Mitchell, Brian <Mitchell.Brian@epa.gov> wrote:

What are the completion zones for Muni Wells 4, 6, 9, and 10?

Brian Mitchell

RCRA Corrective Action Officer

EPA Region 7

AWMD/WRAP

2.3 – P44

11201 Renner Blvd

Lenexa, Kansas 66219

913-551-7633 work

816-304-4158 cell

From: Wilken, Keith <keith.wilken@dnr.iowa.gov>
Sent: Friday, February 01, 2019 2:26 PM
To: Mitchell, Brian <Mitchell.Brian@epa.gov>
Cc: Jefferson Water Plant <jeffwaterplant@hotmail.com>
Subject: City of Jefferson CIS 1,2 Dichloroethylene

Brian,

Good afternoon. Thank you for the telephone conversation this afternoon.

I have attached an aerial photograph from Jefferson's Phase II Source Water Protection Plan. This photograph depicts the locations of the 4 town wells in Jefferson.

The most recent sampling results from the wells were on 6/7/2017.

Well #4 yielded 0.00725 mg/L

Well #6 yielded 0.00092 mg/L

Well #9 yielded 0.0177 mg/L

Well #10 was <0.0005 mg/L

The most recent finished water (as the water leaves the treatment plant) sampling results are;

0.00131 mg/L on 12/4/2017

0.00163 mg/L on 4/2/2018

0.00147 mg/L on 10/9/2018

It would be greatly appreciated if you could keep us updated on the status of your investigation. Do not hesitate to let either myself or the City of Jefferson know if you need anything further.

Keith

---------- Forwarded message ---------
From: <DNRATLPRN02@iowa.gov>
Date: Fri, Feb 1, 2019 at 2:13 PM
Subject: Message from "DNRATLPRN02"
To: Keith Wilken <keith.wilken@dnr.iowa.gov>

This E-mail was sent from "DNRATLPRN02" (MP C4504ex).

Scan Date: 02.01.2019 14:11:08 (-0600)
Queries to: DNRATLPRN02@iowa.gov

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Keith Wilken | Environmental Specialist Senior
Iowa Department of Natural Resources
P 712-243-1934 | F 712-243-6251 |1401 Sunnyside Ln., Atlantic IA 50022
www.iowadnr.gov

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Iowa Department of Natural Resources
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www.iowadnr.gov

WELL LOG

Feet		Feet	Description
0	to	4	Fill
4	to	6	Black dirt
6	to	17	Yellow clay, gravel
17	to	61	Gray clay
61	to	110	Dark gray clay, pebbles
110	to	127	Gravel, pebbles
127	to	150	Fine - coarse sand
150	to	155	Fine to coarse sand, clay
155	to	156	Gray clay
156	to	159	Fine - coarse sand
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		
	to		

Well Test Data: Static Level 127 ; pumping level 145 after 6 hours pumping at 264 g.p.m.

Length of test 6 hrs. See Well Test Data Sheet Dated

REMARKS:

Well was developed 4 times w/100 lb. P-4 treatment.

Test #4A E. of deep well 60' - S. 10' May 14, 1953

HW-6088

0 - 5	Top soil
5 - 14	Yellow clay
14 - 30	Soft blue clay
30 - 45	Soft blue clay and gravel
45 - 50	Blue clay
50 - 65	Gray clay with gravels
65 - 110	Sandy blue clay
110 - 116	Sand and clay
116 - 122	Coarse sand and gravel, little clay
122 - 136	Coarse sand, gravel and boulders
136 - 140	Medium coarse sand, little gravel
140 - 156	Tite (cemented) medium to fine sand
156 - 160	Blue clay, hard, little sandy

H_2O - 103'

WELL SCHEDULE

US GEOLOGICAL SURVEY

IOWA DISTRICT WRD

WELL NO 083-30W-08BBC CO GREENE

OWNER JEFFERSON CITY TEST #4-A ADDRESS JEFFERSON, IOWA

DRILLER LAYNE WESTERN DATE DRLD MAY 14, 1953

MAP 1:63,360 COUNTY HWY.

SOURCE OF DATA FILE

DESCRIPTION M P LSD FEET (ABOVE) (BELOW) LSD 105B FT.

MASTER CARD - A 9-26-69

STATE	COUNTY	LATITUDE DEG	LATITUDE MIN	LATITUDE SEC	N or S	LONGITUDE DEG	LONGITUDE MIN	LONGITUDE SEC	NO SEQ
19	37	42	01	13	N	094	22	23	1

CONTINUED FROM ABOVE

ACCURACY	LOCAL WELL NUMBER T	R	E/W	SEC	QUARTERS	LOCAL USE W-NUMBER	OPTIONAL	OWNER OR NAME	OWNERSHIP	WATER USE	WELL USE	WELL DATA	FREQ W/L	YIELD CHAR	LAB	HYD DATA	QW-FREQ	PUMPAGE	APERTURE	LOG DATA	CARD DESIG
2	083	30	W	08	BBC	060888	// 53 CITY T4	JEFFERSON IOWA	M	U	T	2	Ø							GD	A

WELL-DESCRIPTION CARD - B

DUPLICATE CARD A CC 1-19	DEPTH OF WELL	ACCURACY	DEPTH CASED OR FIRST PERF	DIAM INCHES	WELL FINISH METH DRILLED	YEAR DRILLED	PUMP SETTING	METH LIFT	DEEP SHALLOW	POWER	ALTITUDE OF LSD (FEET)	ACCURACY	WATER LEVEL (FEET)	ACCURACY	DATE MONTH	DATE YEAR	YIELD OF WELL (GPM)	METH DET	DRAW-DOWN (FEET)	ACCURACY	PUMPING PERIOD (HOURS)	QUALITY OF WATER IRON	SULF	CHLOR	HARD	SP COND	TEMP	DATE SAMPLED	CARD DESIG.
	160	3				953					1058	7	103	D	55	3													B

HYDROGEOLOGIC CARD - C

DUPLICATE CARD A CC 1-19	PHYS-IOG-RAPHY PROV.	SEC.	DRAINAGE BASIN	SUBBASIN	TOPO SETTING	MAJOR AQUIFER SYSTEM	SERIES USGS	SERIES IGS	UNIT	LITH-OLOGY	ORIG.	THICK-NESS	LENGTH WELL OPEN TO	DEPTH TO TOP OF	MINOR AQUIFER SYSTEM	SERIES USGS	SERIES IGS	UNIT	LITH-OLOGY	ORIG.	THICK-NESS	LENGTH WELL OPEN TO	DEPTH TO TOP OF	DEPTH TO CONSOLI-DATED ROCK	SOURCE	DEPTH TO BASEMENT	SOURCE	SURF MAT LITH-OLOGY	SURF MAT INFIL	COEF TRAN SIG FIG	COEF TRAN XIO	COEF STOR SIG FIG	COEF STOR XIO	GEOL CARDS CARD DESIG
	12	B	25	A			QG	GX			RO			102														CT	4					C

CASING AND SCREEN (SIZE, TYPE, INTERVALS):

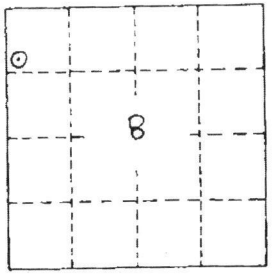
No Data.

CODED BY D. AARONSON DATE 31 JULY 1970

PUNCHED BY _____ DATE _____

VERIFIED BY _____ DATE _____

SKETCH ON REVERSE: YES _____ NO ✓



WELL NO 083-30W-08BBC

6088

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey
RECORD OF WELL

Location: E of deep well 60' & S. 10'
(N E)
Town: Jefferson (S W) :County Greene
E.
SW NW-NW sec. 8 T. 83 N., R. 30 W. Twp.

Well name and number Jefferson Town Test No. 4-A (5153)

Owner → Address

Tenant Address

Contractor Layne-Western Co. Address

Drillers L. Peterson

Drilling dates May 14, 1953

Well data:
Altitudes: Drilling curb feet; Land surface feet

Determined by

Topographic position

Total depth: Reported feet, Measured feet

Drilling method

Hole and casing data

Original depth to water 103 ft. above below Date

Source of data

Sources of water: Principal

Others

Production Data

Date				
Static water level				
Measuring point				
Pumping water level				
Yield (g. p. m.)				
Duration of pumping				
Specific capacity				

Pump Data

Type pump _____ Column diameter and length _____

Cylinder or bowls diameter and length _____

Suction pipe _____ Airline _____

Power _____ Production _____ g. p. m. for _____ hours per day

Use of water _____

Dissolved constituents and properties (in parts per million except as indicated)

Date sampled				
Sampled by				
Silica (SiO_2)				
Iron (Fe)				
Manganese (Mn)				
Calcium (Ca)				
Magnesium (Mg)				
Potassium (K)				
Sodium (Na)				
Carbonate (CO_3)				
Bicarbonate (HCO_3)				
Sulfate (SO_4)				
Chloride (Cl)				
Fluoride (F)				
Nitrate (NO_3)				
Dissolved solids				
Hardness (as $CaCO_3$)				
Total				
Grains per gallon				
Noncarbonate				
Alkalinity (as $CaCO_3$)				
pH				
Specific conductance (micromhos at 25°C)				
Temperature (°F)				
Analysis No.				

Laboratory Data

LOCATION — EB8-2

Well No. W. 6088 Sample range 0-160 No. of samples 32

No. of dupls. and cond. 32 Good Washed range —

Samples prepared by Pakinsky & DeRoma Date 7/27/53

Logged by Northup Date 9/14/53

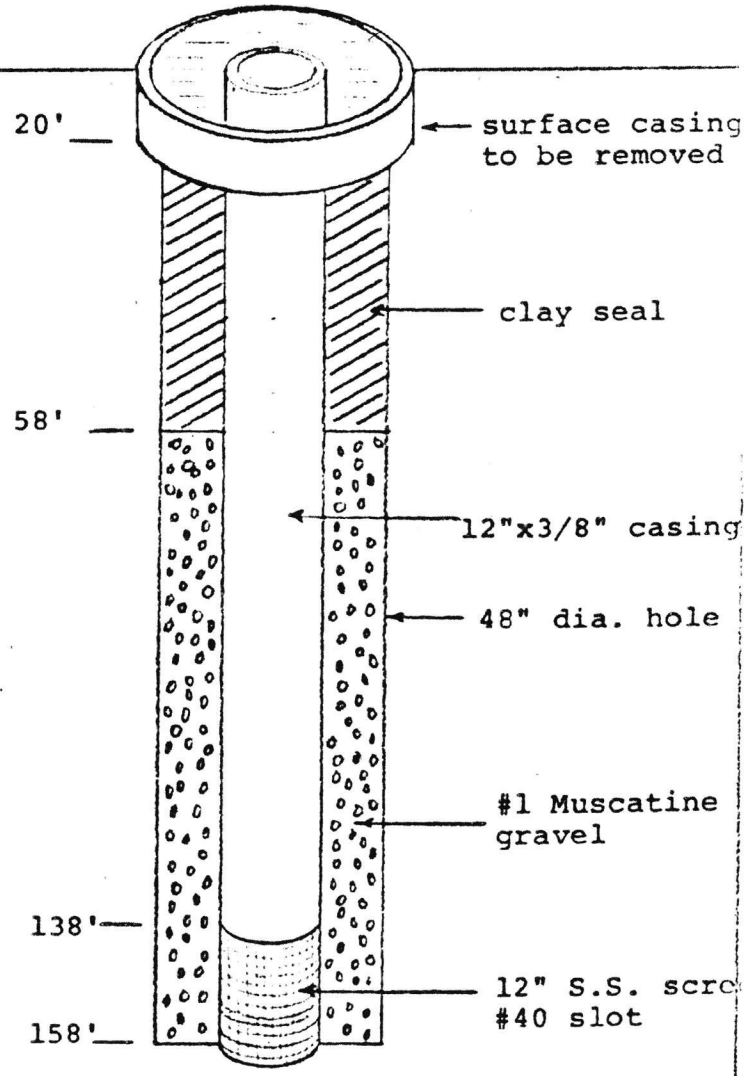
Correlations by Northup Date 9/14/53

DETAIL OF WELL CONSTRUCTION
WELL NO. 6
CITY OF JEFFERSON, IOWA

GEOLOGICAL LOG

BLACK SANDY FILL	5'
BROWN & GRAY TILL	36'
GRAY SHALE	58'
TILL & CLAYEY SAND	77'
GRAY TILL	108'
FINE MEDIUM BROWN SAND	114'
FINE-COARSE GRAY SAND WITH CLAY LENSES	130'
FINE-MEDIUM GRAY SAND	158'

CONSTRUCTION DETAIL



Layne - Western Company, Inc
705 South Duff Avenue
AMES, IOWA 50010

HORPE WELL COMPANY

2340 SIXTH AVENUE
DES MOINES, IOWA

1979

Drilled for City of Jefferson at Jefferson, Iowa

Well is located ____ miles N-E-S-W and ____ miles N-E-S-W from ____

in the ____ ¼ ____ ¼ Section ____ Township ____ Range ____

Drilling started ____ 19__ Completed ____ 19__

New depth 157*

Well No. 6 Kind of Well Gravel Pack Depth 154' Size hole started 30 in

Add 3' above ground

Finish 30 G. P. M. ____ Static Head ____ Pumping level from surface ____

Water was first encountered at 115 in Gravel Approx. Amt ____ Temp. ____

Remarks ____

(GIVE DETAILS OF PERFORATED PIPE AND SEALS)

RECORD OF PERMANENT PIPE					TEMPORARY PIPE	
SIZE PIPE	AMOUNT OF PIPE	DEPTH TO BOTTOM OF PIPE	DEPTH TO TOP OF PIPE	MAKE OF PIPE	SIZE PIPE	AMOUNT
12"	~~144~~ ~~141'~~ 142'	142* 139'	+2 +5*	Blk. .375 wall		
add 3' above ground						
12"	15'	157* 154'	142* 139'	Johnson Stainless steel .060 slot		

* MEASURED from top of PUMP BASE

Driller Douglas McIntosh From Surface to 160 feet

Driller ____ From ____ feet to ____ feet

Driller ____ From ____ feet to ____ feet

AMOUNT IN FEET	KIND OF SOIL OR FORMATION (BE SPECIFIC)	TOTAL DEPTH FEET
2'	Sandy fill	2
4'	Blk. top soil	6
12'	Yellow till	18
27'	Gray till	45
21'	Gray shale	66
5'	Gray sandy till	71
17	Coarse to med. gravel w/t clay lenses	88
24	Gray till	112
7	Med. to coarse sand	119
16	Fine coarse gravel	135
6	Fine to med. sand	141
13	Fine sand	154
6	Gray clay	160

MPELLER NO. 8H71 .TYPE ENCLOSED .DIAMETER : A 6.313 ", B 5.2662 ", C _____ ", D _____ ",

FFICIENCY CORRECTION: ONE STAGE DEDUCT 4 %, TWO STAGE DEDUCT 2 %, THREE STAGE DEDUCT 1 %, FOUR STAGE DEDUCT 0 %

FFECTIVE EYE AREA 11.86 sq. inches. NUMBER OF VANES 6 . THRUST CONSTANT K 4.0 lbs./ft. of head. WEIGHT 3 lbs.

WR^2 .086 lbs. ft.2. EYE FLUID VELOCITY CK .027 ft./sec./GPM. PERIPHERAL VELOCITY 7.68 ft./sec./inch of impeller dia.

BOWL DATA

BOWL NO. 8KH3 . CONNECTION TYPE BOLTED . NOMINAL DIAMETER (E) 7-3/4 ". MINIMUM DIAMETER (E) 7-21/32 ".

COLUMN PIPE SIZE 6 "STANDARD, 6 "MAXIMUM, 6 "MINIMUM. SUCTION PIPE SIZE 6 "STANDARD, 6 "MAXIMUM.

UMP SHAFT DIAMETER 1 "STANDARD, 1 ¼ "MAXIMUM. LATERAL 7/16 "STANDARD, 7/16 "MAXIMUM.

SHAFT BEARING CLEARANCE .010 . IMPELLER SKIRT CLEARANCE .015 . MAXIMUM NUMBER OF STAGES 16 (std. construction).

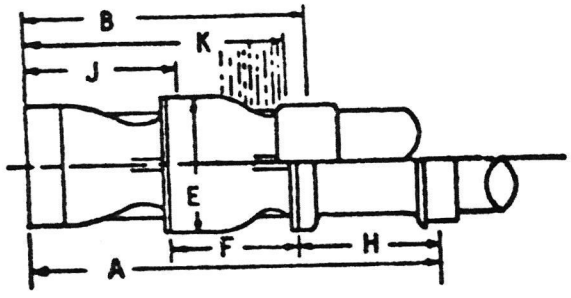
MAXIMUM HEAD 800 ft. (std. construction). MAXIMUM SPHERE SIZE ½ ".

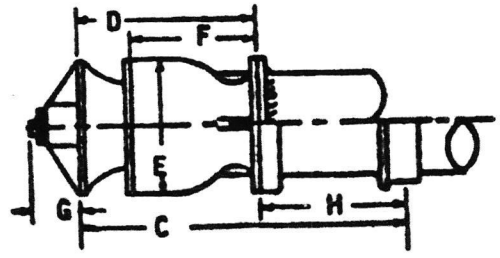
PROJECTIONS ABOVE COLUMN PIPE BUTT: TUBE 6"; SHAFT 14" - FOR EITHER OPEN OR ENCLOSED LINESHAFT.

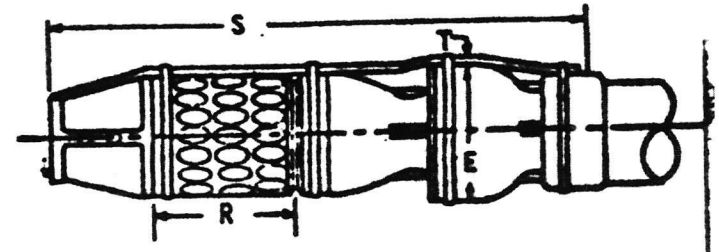
DIMENSIONS

A-Length one stage assembly with discharge bowl.
B-Length one stage assembly less discharge bowl.
C-Length one stage assembly with discharge bowl and bell.
D-Length one stage assembly less discharge bowl with bell.
E-Bowl Diameter.
F-Length of additional stage.
G-Hub projection on bell suction.
H-Length of discharge bowl.
J-Length of impeller eye above bottom of bowl.
K-Minimum required submergence.
R-Length submersible suction inlet.
S-Length one stage submersible assembly.
T-Height of cable guard.

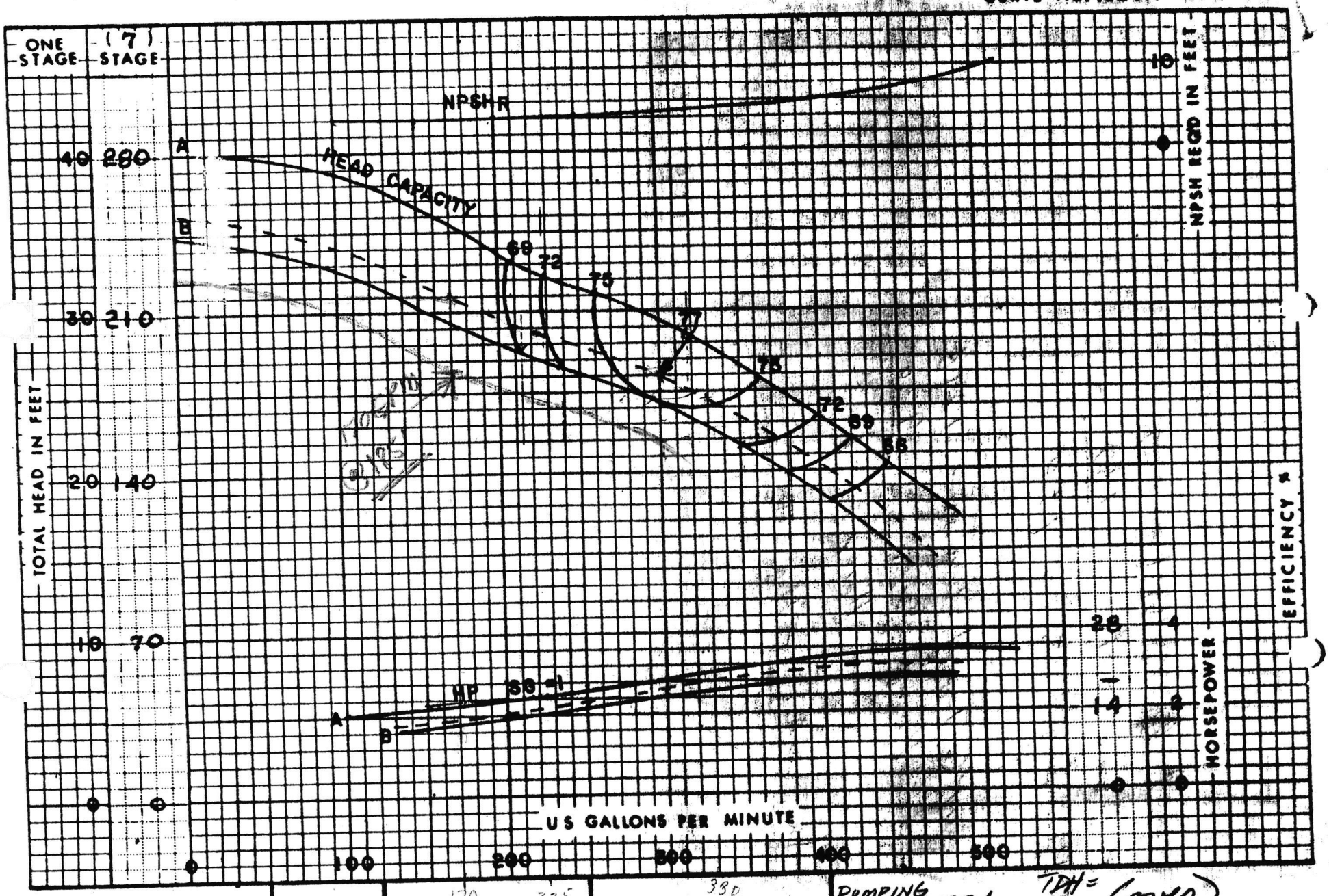
DIMENSION	A	B	C	D	E	F	G	H	J	K	R	S	T
INCHES	21-7/8	14-13/16	16	8-9/16	7-3/4	5-5/8	5-9/16	7-7/16	8-3/16	24	7-3/4	31-3/16	5/8







CURVE NO. 1825IT d79



Valley Pump Company
DIVISION OF VALLEY INDUSTRIES, INC.
Lubbock, Texas

8"

8 HHE
ENAMELED

170 225 380

1760 RPM

PUMPING LEVEL 137' TDH = (over)
BELOW THORPE WELL
GRND. GE JEFFERSON IOWA J B

FORM NO. 79—In stock and for sale by Ross-Martin Co., Tulsa. W-6088

STATE IOWA	JEFFERSON (GREENE)
SW NW NW	JEFFERSON TOWN TEST #4-A
SEC. 8	
TWP. 83N RGE. 30W	COMMENCED MAY 14, 1953 COMPLETED
	LAYNE-WESTERN CO.-L. PETERSON
	CASING RECORD
	LOGGED SEPT. 14, 1953 BY NORTHUP
EL 1058	REMARKS
TD 160'	SWL 103'
OT	
EB8-2	

PLEIS

50

100

150

SOIL GR., SILTY
TILL YELLOW, OXIDIZED, UNLEACHED

CLAY (OR SILT) GR., NON CALC.
TILL LT. GR., CALC.
TILL GR., SILTY
GRAVEL, CRSE. A-r, SU. CLAYEY

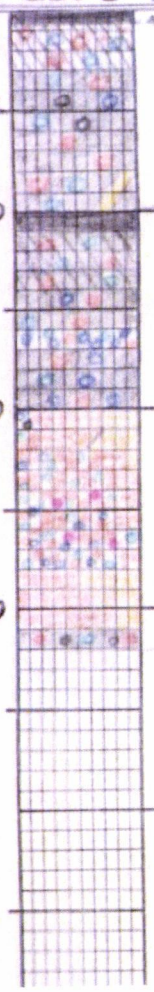
TILL GR. SILTY
TILL GR. CLAYEY - SCATTERED PEBBLES

TILL GR.; GRAVEL CRSE. A-r, CLAYEY
GRAVEL A-Tag. A-a; SAND MED. CRSE. A-a SU. CLAYEY
GRAVEL CRSE. To ½" A-a, DIRTY, CLAYEY

TILL GR. V. SDY., PEBBLY
GRAVEL CRSE. To 3 MM LT. GR. CRSE. A-a, DIRTY
GRAVEL ½"; SAND MED. CRSE. Tag; V. DIRTY
GRAVEL ½"; SAND MED. CRSE. Tag; CLEANER THAN ABOVE SU. DIRTY
OIL
TILL GR., V. SDY., PEBBLY

FORM NO. 79—In stock and for sale by Ross-Martin Co., Tulsa. W-6090

STATE IOWA	JEFFERSON (GREENE)
SW NW SE	JEFFERSON TOWN TEST #6-A
SEC. 8	
TWP. 83N RGE. 30W	COMMENCED MAY 1953 COMPLETED
	LAYNE-WESTERN CO.-L. PETERSON
	CASING RECORD
	LOGGED SEPT. 15, 1953 BY NORTHOP
EL 1066	REMARKS
TD 160'	SWL 100'
EB8-3	



SOIL GR.
TILL YELLOW, OXIDIZED, UNLEACHED

TILL GR. UNOXIDIZED, UNLEACHED

LEIS.

TILL GR. SILTY

50

SOIL GR CLAY GR. NOT CALC.
TILL YELLOWISH GR., CALC., SLI. OXIDIZED

TILL LT. GR. UNOXIDIZED, UNLEACHED

GRAVEL A-To ¼" a - MOSTLY DOL PEBBLES
TILL GR. UNOXIDIZED, UNLEACHED

100

GRAVEL, SAND GR. GR. CASE. To ¼", A.
GRAVEL & SAND LT. GR. CASE. To ¼", A, CLAYEY
GRAVEL CASE. a-p, SD. LT. GR. CASE. To ¼, A. DIRTY, CLAYEY
GRAVEL & SAND, CASE. A, a - SAME P, DIRTY CLAYEY

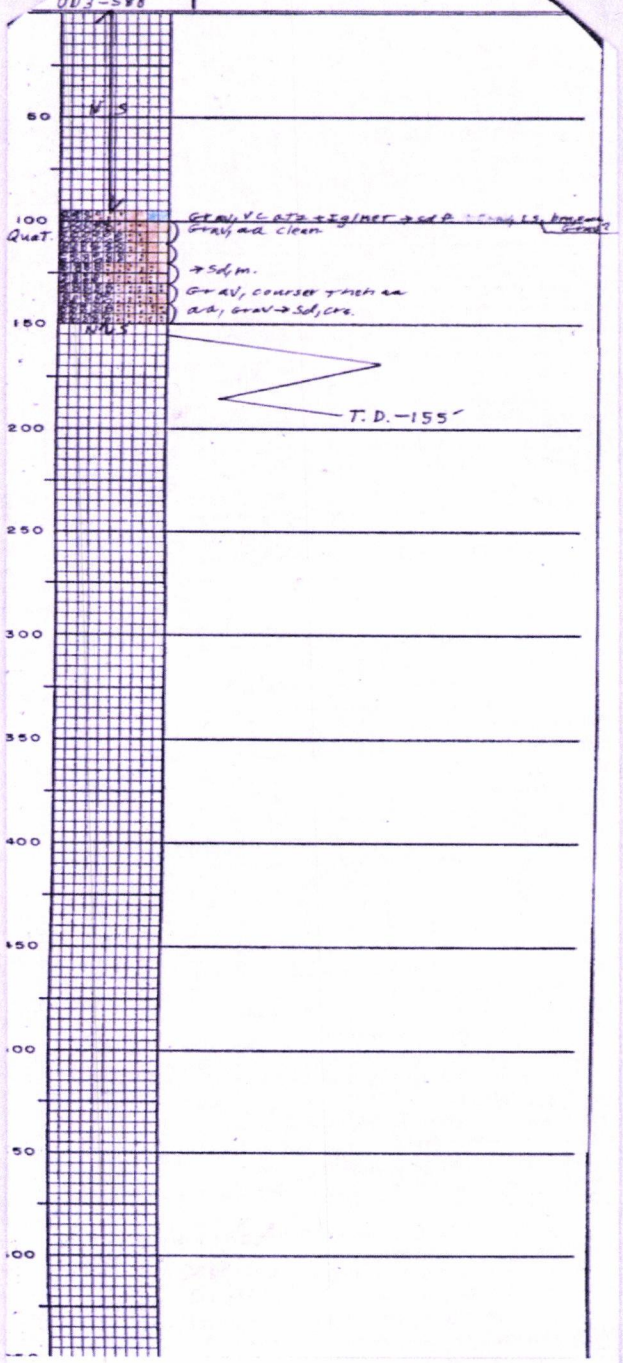
GRAVEL CASE. a-p. SLI. DIRTY, CLAYEY
GRAVEL GR. SD. GR. CASE, A - SLI. DIRTY
SAND GR. CASE. To ¼" A-a

150

TILL GR.
TD 160'

IOWA GEOLOGICAL SURVEY W-42013

STATE: Iowa
TOWN: Jefferson
COUNTY: (Greene)
OWNER: Jefferson, City of #10
NW, NW, SE, NE, SE
SEC. 7
TWP. 83N
RGE. 30W
COMMENCED: 11/6/96
COMPLETED:
DRILLER:
CASING RECORD: 12" 0'-125' Steel
LOGGED: 5/13/10
BY: M.J. Bounk
EL. 1068'
T.D. 155'
SWL ____ PL ____ @ ____ GPM
MAIN WATER
REMARKS
S.N. OD3-588



FORM NO. 78 — In stock and for sale by Mid-West Prtg. Co., Tulsa

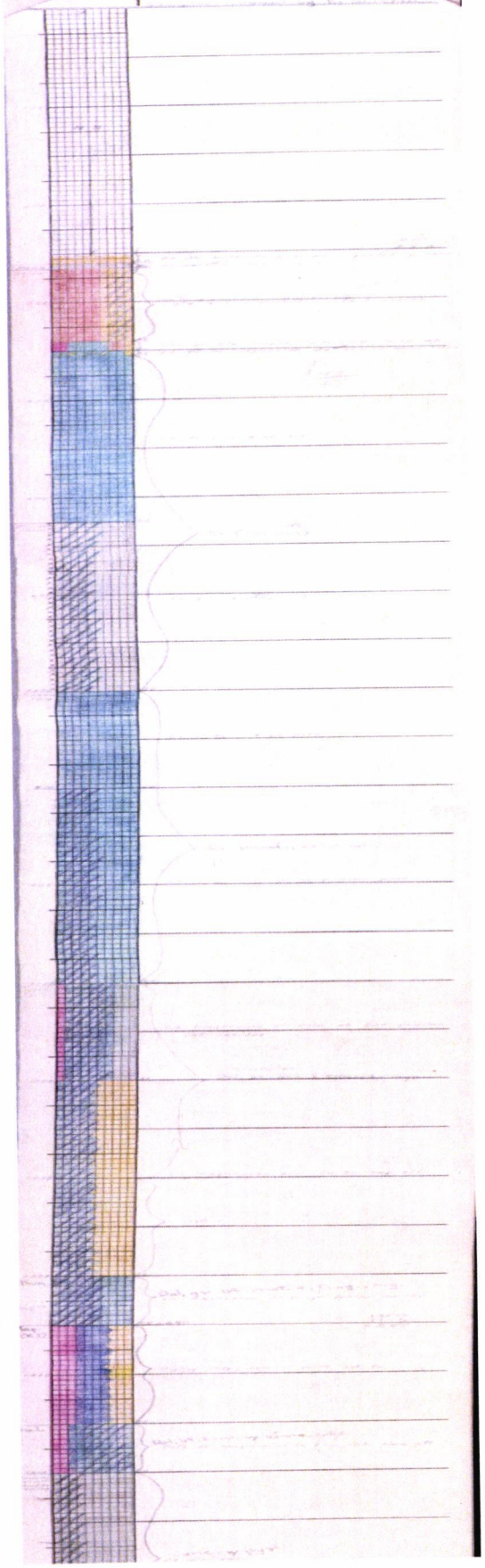
STATE

SEC.

TWP. RGE

COMMENCED COMPLETED

CASING RECORD

LOGGED BY

REMARKS