WRD Exp. (G4)
Aug, 1964

Punched FCH
Verified PMJ

U. S. DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

Water Resources Division Well Schedule Form

MASTER CARD

Record by D.AARONSON Source of data FILE Date 7/20/65 Map COUNTY HWY 1:63,360

State IOWA 16 County (or town) POTTAWATTAMIE 78

Latitude: 412306N Longitude: 095132 Sequential number: 1

Lat-long accuracy: 2 T. 77 N S, R 38 W E Sec 9 SWSE¼ SE¼ NW¼ 5

Local well number: 077381W09bddc Other number: W-0747 B&M

Local use: 077473 8CITY Owner or name: WALNUT HULE 9

Owner or name: WALNUT IOWA Address: WALNUT, IA

Ownership: (C) County, (F) Fed Gov't, (M) City, (N) Corp or Co, (P) Private, (S) State Agency, (W) Water Dist 47 M

Use of water: (A) Air cond, (C) Comm, (D) Dewatering, (F) Fire, (H) Dom, (I) Irr, (N) Ind, (P) PS, (S) Stock, (T) Instit, (U) Unused UNKNOWN 48

Use of well: (A) Anode, (D) Drain, (G) Seismic, (O) Obs, (P) Oil-gas, (R) Recharge, (S) Spring, (T) Test, (U) Unused, (W) Withdraw, (X) Waste, (Z) Destroyed 49 T

DATA AVAILABLE: Well data 5 Freq. W/L meas.: Y Field aquifer char. 72

Hyd. lab. data: 73

Qual. water data; type: COMPLETE 74 C

Freq. sampling: INVENTORY Pumpage inventory: yes no, period: 76

Aperture cards: yes 77

Log data: GEOLOGIST LOG 78 79

WELL-DESCRIPTION CARD

SAME AS ON MASTER CARD Depth well: 327 ft Meas. rept accuracy 24

Depth cased (first perf.) ft Casing type: ; Diam. in 29 35

Finish: (C) porous concrete, (E) gravel w. (perf.), (G) gravel w. (screen), (H) horiz. gallery, (O) open end, (P) perf., screen, sd. pt., (S) shored, (W) open hole, (Z) other 31

Method Drilled: (A) air rot, (B) bored, (C) cable, (D) dug, (H) hyd rot., (J) jetted, (P) air percussion, (R) reverse rotary, (T) trenching, (V) driven, (W) wash, (Z) other 32

Date Drilled: 1938 9 3 8 Pump intake setting: ft 36 38

Driller: THORPE WELL CO. name DES MOINES, IOWA address

Lift (type): (A) air, (B) bucket, (C) cent., (J) jet, (L) multiple, cent., (M) multiple, turb., (N) none, (P) piston, (R) rot., (S) submerg, (T) turb, (Z) other 39 Deep Shallow D 40

Power (type): diesel, elec, gas, gasoline, hand, nat gas, wind, LPG; H.P. 41 Trans. or meter no.

Descrip. MP LSD ft above below lsd, Alt. MP 1330

Alt. LSD: 1330 42 43 Accuracy (source): ALTIMETER 47 1

Water Level ft above below MP; ft above below lsd 48 51 Accuracy: 52

Date meas: 53 55 Yield: gpm 56 60 Method determined 61

Drawdown: ft 62 64 Accuracy: 65 Pumping period hr 66 68

QUALITY OF WATER DATA: Iron 3.1 ppm 69 6 Sulfate 1730 ppm 70 9 Chloride 14 ppm 71 1 Hard. 1500 ppm 72 9

Sp. Conduct 3230 K x 10^6 73 6 Temp. 55 F 74 55 76 Date sampled AUG 18, 1965 77 8 6 5

Taste, color, etc.

077-38W-09 b d d c

Well Number 41 d, 23 m, 06 a (N) 095 d, 13 m, 22 b

HYDROGEOLOGIC CARD

SAME AS ON MASTER CARD (1-19) Physiographic Province: CENTRAL LOWLAND (20-21) 12 Section: DISSECTED TILL PLAIN (22) E Drainage Basin: MISSOURI (23-25) 355 Subbasin: (26)

Topo of well site: (D) local depression, (F) flat surface, (H) hilltop, (S) hillside, (T) terrace, (V) valley flat. (27)

MAJOR AQUIFER: CRETACEOUS (system) LOWER (series) (28-29) DAKOTA SANDSTONE (aquifer, formation, group) (30-31) 51

Lithology: COARSE SANDS (32-33) 41V Origin: MARINE (34) 6 Aquifer Thickness: ft

(35-37) Length of well open to: ft (38-40) Depth to top of: 320 ft (41-43) 324

MINOR AQUIFER: system, series (44-45) aquifer, formation, group (46-47)

Lithology: (48-49) Origin: (50) Aquifer Thickness: ft

(51-53) Length of well open to: ft (54-56) Depth to top of: ft (57-59)

Intervals Screened:

Depth to consolidated rock: 327 ft (60-63) 327 Source of data: WELL CUTTINGS (64)

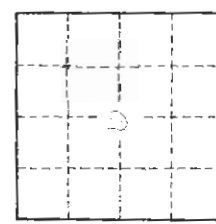
Depth to basement: ft (65-68) Source of data: (69)

Surficial material: LOESS (70-71) R Infiltration characteristics: POOR (72) 4

Coefficient Trans: gpd/ft (73-75) Coefficient Storage: (76-78)

Coefficient Perm: gpd/ft^2; Spec cap: gpm/ft; Number of geologic cards: (79)

CASING; NO INFORMATION



IOWA GEOLOGICAL SURVEY W-0247

In Cooperation with U. S. Geological Survey

RECORD OF WELL



Location:

Town: Walnut (N E / S W): County Pottawattamie

SW-SE-SE-NW sec. 9 T 77 N., R. 38 W. Layton Twp.

Well name and number Hale #4

Owner Town of Walnut Address

Tenant Address

Contractor Thorpe Well Co. Address Des Moines

Drillers

Drilling dates 1937-38

Well data:

Elevations: Drilling curb 1130 feet; Land surface feet

(Prob. at site of final well) 1330'

Determined by

Topographic position

Total depth: Reported feet, Measured feet

Drilling method

Hole and casing data

Original depth to water ft. above/below Date

Original elevation of water level ft.; Source of data

Sources of water: Principal ; Others

Production data: Date _____

Static depth to water _____ Measuring point _____

Pumping level _____ at _____ g.p.m.

_____ _____

_____ _____

_____ _____

Specific capacity _____ g.p.m. per ft. drawdown; Temperature _____ °F.

Pump data: Type pump _____ Column Dia. _____ Length _____

Cylinder or bowls: Dia. _____ Length _____ Suction pipe _____

Power _____ Airline _____

Estimated rate of production: _____ g.p.m. for _____ hrs. a day

Use of water _____

WATER ANALYSES (in parts per million)

Date samples				
Sampled by				
Total solids				
Insoluble matter				
Alkalinity (Meo)				
Alkalinity (Phn)				
pH				
Fe_2O_3+ Mn_2O_3+Al_2O_3				
Alkali as sodium				
Calcium				
Magnesium				
Iron (unfiltered)				
Manganese				
Nitrate				
Fluoride				
Chloride				
Sulfate				
Bicarbonate				
Hardness (ppm)				
Hardness (gpg)				

Remarks _____

Laboratory data: Sample storage location _____

Sample range 0-927 No. spls. 66 No. dupls. & cond. 62 (Sam & grad)

Spls. prepared by _____ Washed range _____ by _____

Driller's log and cond. _____

Insoluble residues: Prepared by _____ Studied by _____ Strip log _____

Microscopic study _____ strip log 5/8/53

Gen. log _____ Correl. by NORTHUP

077-384-09 BDDC
K1D1
WALNUT CITY #4 (1938)
00747

UNITED STATES DEPARTMENT OF THE INTERIOR
Geological Survey
Water Resources Division

Water Quality
(ppm)

Card Q

State: IOWA [16] (1-2) County: POTTAWATTAMIE [78] (3-4) Town: WALNUT, IA

Well No. Latitude [412906N] (5-11) Longitude [095132 2] (12-18) Seq. No. [1] (19) Date (M D Y) [08 18 65] (20-25)

Sampling Depth [327] (26-29) Type [1] (30) Kx10^6 [3230] (31-35) pH [75] (36-38) Temp. °F [55] (39-41)

SiO_2 [20] (42-44) Ca [384] (45-49) Mg [131] (50-53) Na [260] (54-58) K [5.9] (59-61)

HCO_3 [223] (62-65) CO_3 [0] (66-67) SO_4 [1730] (68-72) Cl [14] (73-78) Source No. [3] (79) [Q] (80)

Card R

Duplicate Columns 1-25 from Card Q

F [.3] (26-28) NO_3 [.1] (29-32) PO_4 [.] (33-35) B [.] (36-38) Al [.] (39-41) Fe [3.1] (42-45)

Mn [2.2] (46-49) Cu [.] (50-52) Pb [.] (53-54) Zn [.] (55-57)

Solids Determined [3000] (58-63) Calc. [.] (64-69) Ca,Mg [1500] (70-73) Hardness Non-Carb. [1317] (74-77)

Color [.] (78-79) No. [R] (80)

Card S

Duplicate Columns 1-25 from Card Q

Br [.] (26-28) I [.] (29-31) Alk. as $CaCO_3$ [183] (32-35) Free CO_2 [.] (36-38) SAR [.] (39-41)

RSC [.] (42-44) ABS [.] (45-47) [.] (48-50) [.] (51-54)

Alpha (pc/l) [.] (55-57) Beta (pc/l) [.] (58-60) Ra (pc/l) [.] (61-63) U (ug/l) [.] (64-66)

Verified [illegible]

No. [S] (80)

Recorded by: D. ABRONSON

Punched by: Punched ERC Date:

Published: