IOWA GEOLOGICAL SURVEY
Generalized Log Based on Detailed
Description of Drill Cuttings

Name of Well: Reeds Lake State Park Well Survey No. W- 0662

Drilled by: McCutcheon Well Company Date Fall 1937 to February 1938, 193

Total Depth: 600 ft; Curb Elevation: 1137 ft; Static Level: -48 ft.

Casing Data: 10" casing from 0-162'6"; 8" casing 150'6"-325'. 6" casing from 307'4"-453', slotted below 8" casing. Lead seal at 150'6"

Pump and Screen Data:

Pumping Test: ____ Hours ____ Min; Gal. Per Min. 50 ; Drawdown 27 ft. in ____ min.

Description of Formations

No.	Rock Unit	Thick.	From (Feet)	To
	PLEISTOCENE SYSTEM			
1.	Clay--glacial, brown, pebbly, silty, sandy, non-calcareous	8	0	8
	MISSISSIPPIAN SYSTEM			
	Hampton Formation			
	Maynes Creek member			
2.	Limestone--yellow brown, cherty, soft, fine sandy textured, badly weathered near the top and rather porous throughout. Chert is white to light gray and brown, translucent, non-fossiliferous, in parts containing small cavities	32	8	40
3.	Siltstone--(dolomite composition), yellow brown, average grain size, 1/32-1/64 mm., even granular, no chert or brown limestone	10	40	50
4.	Dolomite--drab, fine crystalline, transluscent, somewhat saccharoidally textured, porous	5	50	55
	DEVONIAN SYSTEM			
	Sheffield Formation(?)			
5.	Siltstone--medium gray, having a somewhat shaly appearance and made up of quartz and dolomite with the former averaging 50-60% in most cases, and with 50% of clay minerals in upper 5'.	15	55	70
6.	Siltstone--soft, yellowish gray; 50% quartz and 50% dolomite; average particle grain size 1/16-1/64 mm.	5	70	75
7.	Siltstone--medium to light gray, somewhat calcareous, soft, shaly appearing, dominantly quartz	20	75	95
8.	Limestone--drab to light gray in parts, medium hard, medium crystalline, translucent	5	95	100
9.	Dolomite--calcareous, light gray with a drab tone, medium crystalline, saccharoidal textured, hard, with vitreous appearance, rather porous	10	100	110

Notes:

10.	Shale--light gray, as well mud	3	110	113
11.	Dolomite--calcareous, drab, medium crystalline, saccharoidal textured, trace of pyrite	12	113	125
12.	Shale--pale, olive gray, calcareous, flaky texture, without shaly structure. Possibly bearing a few bands of gray saccharoidal dolomite (possibly cave)	35	125	160
13.	Limestone--cherty, gray, saccharoidal texture, grading to limonite yellow in 20% of sample. Chert, 50%, very light brown, transluscent and subcrystalline, up to 50% of sample	5	160	165
14.	Shale--olive gray, very fine silty texture, non-calcareous	25	165	190
	Lime Creek Formation			
	Owen member			
15.	Dolomite--cherty, drab, fine to medium crystalline, saccharoidal textured, vitreous, pyritiferous. Unit grades to vitreous brown at the base.	35	190	225
	Cerro Gordo member			
16.	Shale--light gray, soft, micaceous, poor shaly structure	10	225	235
17.	Dolomite--drab gray to dark brown, medium hard, medium crystalline, saccharoidal texture. With a thin band of white, very fine textured limestone	5	235	240
18.	Shale--light gray, soft, micaceous, ~~lime~~ silty ~~texture~~	10	240	250
19.	Dolomite--medium gray, fine to medium crystalline, saccharoidal textured, hard, vitreous, porous	8	250	258
20.	Shale--medium gray, fine silty texture, fair shaly structure	2	258	260
21.	Dolomite--light to medium gray, fine to medium crystalline, saccharoidal textured, hard slightly shaly in parts and with approximately a 2' band of gray silty textured shale between 265-270'	15	260	275
	Juniper Hill member			
22.	Shale--gray to pale olive gray, very fine silty texture, in parts slightly micaceous, fair shaly structure, firm	45	275	320
	Shell Rock Formation			
23.	Dolomite--brownish drab above to light drab at base, strongly mottled with dark blue-gray in middle 5'. Medium crystalline, transluscent, hard	17	320	337
24.	Limestone--very light gray, soft, earthy texture, dark gray mottled	8	337	345

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25.	Limestone--light gray, medium to coarse rhombohedral crystals in an earthy, ground mass	13	345	358
	~~Silurian Formation~~ Wapsipinicon(?) & Cedar Valley			
26.	Limestone--light gray, medium crystalline, saccharoidal textured, transluscent	4	358	362
27.	Dolomite--drab, medium crystalline, brittle, hard, vitreous, somewhat dark mottled with blue gray	21	362	383
28.	Limestone--white to very light gray, very fine silty to earthy texture, in flat flakes, fossiliferous	2	383	385
29.	Dolomite--drab, fine to medium crystalline, saccharoidal textured, transluscent, vitreous, hard. With a 1' band of drab lithographic limestone, subtransluscent, hard	5	385	390
30.	Dolomite--drab, calcareous, fine to medium crystalline, subtransluscent, somewhat vitreous, mottled with blue in lower 20'. Lower 10' drab gray in color	45	390	435
31.	Dolomite--drab, fine crystalline to floury textured, weak, brittle, subtransluscent, nonfossiliferous	5	435	440
32.	Dolomite--drab, fine crystalline, hard, vuggy, saccharoidal texture, transluscent	10	440	450
33.	Dolomite--drab, fine crystalline, hard, dense	5	450	455
34.	Dolomite--drab, grading to light gray, fine to medium crystalline, hard, dense, containing tiny cavities	4½	455	459½
35.	Limestone--light greenish gray, soft, silty textured, slightly shaly	1	459½	460½
36.	Limestone--white to very light drab, porcelain-like texture, soft, moderately effervescent	½	460½	461
37.	Dolomite--drab, medium to coarse crystalline, moderate effervescence	4	461	465
38.	Limestone--dolomitic; or dolomite, calcareous, drab, to slightly gray mottled, very fine crystalline to silty textured, hard, dense	3	465	468
39.	Dolomite--drab, fine to nearly medium crystalline, porous (containing tiny cavities), hard, very slowly effervescent, bearing clear crystalline calcite up to 6%; becoming darker to more grayish with depth	32	468	500

Beeds Lake State Park Well--Page 4.

40.	Dolomite--drab, gray, fine crystalline, hard, containing bands of very pale buff, porcelain textured, very fine crystalline, calcareous, dolomite	15	500	515
41.	Dolomite--pale green, fine silty textured, fairly soft, thin band	1	515	516
42.	Dolomite--drab, fine to medium crystalline, hard, subtransluscent, slightly pyritic in parts. Very porous in upper 10'; ~~becoming lighter in color toward base~~	24 ~~44~~	516	540 ~~560~~
43.	Dolomite--calcareous, light drab to gray, very fine sandy textured, fairly hard, moderate effervescence, firm, friable	20	560	580
44.	Dolomite--calcareous, dark drab, very fine sandy textured, soft, transluscent	20	580	600

350
242
all CV. ?

NOTE: The correlations on this well are not to be considered final, but as temporary, pending the accumulation of more information in this vicinity. Considerable doubt is held concerning the Devonian-Mississippian contact because of the thick series of interbedded siltstones, dolomites, and shales.

Napsipinicon Formation

43. Limestone, light gray, fine earthy textured, with disseminated dolomit rhombs, 13' 540 – 553

44 Dolomite, calcareous light drab to gray, very fine x line textured, fairly hard, moderate effervescance, firm, friable 32 553 – 585

45 Limestone, dark drab very fine crystalline textured, soft, translucent 15' 585 – 600'

Sheet No. 1 Name of Well Hampton - Beads Lake State Park Survey No. W-0662

Location Franklin Co. NE¼-SE¼-Sec. 20-T.92N-R20W Date Drilled ____ Analyst Schuldt

C.E 1137' (?) From blueprint



0 Clay-pebbly-Gloc.; Drab, non calc., somewhat silty; 2% Granules and small pebbles of Qz + Ls (Wh. to pinkish); basic Ig. rare, Sand subang. to curv., clear to frosted, 2%; Silt 2%

5' Sh. or Clay(?); Drab, non calc., somewhat silty 98%; 2% Sand - Ang. to Curv., Maj Gr ½-¼, prim. sub. ¼-⅛ mm.; 1% Limenite yel. frag. - fairly soft - Sim. to brick frag. - poss. sh.; <1% soft, drk. grn. sh. (?). cht., Wh. to br., Weath. to porous, Sandy text. <1%

10' Ls. - Weath.; Yel. br. (17°-0), well mud, extremely rapid effery. - prob. from decomp. Ls. form well mud 60%; Yel. br., fine sandy text., soft, rap. effery. Ls. 20%; Cht., Wh. to br. to gray, transl. 19%, Qz gr., Carr., frosted 1%.

15' Ls.; Yel. br., sett., fine sandy text., v. rapid effery. 40%; <1% drk. grn. sh., Cht., Wh. to gray to br., transl. 60%; Sh, drk br., V. fine, smooth text., calc. <1%

20' Cht.; Wh. to Lt. br, banded - 100%. Spls very probably washed.

25' Ls.; Yel. br. (17°-0) sott, fine sandy text., V. rapid effery. 95%; Cht., Wh. to gray to br., Transl. 55%.; cht. cont. num. small carr. - non foss. sim. in char. to spls 15'-20'

30' Ls; Yel. br. (17°-0), soft, fine sandy text., V. rapid effery. 30%, Well mud 30%, Cht., Wh. to br., to gray, Transl. 40%.

35' Ls; Yel. br (17°-0) to somewhat drker. br., sott, fine sandy text., 50%, drk. br. Ls. is somewhat more cryst.; Cht. Wh. to red br. to gray mottled, 50%.

40' S/s; Yel. br (17°-0) in sand, maj. gr. ½-¼, prim. Sub ½-½, even gran., Momentarily rapidly effery. (Dol.) Orig. rock V. Loose, sacc., (cryst. cubed.) showing br. specks,; no cht., sh., or br. Ls. found.

45' S/s.; Sim. to spls. 40'-45' but slightly lighter tint. (Dol.)

50' S/s; Calc.; Sim. to spls. 40'-95' in color and text.; 1% Wh. to gray to br. cht., 5% fine sacc. to Sandy text, sott, Yel. br. dol. (Calc).

55' S/s; pale grn. gray, somewhat. calc., sott., gr. size ½-¼, no orig. frag. (50% clay min 20% Qz 30% carb.) Ls. - yel. br, fine sandy text., med. hrd., rapidly effery. 5%;

60' S/s; pale grn. gray, somewhat calc., soft., gr. size ½-¼, 71%; Ls, Sandy text., Yel. br., Soft., porous, 15% Cht., Wh. to gray to br., 10%, Iron band, hard, 1%, Sh. all Well mud.

65' Slts.; pale grn. gray, somewhat calc, soft, gr. size ½-¼ mm, 90%) all well mud; Sim. sh, yel. br. (60% Qz) colored, 7%, Sh., choc. br. col. 3%; Cht., Wh. to red br., <1%.

70' Slts; Yel. gray, momentarily effery., Gr. size ½-¼, 90% (all well mud).; Sh, grn gray, <1%; (30% Qz 30% Cal) Cht., Wh. to br., fresh 7%; Ls., Lt. br. & red. br. 2%

75' Slts; Lt. gray, (Sim. to color spls 65-70'), somewhat calc., soft, gr. size ½-¼, 93% (all well mud); Cht., Wh. to br., 3%; Dol. br., fine sacc., med. hrd., slow effery., 3%, Sh., grn gray, mod. hrd., pyritiferous, 1%.

80' Slts; Lt. gray, (Sim in color to spls. 75-80'), somewhat calc., soft, Gr. size ½-¼, 94% (Dom. Well mud) (80% Qz) cht., Wh. to br., <1%; Dol., yel. to red br., med. hard, mod. effery. 5%,

85' Slts.; Lt. gray (Sim. in color to spls 80-85') somewhat calc., Soft, gr. size ½-¼, (dom. Well mud) cht., Wh. to br., <1%; Dol., yel. br. to reddish, med. hrd, mod. effery., 5%,

90' Slts.; Lt. gray (Sim in color and text to spls. 85-90') somewhat calc., soft., gr. size ½-¼ (dom. Well mud) 95%; Cht., br., 5%; Ls., Lt. br., <1%.

95' Ls; Lt gray to lt. blu. gray to bt. br. gray, med. hard, med. fine cryst, In ang. frag., 98%; (Dol.) Ls - Sandy text., med fine cryst., hard, rap. effery. 2%; chert - None found.

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Sheet No. 2 Name of Well Hampton Beads Lake State Park Survey No. W-0662

Location Franklin Co. NE¼-SE¼-Sec. 20-T92N-R20W Date Drilled Analyst Schuldt

Curb elev. 1137'



Aplington

Owen

Dol.-Limy-Lt. gray & Lt. br. gray - med. cryst. - sandy text. - Soft., mod. efferv. 90%; Well mud - Lt. gray 5%; Well mud forming chec. br. pebbles 1% (prob. from thin bend br. sh.); cht. Wh. to br. - foss. 4% - Gray dol. cont. <1% pyrite.

Dol., limy, brownish gray, med. cryst., sandy text., fairly soft, mod. to slow efferv. 85% (of which only 5% is well mud.); Ls. - bright yellowish br. sacc. text., rapidly efferv., soft, 6%; cht. - Wh., Weath. 4% - br. to gray, fresh 4% - Wh. cht. foss. (Crinoid stem & shell frag.); 1% pyrite

Sh; Lt. gray, as Well mud - no orig. frag. - 93%; Dol., limy, Lt. brownish gray, hard, med gr., mod. efferv. 5%; cht., Wh, gray, & br., fresh to weath. 2%; 2 frag. bit steel. - cht. foss - Gray Ls cont. pyrite

Dol., limy, br. gray, med. cryst., sacc., hard, mod. efferv. 30%; Ls, V. lt. gray, med. to fine sacc. 46%; Ls, hard, red. br., sacc. 1%; cht. frag. - Wh. to gray to br. 3%; pyrite 1%, Qz (?) frag. <1%. V. Little Well mud.

Dol., limy, Brownish Olive gray, - med. cryst., sacc., hard, 95%; 5% br. to gray transl. cht. <1% pyrite, <1% bit steel., 1 frag. reddish br. med. Cryst. Sacc. Ls.; 1 frag sphal.

Dol., Limy: pale Olive gray to somewhat brownish, med. to fine sacc., mod. efferv., hard, 90%, Well mud 5%, cht - br. to gray, transl. - 2%, Ls, yel. br., med. sacc., hard - 1%, pyrite 1%, Soft, chocolate br., calc. mat. (poss. Weath. recht.) 1%.

Sh., pale olive gray 90%; Dol., Limy, pale olive gray, Soft. med. sacc., mod. efferv., in chips, 5% 2% br. to gray cht. frag. (Transl.) 2% hard, Vit., med. sacc. br. ls., 1% pyrite (from Gray limy dol.). <1% Carv. to Subround frosted Qz gr. (Cave)

Sh., pale olive gray, in Well mud, 90%; Dol., Limy, pale olive gray, soft., med. sacc., mod. efferv. 7½%; 2% hard br., Vit., Sacc. Ls. <1% br. to gray cht., <1% pyrite (from the olive gray dol.)

Sh, pale olive gray, slightly yel., as Well mud, 93%, Dol., pale olive gray, fine sacc., soft., mod. efferv., 2%; cht., Wh., to br., 3%, 2% hard., Vit., Sacc. Ls., <1% pyrite

Sh., pale olive gray, as Well mud, 85%; Dol, pale olive gray, fine sacc., fairly soft., 10%; 2.5% br. hard, Vit. Ls.; 2.5% br. to gray transl. cht. (Checked dol. flour & chips With petro grap

Sh, pale olive gray, as well mud, 92%; Dol., Limy, pale olive gray, soft., fine sacc, 3%; 3% gray to red, transl. to opaque, fresh cht.; 1.5% br, hrd, Sacc., Ls. (1 crinoid stem) .5% pyrite from pale Olive gray Limy Dol.

Sh, pale olive gray, as well mud, 95%; Dol., Limy, Pale olive gray, soft, fine sacc, 5%; 5% hard, br., sacc. Ls (mod. efferv.) 2.5% br. to gray cht., 2.5% pyrite (from the pale olive dol.

Sh, pale olive gray, as well mud, 75%, Dol., limy, pale olive gray, soft., fine sacc., mod. efferv., 5%; 10% hard, Vit., br. Ls.; 10% br. to gray mottled cht., Frosh, transl., ang. <1% pyrite Which occurs in the gray Limy dol. which effervs. Slowly for a time.

Ls. + cht.; Br. hrd. sacc Ls 30%, br. Vit. Vhrd. as 5% pale Olive gray sacc. Dol. Ls., Soft, cont. pyrite 30%; curv. to Subround. frosted Qz 3% cht. shades of br. to gray mottled 25%; Well mud 7%.

Ls. + Cht.; Ls Yel. to red br. (17°-I), hard, rapid efferv., (text. after acid treat. resembles F. gr. ss) Vit, fine gr. 30%; Cht mottled, br. to gray, translucent, fresh, Assoc. With Ls. 50%; Well mud 20%.

Sh, pale olive gray, V. fine silty text. & homogeneous, non calc., wholly as well mud; at least 30% lt. br. translucent cht. (Cave from unit above).

Sh, pale olive gray - cont. occas. streaks of yel., soft, poor Shaly struct., micaceous appear., fine silty text., Sim. to sh. 165-170' in color, text., & comp. 7% caved lt. br. cht.

Sh, pale to med. olive gray, sim. to spls. 165-170' in color, text., & comp., 50% Well mud, 45% frag. (?); 5% caved br. cht.

Sh, pale olive gray, sim. to spls. 165-170' in color, text., & comp., roughly 50% Well mud, 50% frag.; 2% br. cht. (cave) - trace gray dol. sh. - prob. V. thin band.

Sh, pale olive gray, sim. to spls. 165-170' in color, text., & comp.; in parts showing consid. iron stain along partings.; dominantly sh. frag., (Well mud <40%). 2% br. cht.

Dol., drab, fine to xline to Sacc. text, fairly hard, slow efferv, charty (br., transl.) (cave), pyritic, non foss.

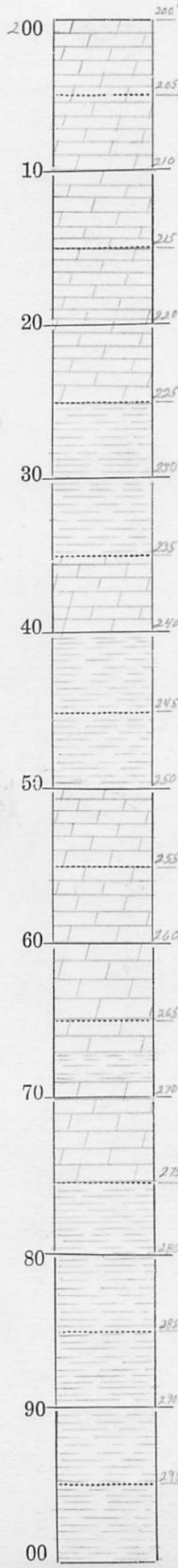
Dol., drab, sim. to spls. 190-191' in color, char., & text. frag. coated with gray mud. cht. <3% pyrite <1%.

Dol., drab, sim. to dol. spls 190-191' in color, text., & comp., (cave) cht. <1%; pyrite <1%.

Sheff. old (3)

Sheet No. 3 Name of Well Hampton, Roods Lake State Park Survey No. W-0662

Location Franklin Co. Date Drilled Analyst Schuldt 1/17/38



Dol., drab, sim. to dol. spls. 190-191' in color, text., & approx. comp.; no Well mud; trace pyrite; no cht.

Dol., drab, sim. to dol. spls 190-191' in color, text., & approx. comp.; coating of well mud; Trace pyrite; 1 frag. cavings cht.

Dol., med. to drk br., black speckled in darker frag., hard, transl., vitreous, sim. in text. to spls. 190-195', 79 %; Ls, v. pale buff to gray, soft, rap. efferv., v. fine text., foss. (one spherical gr. - oolite?) 20%; cht., lt. br. to wh., caved <1%. Trace pyrite in br. ls.

Dol., med. to drk br., & Ls v. pale buff, sim. to spls 210-215 in color, text., & phys. char.) Dol. 60 %; Ls 40 %; cavings cht, lt. br. <1 %; pyrite <1%.

Dol., med. to drk. br. & ls, v. pale buff, sim. to spls 210-215' in color, text., & phys. char., Dol., 97 %; ls 3 %; cavings cht., v. lt. br., transl., <1 %; trace pyrite.

Sh, lt. gray, fine silty micaceous text., poor to fair shaly struct., soft, dom. as well mud, non calc.; trace pyrite. 3% caved dol. from above.

Sh, lt. gray, sim. to spls. 225-230' in color, text., & comp.. Dom. Well mud; 2% caved dol. from above.

Dol., drab to drk. br., med. to fine xline, hard, vitreous, xline. to sacc. text. %; ls, v. lt. gray to v. pale buff, v. fine silty text., soft, %; abraded Qz gr. (1-½ mm) 3%; fold. gr., red, 1% drk ig. <1% (latter 3 prob. cave from top of hole); trace pyrite.

Sh, lt. gray, soft, micaceous, as well mud 70 %; ls, lt. buff, hard, v. fine text., 29 %; cht., lt. br., fresh, 1%; trace pyrite.

Sh, lt. gray, sim. to sh. spls. 240-245' in color, text., & phys. char.; trace cht.; <1 % pale buff ls.

Dol., lt. gray to med., fine to med. xline, sacc. text., hard, %; ls, dol., lt. br. to pale buff, hrd, v. fine text., prob. cave %; <1% pyrite; Trace lt. br. cht.; <1% abraded Qz. gr.

Dol., lt. to med. gray sim. to dol. spls 250-255' 50 %; Sh., med. gray, firm, fine silty text., fair shaly struct., 40 %. Well mud 10%.

Dol., lt. to med. gray, sim. to dol. spls 250-255' 84 %; Cht., lt. br., transl., fresh, 6 %; Trace pyrite; <1% clear calcite; ls, v. pale buff, trace; Well mud 10 %

Dol., lt. to med. gray, to drab sim. to dol. spls 250-255', 59 %; ls, pale buff, 2 %; Cht. lt. br., transl., 4%; Few caved Qz. grains, <1% clear cryst. calcite.

Sh, lt. gray, fine silty text., fairly hard, v. poor shaly struct, 35 %; Trace pyrite

Dol., lt. gray, sim. to dol. spls 250-255' %; 1 frag. wh. ls.; 1 frag lt. br. cht.; Well mud 10%.

Sh, gray to pale olive gray, fair shaly struct., v. fine silty text., fairly soft, %; Dol., lt. gray to drab, sim. to dol. in spls. 250-255', 10 %; 1 frag. drk br., fine xline dol.

Sh, med gray, soft to rather hard, fairly good shaly struct., micaceous, 89 %; dol., br., fine xline, rather weak, 10%; pyrite - in sh., 1%.

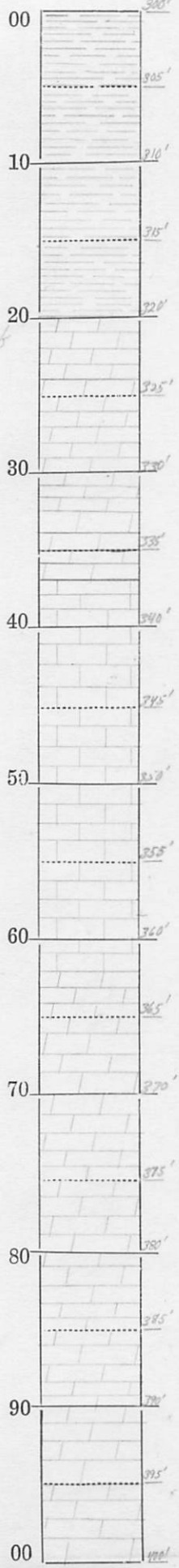
Sh, med. gray, soft, fair shaly struct., micaceous; at least 20% of spls. grading to a harder dol. sh. or sh. dol.

Sh, med. gray, soft, v. poor. shaly struct., silty text. soft - sim to sh 225-230'

Sh, med. gray, sim. to sh. in spls. 225-280'. few frag. br. cht. (cave)

Sheet No. 4. Name of Well Hampton - Beeds lake State Park Survey No. W-0662

Location Franklin Co. Date Drilled 1/17/38 Analyst Schuleft



Sh, lt. to med. gray, sim. to spls. 275-280'; 1 frag. lt br. transl. cht.

Sh, lt. to med. gray, sim. to spls 275-280'; 2 small frag. br., fine xline dol.

Sh, lt. to med. gray, sim. to spls. 275-280', 60%; Sh:, sim in text. but pale grn. gray in color 40%

Sh, pale grn. gray, fine silty text., fair to poor silty text., non calc., non foss., rather soft. pyritiferous, <1% pyrite.

Dol., br. drab, med. to fine xline, fine granitic text., strongly translucent, v. hard, pyritiferous, cont. vugs bearing clear xline calcite., rare frag. lt. br. cht.; pyrite %; calcite %; cht. trace, much bit steel - no foss. observed.

Dol., br. drab, sim. to dol. spls. 320-325', mottled with or grading into drk. bluish gray semi transl. dol.; pyrite <1%; clear calcite 1%. mud. coated.

Dol., lt. drab, sim. to dol. spls 320-325' in text., 85 %; dol., bluish gray, sim. to dol spls 325-330' 15 %; pyrite, trace, calcite <1%.

Dol., lt. drab, sim. to dol. spls. 330-335, 40 %.
Ls., lt. lt. gray to drab bluish gray; bluish gray part. subtransl., hard, lith. text., vuggy; lt. gray ls soft, grading to earthy, rap. efferv., 40%.

Ls, V. lt. gray to drab bluish gray, sim. to ls. spls 335-340'; <1% clear calcite.

Ls. V. lt gray to drab bluish gray, sim. to ls. spls. 335-340'. larger frag. show remarkable developement of highly perfect, v. pale bluish gray to v. pale drab transl. rhombohedrons in matrix of fr. pale gray earthy calcite.

Ls. V. lt. gray to pale drab bluish gray, sim to spls 345-350' in color, text., & phys. char.

Ls, V. lt. gray to pale drab bluish gray, sim. to spls. 345-350' in color, text., & phys. char.

Ls, V. lt. gray to pale drab bluish gray, sim. to spls 345-350' in color, text., & phys. char. 40 %
Dol., calc., drab to lt. drab, med. xline, brittle, flaky text., sub transl., 60 %.

Dol, drab, med. cryst., sim. to dol. spls. 360-365' in color, text., & phys. char.; trace of pyrite.

Dol., drab, med. xline, sim. to dol. spls. 360-365' in color, text., & phys. char.; grading in part to drk. bluish gray.

Dol., drab, med. xline, sim. to dol. spls. 360-365' in color, text., & phys. char.; few frag. grading to drk. bluish gray.

Dol, drab, sim. to dol. spls. 360-365' in color, text., & phys. char. 65 %
Ls, wh. to lt. gray, v. fine silty to earthy text., soft, in flat flakes, foss., mod. efferv., 35 %

Dol., drab, sim. to dol. spls 360-365' in color, text., & phys. char. 80 %
Ls. drab, lithographic text., sub translucent, hard., 20 %

Dol., Calc., drab, med. xline, hard, transl., 80 % vitreous grading to blue in spots.
L s, Sim to ls. spls 385-390' (cave?) 15%; 5% wh. to clear xline calcite.

Dol, drab, calc. med. xline, sim. to dol. spls 390-395' in color, text., & approx comp.
ls, earthy, wh, soft, 20%; trace pyrite.

Sheet No. 5 Name of Well. Hampton, Beeds Lake State Park Survey No. W-0662

Location Franklin Co. Date Drilled Analyst Schuloff

1/18/38 + 2/1/38



Dol., drab, med. xline., sim. to del. spls 360-365', 50 %; Dol., lt. br., med. xline, brittle, slightly calc, 40 %; calcite, clear, xline, Wh. 4%; 1 shell frag. impression. both types dol. are gradational; <1% rounded + frosted Qz gr.

Dol, drab (75%) + lt. br. (20%), sim. to spls. 360 to 365'; Calcite, clear, xline 5%; <1% pyrite.

Dol., drab to lt. br., sim. to dol. spls. 360-365'; 4% Clear cryst. calcite; <1% pyrite

Dol., drab to lt. bluish gray, med. xline to slightly earthy in parts, slightly calc., hard, transl. sim. to dol. spls 360-365 but grading in part to diff. color. Unit cont. sh. band (much wall mud, few frag) or band v. fine silty text. dol., lt. gray, Calcite 2 %; Pyrite <1 %.

Dol, drab (with occas. lt. bluish gr.) sim. to dol. spls 360-365'; V. minor % lt. br. flaky dol.

Dol, drab (50%) to lt. bluish gray drab (50%), sim. to dol. spls. 415-420'; <1% pyrite; <1% Clear calcite.

Dol., drab (70%) to lt. bluish gray drab (30%) sim. to dol. spls 415-420', 90% < 1mm in diam. Trace pyrite; trace clear calcite.

Dol, drab, fine xline, sacc. textured to fine xline text., weak, brittle, sub transl., v. slowly efferv., non foss., 90 %; 10% drab. med. xline dol. from above

Dol., drab, fine xline, sacc text. 40 %; dol. drab, med. xline, sim. to dol. 360-365, 20 %; dol, slightly grn. gray, fine sandy to silty text., mod. hard, non foss., to dol., same color, sub cryst. text., 40 %; Trace pyrite.

Dol, drab, fine xline., 5 %; dol., drab, med. xline to dol. bluish, med. xline, 85 %; dol, grey, fine sandy to sub cryst. text., 10 %; trace pyrite;

Dol., drab, fine xline., hard, dense, (silty textured); spls. contam. with cinders, coarse gr. Qz, brick frag. (?), cht. (Brown); 10% of caved mat. from above

Dol., drab, grading to lt. gray med. to fine xline, hard, dense, cont. tiny cavities (well formed cryst. faces); spls. bound in lumps by lt. grn gray mud (poss. a shaly band)

Dol., drab, mod. to crse. xline, fairly hard, compact, mod. effern. (calc.), 70 %; Ls, Wh. to V. lt. drab, porcelain like text., soft, mod. efferv., 5 %; Ls, lt. gru. gray, silty text., soft, slightly shaly, 5 %; Sh. mod. grn. gray, firm, fair shaly struct., non calc. <1%; consid wall mud; Trace Pyrite

Ls, dol., drab, slightly mottled to gray, v. fine xline text. (sparkling), hard, dense, 60 %; dol, drab, sim. to crse. xline drab dol. spls 465-470', 35 %; clear calcite as cleav. frag., 5 %; <1%

Dol., drab, fine xline, sub translucent, hard, porous (small cavities), v. slow efferv.; <1% calcite cleav. frag.

Dol, drab, fine xline, sim. to spls. 470-475', but slightly darker in color & slightly more crse xline. 5% clear calcite (Not cave); 1 very perfect calcite crystal. (Authigenic)

Dol, drab, fine xline, sim. to spls. 470-475' but slightly darker in color, & slightly more crse. gr,

Dol., drab, fine xline, sim to spls. 470-475' " " " " " " " " " " in parts slightly drk. mottled.; 1 v. large frag. calc. dol, v. pale buff, silty text, hard; 2% clear Calcite.

Dol., drab, fine xline to nearly mod., sim. to spls. 475-480', 83 %; dol, calc, V. pale buff to lt. gray mottled & banded in parts, sim. to pale buff dol. spls 485-490', 15 %; 2% clear calcite

Dol, drab, fine xline, sim. to spls. 475-480'; 1% V. pale buff. calc. dol. Consid. bit steel, consid. wall mud

Sheet No. 6 Name of Well Hampton Beads Lake State Park Survey No. W-0662

Location Franklin Co. Date Drilled 2/1/38 Analyst

500 500'

Dol., drab, fine to nearly med. xline, sim. to spls 475-480'; <1% V. pale buff calc. dol. <1% clear calcite

505'

Dol., drab, sim. to spls 475-480; 5% wh., calc. dol., 2% grn. sh; 1% clear calcite.

10 510'

Dol, drab, sim. to spls. 475-480'; 25% pale buff, fine text. dol.; Ls, gray, fine text., fairly hard; 45%; 1% gr. sh.,

Dol. drab, sim. to spls 475-480'; dol. pale green, fine silty text., Ls, pale drab & buff, 40% <1% clear calcite; 1% grn sh.,

20

Dol, drab, sim. to spls. 475-480'; dol., pale green <1%; green sh <1%; trace calcite.

Dol, drab, sim. to spls 475-480'; <1% wh. calcite; trace green sh.; trace pyrite.

30 530

Dol., drab, sim. to spls 475-480'

Dol., drab, sim. to spls 475-480'; 10% V. pale gray, chalklike calc. sh.; rare pyrite cubes; trace drk. grn sh.

40

Ls., drab, sim. to spls 475-480'; 5% V. pale buff Ls.

Ls., drab, lithographic

50

Ls., dk. gray, lithographic

Dol, drab, sim to spls 475-480

Dol., drab, sim. to spls. 475-480'; 10% V. pale buff, silty text., rap. efferv. Ls.

60

Ls, dolomitic, drab gray, Vfine sandy text., fairly hard, mod. efferv.; 4% calcite.

Dol., calc., V. lt. gray, V. fine silty text., firm but friable, in parts calc.; 2% clear calcite

70

Dol., calc., V. lt. gray, sim. to spls. 560-565'

Dol., calc., V. lt. gray, sim. to spls. 560-565'

80

Dol., calc., drab gray, fine xline. to sac. text., mod hard, mod efferv.; 3% clear calcite

Ls, drab, sim. to spls 580-585' in color & text., but mod. to rap. efferv., Transl., fairly soft, much flour.

90

Ls, drab, sim. to spls. 585-590'. dom. flour.

Ls, drab, sim. to spls. 585-590' as frag.

00

Sheet No. 1 Name of Well Reeds Lake Survey No. W-0662

Location Hampton, Franklin Co. Date Drilled Analyst M.E.Vias

00 0 Till, brown, oxidized and leached, some sand. qtz.

5 Till, brown, oxidized and leached, sandy, qtz., some biotite.

10 10 limestone, yellowish brown, fn.; 40% chert, lt. gray to drab, more or less translucent, a little white granular earthy, weathered.

15 limestone, sample as 10-15', no weathered chert. more chert - 60%

20 20 chert, lt. gray to drab, most only slightly translucent, little weathered on edges.

25 chert, lt. gray to drab, slightly translucent, spotted or mottled with opaque yellow brown which looks like dolomite, quite porous, lt. gray translucent chert has small vugs; 15% ls. yellow brown, fn. grained.

30 30 limestone, lt. yellowish brown, fn., soft. all reduced to a powder, 25% chert

35 limestone, lt. to med. yellowish brown, fn., small part sugary, most soft and reduced to powder, a fragment of large clear calc. xl.; chert 30%

40 40 Dolomite, slightly calc. and silty, reduced to a powder and has the appearance of a siltstone, lt. yellowish brown little chert.

45 Dolomite, sample as 40-45' paler in color

50 50 Dolomite, vi. calc., reduced to powder, light yellowish brown, little chert.

55 Siltstone, vi. calc., sandy, lt. bluish gray, sandy, contains pebbles of yellow brown ls., a little bit of darker gray shearking. little pyrite.

60 60 Siltstone as in 55-60, more ls. - 20%; 20% chert, lt. gray and yellowish brown mottled, more or less translucent

65 Siltstone, slightly calc., shaly, lt. bluish gray, a little mottling with lt. yellow, vi. calc. silty, some small ls. fragments soft.

70 70 Siltstone, vi. calc., shaly, lt. yellowish gray, fragments of chert and ls. - 10% soft.

75 Siltstone, calc, shaly, lt. yellowish gray, soft; fragments of yellowish brown ls. and chert - 10%; little pyrite.

80 80 Siltstone, as 75-80'

85 Siltstone, calc, shaly, lt. gray, slightly bluish, soft; fragments of yellowish brown ls. and chert - 5%; 5% dolo. lt. gray fn. to med. sacch., porous.

90 90 Siltstone, calc, shaly, lt. bluish gray, soft; 10% yellowish brown ls. and chert.

95 Dolomite, lt. gray, some slightly drab, fn. to med., little sacch., strongly calc.; 5% dolo. lt. bluish gray, fn.; large piece yellowish brown ls. cave.?

100 100

Sheet No. 2 Name of Well Beeds Lake Survey No. W-0662

Location Hampton, Franklin Co. Date Drilled Analyst M.E. Lias

100 -100 Dolomite, lt. gray, some slightly drab, v. fn. to fn., a little carbonaceous; rare pyrite; piece of dk. drab dolo. with pyrite; 5% shale, dk. brownish gray, soft.

-105 Dolomite, lt. gray, fn. to med., sacch., rare pyrite; a little dolo. drab and pinkish drab; 10% chert, opaque white and translucent gray to brownish gray; a little white weathered, less.-bryozoan and clean spots in the shape of less. fragments; some brown chert and lt. cave.

110 -110 Shale, pale bluish gray, soft; 10-3% dolomite as above, 5% chert; pyrite

-113 Dolomite, grayish drab, fn. to med., dense to sacch., porous, little pyrite; 3% chert, white and drab.

-115 Dolomite, lt. gray, a little shaly, drab, fn. to med., subcarbonatic, slightly porous, strongly effervescent, rare pyrite, 5% chert gray to drab translucent; fragment of large clean coke. XL. large hunk yellow brown lt., cave.?

120 -120 Dolomite, coke., lt. gray to drab gray, v. fn. to med., some sacch., small spots of white chert, pyrite; 3% chert, gray to drab translucent.

-125 Shale, slightly dolomitic, lt. gray, v. slightly bluish, fairly soft, containing occasional chunks of yellow brown lt. as well as dolo as above, totaling less than 5%, some shows a poor lamination. and chert

130 -130 Shale, sample as 125-130' less dolomitic

-135 Shale, sample as 125-130' containing mostly chert, gray, brown and drab; less dolomitic

140 -140 Shale, sample as 125-130', containing principally gray med. sacch. dolo.

-145 Shale, sample as 125-130', 10% or more of lt. chert and dolo. including pieces of bright red quartzite?

150 -150 Shale, sample as 125-130'

-155 Shale, sample as 125-130', containing mostly lt. gray, drab, and brown chert.

160 -160 55% Limestone, yellow brown, most is speckled with black, fn. to v. fn. sandy, sandy tex.; 30% chert, mostly brown, some gray to white, more or less translucent; 15% dolo. lt. gray, slightly bluish, fn. sacch., pyritic; 10% sh. lt. gray, bluish, soft

-162 50% Chert, gray, drab and brown, more or less translucent; 15% lt. yellow brown, fn., one piece with coarse XL.; 35% shale, lt. gray, soft

-165 Shale, slightly dolomitic, lt. gray, slightly bluish, soft; 25% chert, drab and brown, opaque; 10% lt. yellow brown, fn. sandy tex.,

170 -170 Shale, sample as 165-70; 15% chert, 5% lt.

-175 Shale, dolomitic, lt. gray, slightly bluish, fairly soft, some areas v. finely micaceous; few pieces chert

180 -180 Shale, sample as 175-180

-185 Shale, dolomitic, lt. gray, slightly bluish with much containing mottling of yellow brown shale; some spots v. finely micac.

190 -190 Dolomite, med. gray drab, fn. to med. sacch.; pyrite; 5% chert; large broken galena XL.

-191 Dolomite, med. gray drab, fn. to med. sacch., porous, pyrite; little chert; slightly shaly.

-195 Dolomite, as 191-195'; no chert

200 -200

Sheet No. 3 Name of Well Reed's Lake Survey No. W-0662

Location Hampton, Franklin Co. Date Drilled Analyst M.E. Ivas

200 -200 Dolomite, slightly calc., lt. gray to drab gray, fn. to med. sach., pyrite, 5% shale, lt. gray

-205 Dolomite, lt. gray to drab gray, fine to med. sach., little pyrite.

210 -210 Dolomite, calc., grayish brown with a little v. dk. and almost black, med., dense to sach., rare pyrite; 5% ls., pale gray slightly buff, v. finely with med. clear xls.

-215 Dolomite, calc., gray brown (rare v. dk.) fn. to med., dense to sach., with spots and streaks of pale gray slightly buff ls., v. fn. flowery, containing some clear med. sized dolo. rhombs. about 25% of sample is the ls.; rare pyrite

220 -220 Dolomite, sample as 215-20 but only 10% ls.

-225 Shale, dolomitic, lt. gray slightly bluish, some mottling with the above gray, occasional irregular areas of v. fn. grained pyrite. 5% dolo. fragments as above.

230 -230 Shale, dolomitic, lt. gray, slightly bluish, soft, 5% dolo. fragments as in 215-20'

-235 Dolomite, gray brown, some v. dk., med. sach., a few coarse xls., with pale gray slightly buff ls., dolomitic, with dolo. rhombs. → ls. - 20% rare pyrite,

240 -240 Shale, lt. gray, slightly bluish, some olive gray mottling, soft, contains about 10% ls. pebbles, pale gray slightly buff, 5% dolo. gray.

-245 Shale, dolomitic, lt. bluish gray, soft, 5% ls. pebbles

250 -250 Dolomite, drab gray, fn. sandy tex.; rare pyrite; few buff ls. fragments.

-255 50% shale, lt. bluish gray, soft; 40% dolo. drab gray, fn.; 10% chert, lt. to dk. gray, and buff, slightly translucent

260 -260 Dolomite, drab gray, fn. sandy tex., rare pyrite, 20% shale, lt. bluish gray; 10% chert, buff, brown, and gray, more or less translucent fragments of yellowish ls.

-265 50% Shale, lt. gray, slightly bluish, some olive gray, soft, a little v. poor laminations; 40% dolo. drab gray, fn., rare pyrite; 10% chert, buff, slightly translucent; few fragments of large clear white dolo. xls.

270 -270 Dolomite, lt. gray to drab gray, fn. sandy tex.; 5% ls., clear white coarse xls.; 10% sh. lt. gray, finely micaceous, rare pyrite

-275 Shale, dolomitic, lt. gray, finely micaceous in spots; 20% dolo. as in 270-75'; fragments of large clear dolo. xls. with pyrite with poor lamination

280 -280 Shale, dolomitic, lt. gray, finely micaceous, poorly laminated; 5% dolomite as in 270-75'

-285 Shale, dolomitic, lt. gray, finely micaceous, poorly laminated, occasional pyrite streaks

290 -290 Shale, dolomitic, lt. gray, bluish, finely micaceous, poorly laminated; few pieces yellow ls. and drab dolo.

-295 Shale, dolomitic, slightly silty, lt. gray, finely micaceous, poorly laminated; few pieces yellow ls. + drab dolo.

300 -300

Sheet No. 4 Name of Well Reed's Lake Survey No. W-0662

Location Hampton, Franklin Co. Date Drilled Analyst M. E. Elias

300 – 300 Shale, dolomitic, lt gray, v. finely micaceous; rare yellow lt. fragment, coal,

– 305 Shale same as 300-5'

310 – 310 Shale same as 300-5' with a faint brownish tint.

– 315 Shale, same as 300-5, some parts with faint brownish tint.

320 – 320 Dolomite, med. drab gray, med. with a small part coarse grained, occasionally a large clear xln., small part saccharoidal, pyrite uncommon; 5% shale as above.

– 325 Sample as 320-25' but broken down more

330 – 330 Dolomite, pale gray slightly drab, few gray shale, med. to coarse, rare pyrite, 5% shale as in 320-25'

Shale as in Clear Lake well

– 335 35% Limestone, pale gray (dolomitic) almost white to med gray, v. fn. floury, 25% dolomite as in 330-35', rare pyrite

340 – 340 Limestone, (dolomitic) pale gray almost white with a small part lt to med gray, v. fn. floury but containing occasionally a large clear xln.; rare pyrite.

– 345 Limestone, white, v. fn. floury filled more or less with (sand size rhombs) dolo. rhombs, translucent lt gray, med. to coarse, few large; rare pyrite; 5% dolo., lt. drab gray and lt gray with buff, fn. to med.

350 – 350 Limestone with dolo. rhombs as in 345-50'

– 355 Sample as 345-50' but with many pieces having a slight buff tint and about 50% of sample completely replaced by calc. dolomite xln.

360 – 360 70% Dolomite, calc., drab to gray, med.; 20% lt. (dolomitic) brown, med grained; 10% lt. floury with dolo. rhombs as in 345-50'

– 365 Dolomite, calc.; drab to gray, med; 15% lt. dolomitic brown to drab, fn. to med grained; rare pyrite

370 – 370 Dolomite, calc., drab to dk gray, med.; 20% lt. dolomitic brown to drab, fn. to med.

– 375 Dolomite, calc., drab to gray, a little dk gray, med.; fragments of large clear white xln.

380 – 380 Limestone, v. pale gray to med gray, v. fn., some floury, with more or less med. to coarse dolo. rhombs; 10% dolo. as 375-380

– 385 Dolomite, lt drab to gray, med. containing occasionally large clear white xln., 5% lt as in 380-85'

390 – 390 55% Limestone, pale gray to lt. drab and lt gray, some med gray, v. fn., some floury, occasionally containing larger xln.; 45% dolomite, lt drab to gray, med. grained

– 395 Dolomite, grayish drab, little gray, fn. to med.; fragments of large clear white dolo xln.; 5% lt. pale gray and gray, v. fn. floury.

400 – 400

Sheet No. 5 Name of Well. Reeds Lake Survey No. W-0662

Location Hampton, Franklin Co. Date Drilled Analyst M.E. Elias

400 400 Dolomite, lt grayish drab to gray, fn to med; fragments of large clear white calc. dolo. Xls.; 5% lt. pale gray to gray, v fn floury

405 Dolomite, calc., pale gray slightly drab to drab and gray, med some fn., fragments of large clear white Xls.; little pyrite; little lt.

410 410 Dolomite, lt grayish drab, a little drab and gray, fn to med, fragments of large clear white Xls.; little pyrite; little lt.

415 65% Dolomite, calc., lt gray and drab, med.; 35% lt., pale to lt gray, v fn floury to med grained; little pyrite

420 420 Dolomite, pale grayish drab, med. grained; little pyrite.

425 Dolomite, pale drab to pale gray, med. to coarse; rare pyrite

430 430 Dolomite as 425-30 containing occasional large clear white Xl.

435 Dolomite, lt drab, fn grained, dense to saccharoidal; 3% dolo, pale drab to pale gray, med. to coarse.

440 440 35% Dolomite, lt gray slightly bluish, v fn floury to fn sandy tex, slightly pyritic; 35% dolo, lt drab, fn grained, dense to sacch.; 30% dolo. pale drab to pale gray, med. to coarse.

445 Dolomite, pale drab and pale gray to med gray, med. to coarse; 5% dolo. lt bluish gray, v fn. to fn.

450 450 Dolomite, slightly calc, drab, fn grained, 5% dolo as in 445-50.

455 55% Dolomite, lt gray to lt drab, med.; 25% dolo. slightly calc, drab, fn; 20% dolo. lt. bluish gray, v fn to fn.; rare pyrite

460 460 40% Dolomite, pale drab to drab, med.; 40% dolomite, pale gray almost white to lt gray, v fn floury; 10% dolomite, lt bluish gray, fn sandy tex.; 10% shale, calc. green slightly gray to pale green, some with v fn black specks.; rare pyrite

465 Dolomite, lt drab to lt gray, v fn to fn; many pieces of large clear white calc dolo Xls.; 1% dolo. brown, fn; 1% dolo. drab, med.; 2% shale brown; rare pyrite, little green sh.

470 470 Dolomite, lt gray to lt drab, fn, med Xl. lining rare vugs; 7% dolo. lt gray to gray, v fn floury; fragments of large clear calc. dolo Xls. rare pyrite

475 Dolomite, lt grayish drab, with small subrounded gray specks, fn, few small vugs; fragments of large clear calc. dolo. Xls.; 1% shale, green

480 480 Sample as 475-80; 5% dolo, pale gray slightly drab, floury.

485 Dolomite, lt drab gray, fn; some med. sacch.; one large piece of dolo., calc., v pale gray almost white with slight drab tint, with some v fn brown lamination; little green sh.

490 490 Dolomite, drab with some gray specks, fn. sandy, some large clear Xls, with a little dark brown sh in specks; 3% green shale filling cavities in dolo.?; 5% dolo. calc., v pale gray almost white with slight drab tint, fn gray banded; 2% dolo, gray slightly blue, v fn black specks, fn sacch.

495 Dolomite, drab with some gray specks, fn little med, some large clear Xls.; little pale drab floury calc. dolo, and v fn bluish gray sacch. dolo.; 1% lt greenish sh.

500 500

Sheet No. 6 Name of Well Reeds Lake Survey No. W-0662

Location Hampton Franklin Co. Date Drilled Analyst M. Elias

500 — 500 — Dolomite, lt. grayish drab, fn. to med., a little sandy, somewhat porous

505 — Dolomite, lt. gray slightly drab, fn., some sandy., porous, large clear white calc. xls.; 5% dolo. pale gray to pale buff, v. fn. to floury; 5% green sh, cave?; small amt. dk. brown sh.

510 — 510 — 50% dolomitic

Dolomite, lt. gray to lt. drab, fn., some sandy; 1/2 pale gray to grayish drab, few dk. gray spots, fn. sandy; 5% dolo. pale gray and pale buff, v. fn. floury.

515 — Limestone, dolomitic, pale gray to lt. drab, few small dk. gray spots, v. fn. to fn.; 15% dolomite, lt. greenish gray with some gray spots, v. fn., pyritic; 5% dolo. lt. gray to lt. drab, fn.; 2% green shale, with some gray spots; some dk. brown sh.

520 — 520 — Dolomite, slightly calc., lt. drab to drab, some grayish, fn. sandy., compact to v. porous; little green sh. with gray spots.

525 — calc. Dolomite, lt. drab, a little gray, fn., a little sandy, slightly porous; fragments of large clear calc. xls.; little green and greenish gray sh.

530 — 530 — Dolomite, lt. drab, a little grayish, fn., compact to sandy, slightly porous, friable (whole sample reduced to sand); little pyrite, 5% dolomite, lt. greenish gray, v. fn.; trace green sh. large clear calc. xls.

535 — Dolomite as in 530-35; 10% fr. dolomite, pale gray to white, floury and with fn. to med. xls.; rare pyrite; trace green sh. whole sample reduced to sand.

540 — 540 — Limestone, pale gray to lt. gray, floury; whole sample reduced to sand; 10% dolo as in 530-35' some slightly drab

545 — Sample as 540-45', only 5% dolo.

550 — 550 — Limestone, v. pale gray, almost white, to pale grayish drab, floury. Sample reduced to sand.

555 — Dolomite, lt. gray to lt. drab, fn.; 35% limestone as in 550-555'

560 — 560 — Dolomite, v. calc., pale gray, v. fn. to fn., pieces of large clear white calc. xls., little pyrite

565 — Dolomite, v. calc., pale gray, little lt. gray, v. fn. to fn., much sandy residual, pieces of large clear calc. xls.; rare pyrite.

570 — 570 — Dolomite as in 565-70

575 — Dolomite, as in 565-70

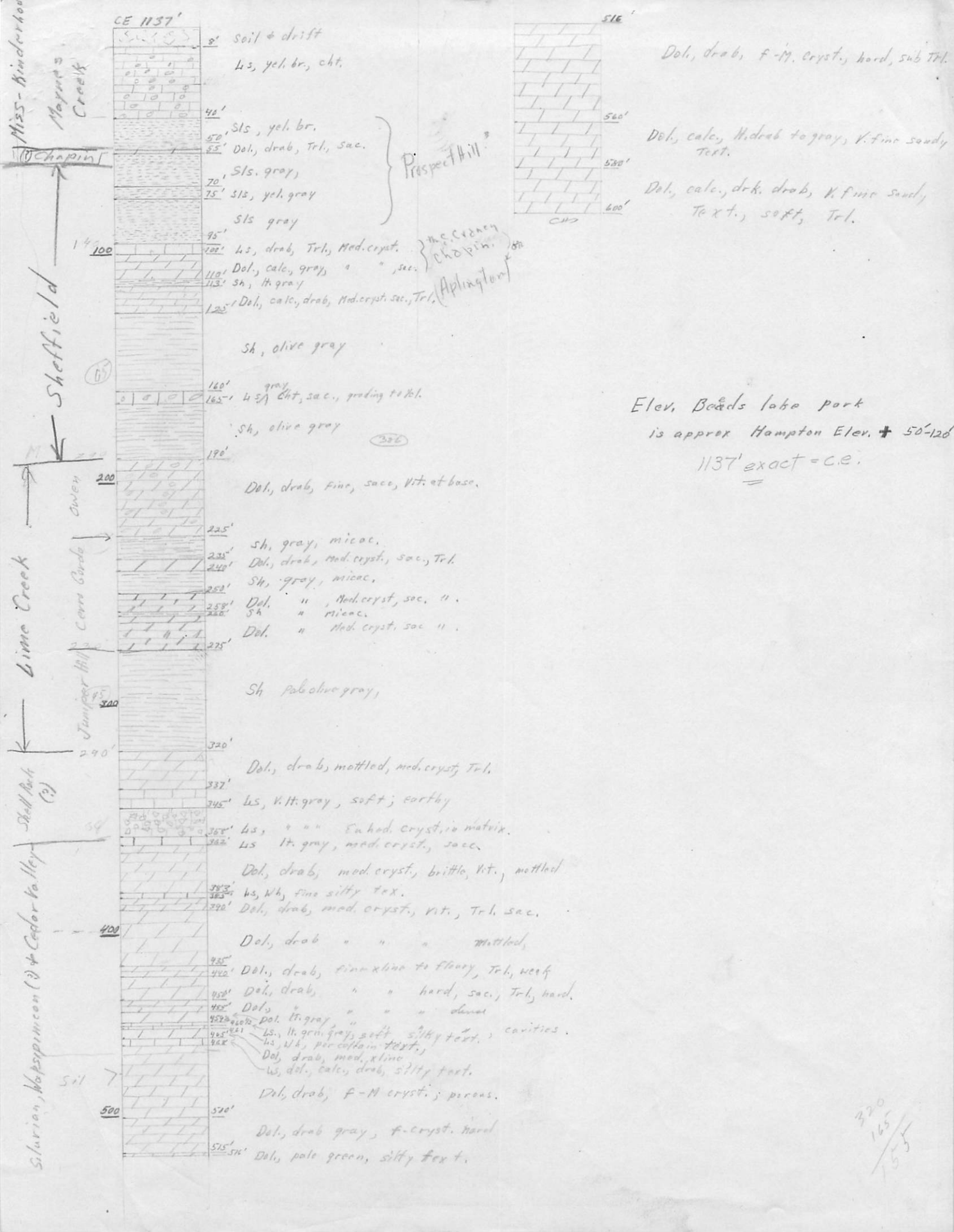
580 — 580 — Limestone, v. dolomitic, pale to lt. gray, v. slight drab tint, fn., most sandy, fragments of large clear calc. xls.

585 — soft Limestone, v. pale gray, floury and v. fn., fragments of large clear calc. xls.; 25% dolo., lt. drabish gray with med. gray mottling, fn., occasional vugs.

590 — 590 — Limestone, v. pale gray, floury, v. soft.

595 — Limestone, pale gray, with some med. gray mottling, floury with an occasional large xl., soft.

600 — 600


CE 1137'
8' Soil & drift
Ls, yel. br., cht.
40'
Sls, yel. br.
50'
55' Dol., drab, Trl., sac.
Prospect Hill
Sls. gray,
70'
75' Sls, yel. gray
Sls gray
95'
100'
100' Ls, drab, Trl., Med. cryst.
110' Dol., calc., gray, " , sac.
113' Sh, lt. gray
125' Dol., calc., drab, Med. cryst. sac., Trl.
Sh, olive gray
160'
165' Ls, gray cht, sac., grading to Dol.
Sh, olive gray
190'
200'
Dol., drab, fine, sacc, Vit. at base.
225'
Sh, gray, micac.
235'
240' Dol., drab, Med. cryst., sac., Trl.
Sh, gray, micac.
258'
258' Dol. " , Med. cryst, sac. " .
260' Sh " micac.
Dol. " Med. cryst. sac " .
275'
Sh pale olive gray,
300
320'
290'
Dol., drab, mottled, med. cryst, Trl.
337'
345' Ls, V. lt. gray, soft; earthy
358' Ls, " " " Euhed. cryst. in matrix.
362' Ls lt. gray, med. cryst., sacc.
Dol, drab, med. cryst., brittle, Vit., mottled
383'
383' Ls, Wh, fine silty tex.
390' Dol., drab, med. cryst., Vit., Trl. sac.
400
Dol., drab " " " mottled,
435'
442' Dol., drab, fine xline to floury, Trl., weak
458' Dol., drab, " " hard, sac., Trl., hard.
465' Dol, " " " " clean
468' pol. lt. gray, " " " "
465' Ls., lt. grn. gray, soft silty text. cavities.
468' Ls, Wh, porcellain text.,
Dol, drab, med. xline
Ls, dol., calc., drab, silty text.
Dol, drab, f-M cryst.; porous.
500
570'
Dol., drab gray, f-cryst. hard
575' Dol., pale green, silty text.
Miss-Kinderhook
Maynes Creek
Chapin
Sheffield
Lime Creek
Owen
Cerro Gordo
Juniper Hill
Shell Rock (?)
Silurian, Wapsipinicon (?) & Cedar Valley
516'
560'
580'
600'
Dol., drab, f-M. cryst., hard, sub Trl.
Dol., calc., M. drab to gray, V. fine sandy Text.
Dol., calc., drk. drab, V. fine sand, Text., soft, Trl.
Mc Craney
Chapin
Aplington
Elev. Beeds lake park is approx Hampton Elev. + 50'-120'
1137' exact = c.e.

Memorandum

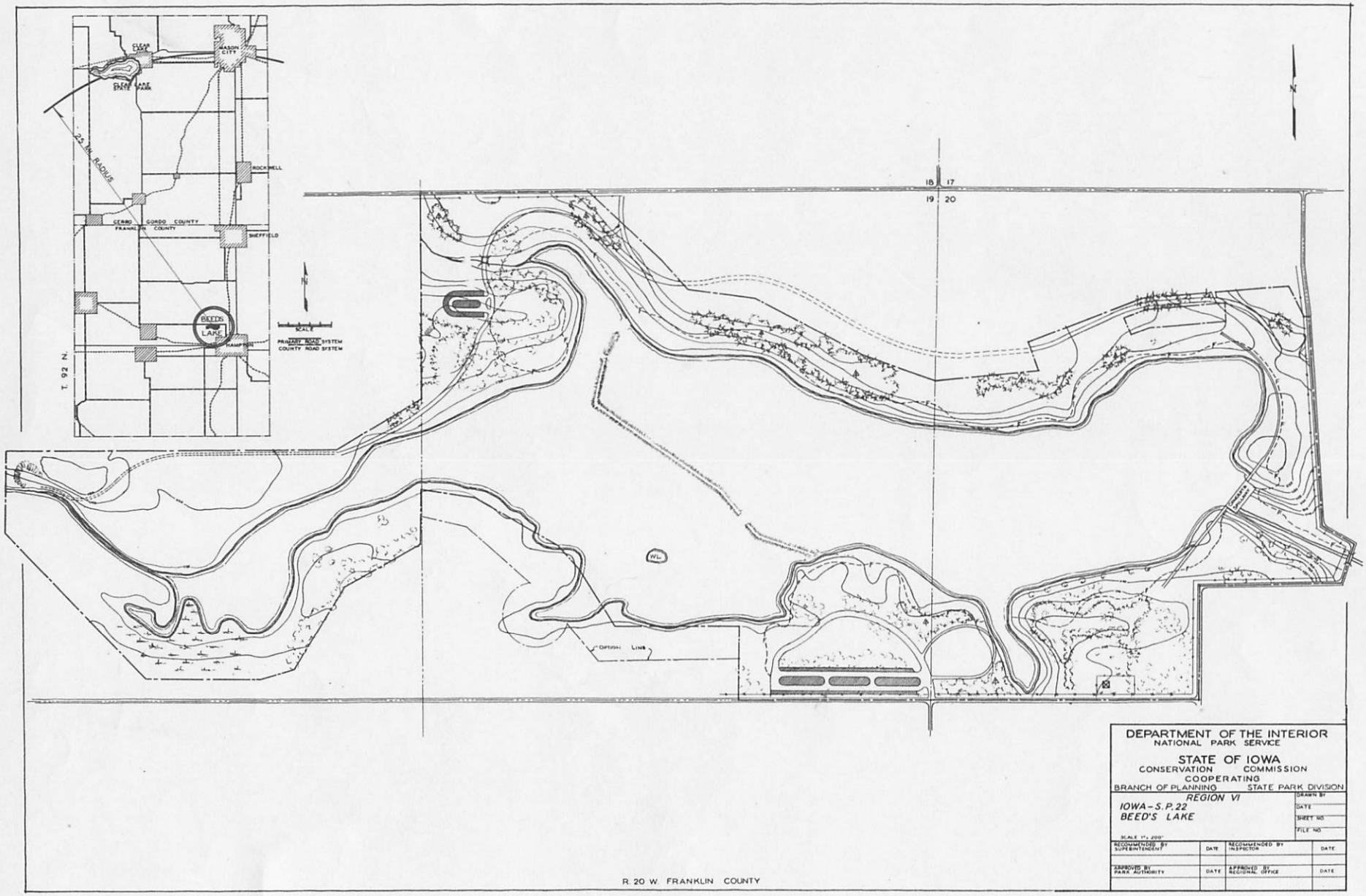
Re: Beeds Lake St. Pk well (W-0662) Aug 15, 1967

Although I am not sure – the location of the Beeds Lake State Park well (W-0662) given on the log and on the blue print in the well folder does not seem to be in the near vicinity of the lake. The location as given is NE¼ SE¼ sec. 20-92-20W. This would place it about half a mile east and south of the lake.

If the well is located near the dam at the east end of the lake as originally proposed the the site would appear to be approximately the SE¼ NW¼ sec. 20. A visit to the well is needed to verify this.

AJ Horick

Franklin Co.



DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

STATE OF IOWA
CONSERVATION COMMISSION
COOPERATING
BRANCH OF PLANNING STATE PARK DIVISION
REGION VI

IOWA-S.P.22
BEED'S LAKE

SCALE 1" = 200'

RECOMMENDED BY SUPERINTENDENT	DATE	RECOMMENDED BY INSPECTOR	DATE
APPROVED BY PARK AUTHORITY	DATE	APPROVED BY REGIONAL OFFICE	DATE

DRAWN BY
DATE
SHEET NO.
FILE NO.

Franklin

March 9, 1937

Mr. H. W. Groth, Chief
Lands & Waters Division
Iowa State Conservation Commission
Des Moines, Iowa

Dear Sir:

Your letter of February 23 has been before me for some time, but because of numerous field trips and teaching duties I have not had proper opportunity to make reply. A few days later a letter from Mr. Price addressed to Professor Trowbridge was referred to me for reply. I will answer both letters at this time.

On July 30, 1936, I addressed a letter to Mr. Hutton, carbon copy to Mr. Wilson and Mr. Behrens, Superintendent at the State Park 22, outlining the water possibilities in a general way for the area of Beed's Lake State Park near Hampton. Early in August of the same year I had the opportunity to stop at Hampton and make an inspection of the local geology and circumstances in connection with the water development project. At that time I was informed that the plans called for the development of a well at the custodian's cottage. Accordingly, I addressed a letter to Mr. Hutton under date of August 7 making certain modifications in my original statement and giving a more complete outline of the geological circumstances of the area.

After a study of the topographic map and the general lay-out of the water distributing system which shows the proposed well near the northeast end of the dam at an elevation of about 1137 feet, will make further statements concerning the geological formations that may be expected. I assume that the contour elevations are related to sea level

datum and have computed the various depth values on this basis.

At the surface of the well site or within a foot or two the upper part of the silty and dolomitic Hampton beds will be encountered. This material should continue for approximately 70 feet and will then be underlain by silty shale for 50-55 feet, which in turn is underlain by alternating limestone and shale beds for 90-100 feet. Below these upper beds of the Hampton formation the Maple Mill formation of the Kinderhook series has a thickness of between 60 and 70 feet, making a total of approximately 300 feet to the top of the Devonian limestone. It may be necessary to drill 100-150 feet into the Devonian limestone before a sufficient supply of water is obtained.

In many of the farm wells of the vicinity a sufficient supply of water is obtained from the Hampton beds at depths of less than 100 feet. However, for public consumption in a state park, giving consideration to quantity and purity, the well should not be completed in the upper beds but should be extended to a total depth as indicated above, or about 400-450 feet. The casing should be set firmly at the base of the Maple Mill member of the Kinderhook shale and an adequate test run for water shut-off. This will elimate the possibilities of surface or shallow water contamination. Such a test can be made adequately by the use of fluorescine dye and by bailing with a plug set at the bottom of the casing and checking for water leakage.

The top of the Maquoketa shale should be reached at a depth of about 615-625 feet, and in no case should the well be carried below this level.

I will be pleased to learn when this contract is awarded and information on the character of the well to be constructed. We are very anxious to keep in touch with the projects on which we advise in order that we may obtain a full check on our recommendations and in case of variations have full knowledge of the circumstances that caused the changes. This is the best for us to refine our records and better our recommendations. You will be of service if you will keep me advised when the contract is let.

We will appreciate your including in your specifications the stipulation that a complete set of cuttings, showing every change of rock formation and taken at intervals of not more than 5 feet, be preserved and sent to the Geological Survey before you accept the job and give your final O.K.

Yours very truly,

A. C. Tester

ACT:A
cc W.O. Price Ames-

Hampton – City Curb 1116

Park – Curb 1137

Base of Kinderhook Marsh @ 140' 976'

Top of Sheffield (?) 230' 886'

Base of Sheffield (?) 290' 876'

Top of Tuscarora 595' 521'

161' 976

251' 886

311' 876

616' 521

1160
37
23

164
23
184

257
23
274

320
161
159

Sheffield (?) 60' thick

5

Iowa State Conservation Commission

10TH AND MULBERRY

Des Moines, Iowa

MEMBERS OF THE COMMISSION

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H. W. GROTH,
DIVISION OF LANDS AND WATERS

Feb. 23, 1937.

Dr. A. C. Tester,
Iowa Geological Survey,
Iowa City, Iowa.

Subject: Proposed well at Beed's Lake State Park
Hampton

Dear Dr. Tester:

We are proposing to construct a well and water distribution system in Beed's Lake State Park northwest of Hampton in the very near future.

Several months ago you made a report regarding the geological conditions in this park in connection with a possible well somewhere on the south side of the lake.

We now propose to construct the well on the hillside near the north end of the dam, and we would appreciate receiving a report from your office as soon as possible on the possibilities and desirability of constructing a well at this location, so that we can submit a porject to the National Park Service for this work.

Very truly yours,

H. W. Groth

sH. W. GROTH, Chief
Lands & Waters Division

HWG.F

3.75

6

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

Ames, Iowa
February 24, 1937

Dr. A. C. Trobridge
Department of Geology
State University of Iowa
Iowa City, Iowa

Subject: ECW - Iowa SP-22, Hampton,
Water Lines

Dear Dr. Trobridge:

Mr. Groth of the Conservation Commission told me yesterday that he would ask you for a geological report on which we could base plans and contracts for a well which we wish to sink at Beeds Lake State Park northwest of Hampton. I am sending you a print of the pipe line layout which shows the location of the proposed well with sea level elevations by contours. I also enclose a copy of a preliminary report which Mr. Tester made on July 30, 1936, and in which he mentions need of sea level elevations in order to properly plot the rock formations.

Perhaps you can make this report without a field inspection. I might mention that this is the same location which you visited with me something over a year ago for inspection of the rock formation under the proposed dam, which is only a short distance from the well site. The dam is now completed.

I would like to submit a job request for this well very shortly, and would appreciate your sending us the report at your earliest convenience.

Yours very truly

W. O. Price
Procurement Officer

WOP:rd
cc--Behrens
cc--Groth

C O P Y

7

IOWA GEOLOGICAL SURVEY
Iowa City

July 30, 1936.

Mr. M. L. Hutton, Director
State Conservation Commission
Des Moines, Iowa.

Dear Mr. Hutton:

With reference to the project at Beed's Lake State Park northwest of Hampton, will say that there should be an ample supply of water available at a relatively shallow depth. Of course, I have not visited the site and am not familiar with the relationships of glacial drift and bedrock. In some locations the drift is known to be as much as 100 feet thick, whereas in other cases the bedrock lies within 10 feet of the surface or immediately beneath the top soil. Also, of course, I do not have a map showing the exact topographic position of the well.

I am assuming that your location as described will provide a site that has a relatively thin cover of glacial drift and that the limestone and dolomitic sand will be encountered at a relatively shallow depth. If the limestone is encountered at such a position, then you may expect 25 or 30 feet of such rock down to about 50 feet in depth and then a thick bed of shale with thin beds of limestone and siltstone will continue to approximately 220 feet in depth. Below this you will encounter the limestone of the Shell Rock and Cedar Valley formations of the Devonian which should contain ample water for park needs.

An important problem at your location will be the matter of maintaining a satisfactory sanitary condition of a deep well. This circumstance can be easily satisfied by proper construction of the well, setting the casing in the impervious shale, testing for water seal, and then drilling into the water-bearing zone. In other words, the shallow water circulating through the fractured limestone and dolomitic sand near the surfact must be completely shut off and the water developed from the lower beds.

The above information is preliminary and tentative, as it would be desirable to make a field inspection before attempting to supply more exact information. In addition, the precise elevation related to sea level is necessary for accurate calculation of formations. If you will send me this value, I will be glad to revise my depth and thickness estimated.

Yours very truly,

(Signed) A. C. TESTER

ACT:A
cc- Mr. C. H. Wilson
Superintendent, State Park 22

Trowbridge

August 7, 1936

Mr. M. L. Hutton, Director
State Conservation Commission
Des Moines, Iowa

Dear Mr. Hutton:

With further reference to your inquiry concerning the proposed well at the custodian's house at the State Park at Hampton and my letter to you relating to this project dated July 30, will say that I had an opportunity to visit the site on my last trip northwest and obtained some additional information.

The site of the proposed well is at an elevation of 1160 feet. The exposures in the immediate vicinity, as at the dam, are of the typical Hampton formation of the Upper Kinderhook group. The well will pass through approximately 20-30 feet of glacial material and then enter the solid silty and dolomitic Hampton beds. Such material should continue for a thickness of approximately 70 feet which will be underlain by silty shale for approximately 50 feet, underlain by alternating limestone and shale beds for 90 feet, underlain by gray calcareous Maple Mill shale for 60 feet--making a total of approximately 290 feet to the top of the Devonian limestone. It may be necessary to drill approximately 100 feet into the Devonian limestone before a sufficient supply of water is obtained.

In many of the farm wells of the locality a sufficient supply of water for farm purposes is obtained less than from the Hampton beds at depths of approximately 100 feet. However, for park purposes, giving consideration to quantity and purity, the well should not be completed in the upper beds but should be extended to a total depth of approximately 375-400 feet to develop water from the Cedar Valley stage of the Devonian. The casing should be set firmly at the base of the Kinderhook shale and an adequate test run for water shut-off. This will eliminate the possibilities of surface or shallow water formation contamination.

We are very anxious to follow the construction of a well in this locality and will appreciate advice on the letting of a contract so that we can make first hand observations and collection of samples in sufficient detail to work out some of the important stratigraphic history of the locality.

Yours very truly,

A. C. Tester

ACT:A
CC: Mr. C. H. Wilson
Mr. E. F. Behrens

1 C

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
STATE PARK DIVISION

Elm Lodge, Ames, Iowa,
July 18, 1936.

Dr. A.C. Tester
State Geologist
University of Iowa
Iowa City, Iowa

Attention: Mr. Hershey

Subject: Iowa SP-22, Hampton,
Drilling of Well.

Dear Mr. Hershey:

As I mentioned to you in our telephone conversation this morning, we anticipate drilling a well at Beed's Lake State Park, which is about 3 miles northwest of the town of Hampton in Franklin County. We anticipate drilling this well near the site of the old farmhouse at the southeast corner of the property. This well will be located approximately 300 feet south of the south bank of the lake. There is at present a well near the old farmhouse. To the best of our knowledge this well is either 85 feet deep or 125 feet deep.

We would appreciate very much a report from your office as to the approximate depth necessary in order to obtain a supply of water adequate for park purposes, which we consider to be approximately 20 gallons per minute.

Please send this report to Mr. M. L. Hutton, Director of the State Conservation Commission at Des Moines, and copies of the report to the ECW Office, Elm Lodge, Ames, and to Camp SP-22, Hampton, Iowa.

Very truly yours,

C. H. Wilson

C. H. Wilson,
Alternate Procurement Officer.

CHW:jh
cc - Mr. Belousek
cc - Supt. SP-22
cc - Ingalls
cc - Koerner

IOWA GEOLOGICAL SURVEY
In Cooperation with U. S. Geological Survey

W-0662

RECORD OF WELL

Location:

Town: Hampton (N E / S W); County Franklin E.

NE. SE sec. 20 T. 92 N., R. 20 W. Marion Twp.

Well name and number Beeds Lake State Park

Owner _____ Address _____

Tenant _____ Address _____

Contractor McCutcheon Well Co. Address Des Moines

Drillers R. J. Holmes

Drilling dates fall 1937 to Feb. 1938

Well data:

Elevations: Drilling curb 1137 feet; Land surface _____ feet

Determined by _____

Topographic position upland

Total depth: Reported _____ feet, Measured 600 feet

Drilling method Drilled.

Hole and casing data 10" casing from 0-162'6". 8" from 150'6"-325'. 6" from 307'4"-453'. slotted below 8" casing. Lead seal at 150'6"

(Give amount, size, kind, and depth of all casing; type and position of seals and packers; cementing; how finished--perforated pipe, screen, gravel pack, open hole, etc.)

Original depth to water _____ ft. above/below _____ Date _____

Original elevation of water level _____ ft.; Source of data _____

Sources of water: Principal Cedar Valley; Others _____

Production data: Date _____

Static depth to water 48' Measuring point _____

Pumping level 75 at 50 g.p.m.

Specific capacity 2 g.p.m. per ft. drawdown; Temperature 49½ °F.

Pump data; Type pump cylinder Column Dia. _____ Length 205

Cylinder or bowls: Dia. _____ Length _____ Suction pipe 22

Power _____ Airline _____

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

Use of water Public Drinking

WATER ANALYSES (in parts per million)

Date sampled	Feb 9, 1938			
Sampled by	H.G. Hershey			
Total solids	498.0			
Insoluble matter	12.0			
Alkalinity (Meo)	325.0			
Alkalinity (Phn)	0.0			
pH	7.0			
$Fe_2O_3 + Mn_2O_3 + Al_2O_3$	3.0			
Alkali as sodium	29.3			
Calcium	97.6			
Magnesium	27.4			
Iron (unfiltered)	0.5			
Manganese	0.05			
Nitrate	0.00			
Fluoride	2.5			
Chloride	11.0			
Sulfate	73.9			
Bicarbonate	396.5			
Hardness (ppm)	357.0			
Hardness (gpg)	20.9			

Remarks _____

Laboratory data: Sample storage location _____

Sample range 0-600 No. spls. 123 No. dupls. & cond. 118 P.G.

Spls. prepared by _____ Washed range _____ by _____

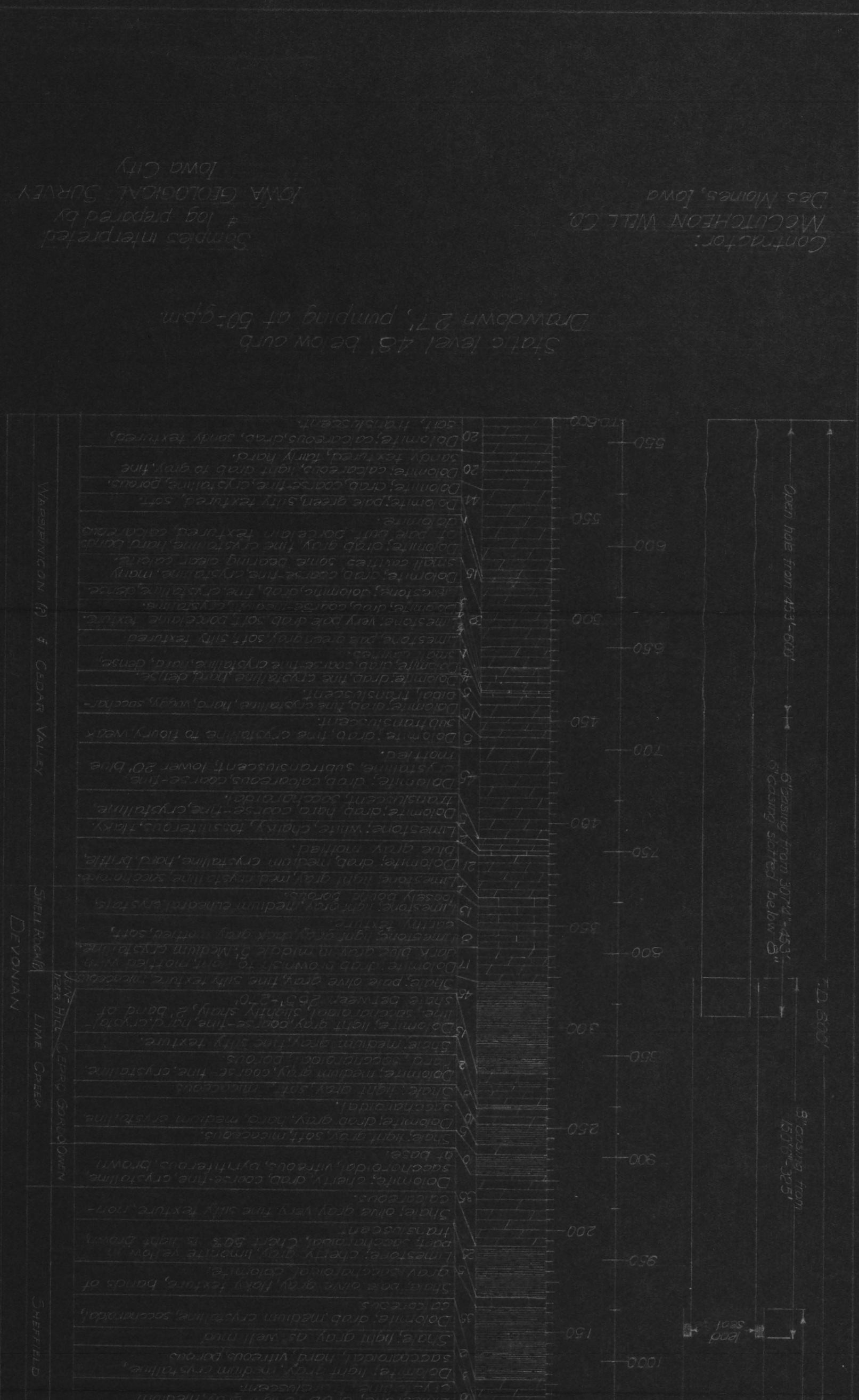
Driller's log and cond. _____

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

Microscopic study yes strip log County's Consultant, Elias & Harris

Gen. log yes Correl. by _____

W. Topper 3-15-38


W-666
Hampton, Iowa
Deeds Lake State Park Well
Drilled 1935
Drilling started: 1937
Drilling completed: February 1985
Location: 3 miles NW of Hampton
NE¼ of SE¼ Sec. 20, T. 92 N., R. 20 W.
Vertical Scale 1" = 50'
Elevations referred to sea level
Depth, in feet, below curb
Curb Elevation 1137
Feet
Description
Clay, glacial, brown, pebbly, silty & sandy
Limestone, yellow brown, chalky, soft, fine
sandy texture, badly weathered, part top,
porous throughout. Chert is white to light gray
brown, translucent, non-fossiliferous
Sandstone (dolomitic) yellow brown, grain size ¼
to ½ mm., even grained.
Dolomite, drab, coarse-textured, hard, dense,
Limestone, white, chalky, fossiliferous, flaky.
Dolomite; drab hard coarse-textured
crystalline, subtransluscent lower 20' blue
mottled.
Dolomite, drab, calcareous, coarse-textured
Limestone, light gray, medium crystalline, hard, brittle,
Dolomite; drab, medium crystalline, hard, brittle,
blue gray mottled.
Limestone: white, chalky, fossiliferous, flaky.
Dolomite: drab hard coarse-textured
transluscent, saccharoidal.
Dolomite, drab, coarse-textured
Limestone, light gray, medium crystalline, saccharoidal
loosely bound porous.
Limestone, dark gray, medium crystalline, hard, dense,
calcareous.
Dolomite: drab fine crystalline, hard, dense,
Limestone: very pale green gray, soft, silty texture
Dolomite, drab, coarse-textured, crystalline,
limestone, dolomitic, drab, fine crystalline, dense
Dolomite: drab coarse-textured, crystalline,
small cavities some bearing clear calcite,
Dolomite; drab gray fine crystalline, hard compact
in pore butt, porcelain texture, calcareous
dolomite
Dolomite; pale green, silty texture, soft,
Dolomite; drab, coarse-textured, crystalline,
Dolomite; calcareous, fine crystalline,
sandy texture, fairly hard.
Dolomite; drab, coarse-textured, crystalline,
Dolomite; calcareous, drab, sandy texture,
soft, transluscent.
Dolomite; drab, fine crystalline, hard, dense,
Dolomite, drab, coarse-textured, fine crystalline,
sand, cavities.
Limestone, pale green gray, soft, silty texture
Limestone: very pale drab soft, porcelaine texture.
Dolomite, drab, coarse-textured, crystalline,
Limestone, dolomitic, drab, fine crystalline, dense
Dolomite: drab coarse-textured, crystalline,
small cavities some bearing clear calcite, many
Dolomite; drab gray fine crystalline, hard compact
in pore butt, porcelain texture, calcareous
dolomite
Dolomite; pale green, silty texture, soft,
Dolomite; drab, coarse-textured, crystalline,
Dolomite; calcareous, fine crystalline,
sandy texture, fairly hard.
Dolomite; drab, coarse-textured, crystalline,
Dolomite; calcareous, drab, sandy texture,
soft, transluscent.
Shale; olive gray, fine silty texture, non-
calcareous.
Limestone; cherty gray, limonite veined
part saccharoidal, Chert 50% is light brown
transluscent
Shale; dark olive gray, flaky texture, bands of
gray saccharoidal dolomite.
Dolomite: drab, medium crystalline, saccharoidal,
calcareous
Shale; light gray as well mud
Dolomite; light gray, medium crystalline,
saccharoidal, hard, vitreous porous
Dolomite, drab, fine crystalline, hard, brittle,
Limestone, light gray, medium crystalline, saccharoidal
Dolomite; drab, coarse-textured, crystalline,
Limestone, dark gray, medium euneral, brittle,
loosely bound porous.
Limestone, light gray, medium crystalline, hard, dense,
Dolomite; drab, fine crystalline, hard, dense,
dark blue gray in middle 5'; Medium crystalline,
Shale; pale olive gray, fine silty texture, impregnated
Shale determ 265'-270'
Limestone, saccharoidal, slightly sandy, 2' band of
Dolomite, light gray, coarse-textured, hard, crystal-
line, saccharoidal, slightly sandy, 2' band of
Shale, medium grey, fine silty texture.
Dolomite, medium grey, coarse-textured
saccharoidal, porous
Shale, light olive gray, soft, micaceous
Dolomite, drab gray, hard medium crystalline,
saccharoidal.
Shale, light gray, soft, micaceous.
Dolomite; drab gray, hard medium crystalline,
saccharoidal, vitreous, oyliferous, brown
at base
Dolomite; cherty, drab, coarse-fine, crystalline,
Shale, olive gray very fine silty texture, non-
calcareous.
Limestone; cherty gray, limonite veined
part saccharoidal, Chert 50% is light brown
transluscent
Shale; dark olive gray, flaky texture, bands of
gray saccharoidal dolomite.
Dolomite: drab, medium crystalline, saccharoidal,
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saccharoidal, porous
Shale, light olive gray, soft, micaceous
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saccharoidal, vitreous, oyliferous, brown
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Dolomite; drab, medium crystalline, hard, dense,
Limestone, white, chalky, fossiliferous, flaky.
Dolomite: drab hard coarse-textured
crystalline, subtransluscent lower 20' blue
mottled.
Dolomite, drab, calcareous, coarse-textured
Limestone, light gray, medium crystalline, hard, brittle,
Dolomite; drab, medium crystalline, hard, brittle,
blue gray mottled.
Limestone: white, chalky, fossiliferous, flaky.
Dolomite: drab hard coarse-textured
transluscent, saccharoidal.
Dolomite, drab, coarse-textured
Limestone, light gray, medium crystalline, saccharoidal
loosely bound porous.

LAKE

PARK

ROAD

PARK BOUNDARY

FUTURE WATER LINE BY OTHER AGENCIES

Reduce 3" to 2"

LATERAL #2

Water El. 1134

SCALE 1"-100'

START JOB 143-B

PICNIC AREA

Sub. Lat. #1

Fountain

PUMP HOUSE

2" C.I Pipe 1+15 to 9+00

EL. DAM 1340

Proposed Wall

CREEK

Dike

Sub. Lat. #2

PICNIC AREA

Fountain

END JOB 143-B

Flushing hydrant

BATH HOUSE

Sub. Lat. #4

Fountain

PICNIC AREA

1" G.I Pipe

2" C.I Pipe 17+18 to 18+18

Water El. 1134.0

BOAT HARBOR

LATERAL #1

1½" G.I. Pipe

LATERAL #1

TOOL SHED

Sub. Lat. #3

CUSTODIANS HOUSE

BEEDS LAKE - HAMPTON S.P. 22 - WATER LINES JOB 143-B SHEET 1 of 2