

Hole F - Drilled April 1974

*Boulders
Location
74, 75*

Log, based on examination of drill cuttings generally at 5-ft intervals by A. Randall.

<u>Depth</u>	
0-8 feet	Gravel, mostly pebble sizes, sandy, silty, oxidized, weakly calcareous
8-15 feet	Till, predominantly clayey silt, oxidized, dark yellowish brown 10YR 4/2, weakly calcareous
15-18 feet	Gravel, sandy and probably silty; interbedded with thin layers of silt and clay near base
18-28 feet	Till, clayey, sticky, very few pebbles near top, moderately calcareous; mostly olive-grey 5Y 4/1, oxidized at base; 1/3 of pebbles are rounded.
28-36 feet	Gravel, sandy, variably silty, calcareous; thin layers of silty sand at 31 feet; water-yielding.
36-37 feet	Sand, medium to very coarse, pebbly, highly calcareous, clean, water-yielding.

Pebble counts by A. Randall

Depth (feet)	10	15	20	25	28	31	36
Total counted	13	39	25	23	42	63	58
Local shale, siltstone	13	30	23	18	30	46	37
Possibly local	-	1	-	-	2	-	-
Carbonated, dark or grey	-	2	-	2	5	13	11
Dolomite or argillaceous	-	1	-	-	1	1	1
Red sandstone, siltstone	-	1	-	-	-	-	2
Chert	-	-	-	-	1	-	-
White quartzite, ss	-	1	-	1	1	1	-
Anomalous sandstones	-	3	2	-	2	2	5
Igneous/metamorphic	-	-	-	2	-	-	2
% exotics	0%	21%	8%	22%	24%	27%	36%

(Till)

Well J - Drilled April 1974

Boulder
West 72, 73

Log, based on examination of drill cuttings generally at 5-ft intervals by A. Randall.

<u>Depth</u>	
0-11 feet	Sand, predominantly coarse to very coarse, pebbly, somewhat silty, non-calcareous, brown
11-14½ feet	Till, silty and clayey, calcareous, olive-gray; possibly interbedded with gravel at 14 feet.
14½-16 feet	Till, clayey, calcareous, gray; relatively few embedded pebbles and coarse sand.
16-24 feet	Till, clayey, calcareous, olive-gray; possibly interbedded with gravel at 16 and 20 feet.
24-27 feet	Sand, fine to very coarse, pebbly, calcareous.
27-32 feet	Gravel, coarse; some layers with matrix of very silty, clayey coarse sand; some openwork layers that were unsaturated when drilled and readily permeable to air.
32-35 feet	Till, olive-gray, silty, sandy.
35-43 feet	Sand, chiefly medium to very coarse, pebbly, calcareous, water-yielding.
43-47 feet	Gravel, pebble sizes, very silty and clayey; may include some till.
47-52 feet	Gravel and medium to very coarse sand, variably silty, some layers water-yielding.

Pebble counts by A. Randall

Depth (feet)	10	14	20	25	30	37-40	51
Total counted	28	16	31	44	37	60	40
Local shale, siltstone	25	14	22	33	29	46	30
Possibly local	-	-	2	5	6	2	-
Carbonates gray or dark	-	1	2	-	1	5	4
Dolomite or argillaceous	-	-	2	1	-	3	1
Red sandstone, siltstone	-	-	-	2	-	2	1
Chert	1	-	-	2	-	-	2
White sandstone	1	-	-	-	-	-	-
Other sandstone, shale	1	1	1	1	-	2	-
Igneous/metamorphic	-	-	2	-	1	-	2
% exotic	11%	13%	29%	16%	5%	20%	25%
			(Till)	(Till?)			

Hole E - Drilled May 1974

~~well 232~~
well 235

Log, based on examination of drill cuttings generally at 5-ft intervals by A. Randall.

Depth

0-12 feet	Gravel, sandy and silty, oxidized, weakly calcareous
12-23 feet	Till, clayey silt matrix, calcareous, unoxidized, gray; below 15 feet, distinct fissility but no textural stratification; below 19 feet, mostly oxidized, perhaps less gravel and more fine sand
23-37 feet	Gravel and coarse sand, silty, calcareous, generally non-water yielding
37-47 feet	Sand, fine to very coarse, pebbly, clean to slightly silty, calcareous; minor layers of silty gravel; generally water-yielding

Pebble Counts by T. Holecek

Depth (feet)	5	10	16-20	25*	46
Total counted	33	30	19	43	34
Local shale, siltstone	27	28	18	34	29
Possibly local	3	-	-	1	5
Carbonates	-	-	1	5	-
Red sandstone, siltstone	1	1	-	1	-
Chert, quartzite	1	-	-	-	-
Other anomalous sandstone	1	1	-	2	-
% exotic	9%	7%	5% (Till)	19%	0%

*Many exotic grains in granule gravel sizes (1/8")

Schedule date(s) February 1980 by A D Randall

Source(s) of Information Field notes by W. Boller

} Use different
pens or identify
by source codes

USGS: Hole M
Bouldin: # 88

Map

Lat

Long

Well owner N.Y. College of Agriculture and Life Sciences

Address

Other source

Driller Empire Soils Investigations

Date drilled November 1978 deepened, redeveloped _____

Method drilled* Wash boring developed* _____

Use Observation

Well depth 51 feet

Casing length(s) 41 feet

Diameter(s) 1 1/2" PVC flush-joint

Finish* Screen

Yield _____

Water level(s) 34.7 ft MP

Pumping level(s)

Measuring point(s) Top of 1 1/2-inch PVC coupling 2.5 ft above 1st surface

Date(s) Nov 16, 1978

Altitude and source 1240.92 = MP USGS levels

Type of pump None Depth of intake _____

Water quality Nitrogen analyses by owner

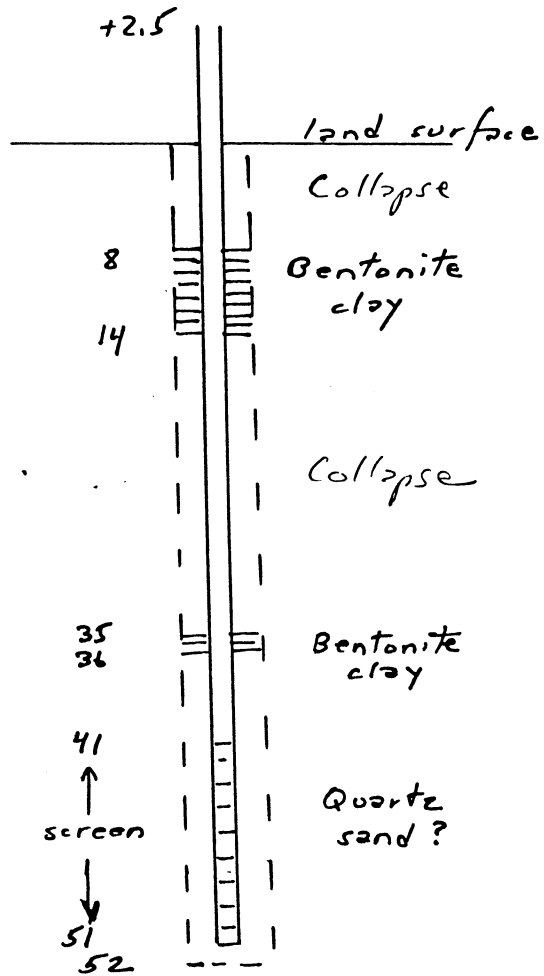
Treatment

Remarks (continue over) (Log, pumpage, location sketch)

Log attached sketch over

*See schedule for choices

USGS Hole M



Hole M - Drilled November 1978

*Drill
well 88*

Log, based on examination of drive cores generally at 5-ft intervals, by W. Buller and A. Randall.

Depth

0-2 feet	Topsoil, silty
2-8 feet	Gravel and coarse sand, silty, many rounded pebbles, loose
8-12 feet	Till, oxidized at top; contains a few rounded pebbles
12-36 feet	Gravel, coarse, and coarse sand, generally silty to very silty, unoxidized; unsaturated when drilled; loss of drill water at 22-24 feet and 30-31 feet indicates permeable materials; traces of lime cement at 36 feet
36-52 feet	Gravel, generally finer than above, and coarse sand; silty to moderately silty, loose; partly oxidized at top, unoxidized below; yields water readily 51-52 feet

Pebble counts by T. Holecek

Depth (feet)	5	25	50
Total counted	33	36	38
Local shale, siltstone	28	18	31
Possibly local	5	-	4
Carbonates	-	12*	-
Red siltstone, sandstone	-	1	-
Igneous/metamorphic	-	2	1
Anomalous sandstone, siltstone	-	3	1
Chert	-	-	-
Quartzite	-	-	1
% erratics	0%	50%(?)	8%

*Silty and/or sandy, and unusually angular compared to carbonates in nearby holes, probably exotic

This well failed and no samples
taken

Schedule date(s) February 1980 by A.D. Pandell } Use different
Source(s) of information field notes by W. Buller } pens or identify
by source codes

Map

USGS: Hole R

Bouldin #90

Lat

Long

Well owner New York College of Agriculture and Life Sciences
Address

Other source

Driller Empire Soils Investigations

Date drilled November 17, 1978 deepened, redeveloped _____

Method drilled* Wash boring developed* _____

Use Observation

Well depth ⁴⁹ ~~39~~ feet

Casing length(s) 39 feet

Diameter(s) 2" PVC flush-joint

Finish* Screen

Yield _____

Water level(s) 22.9 ft Land
surface

Pumping level(\$)

Measuring point(s) Top of 2" PVC coupling

Date(s) Nov 21, 1978

Altitude and source 1216.26 = mp USGS levels

Type of pump None Depth of intake _____

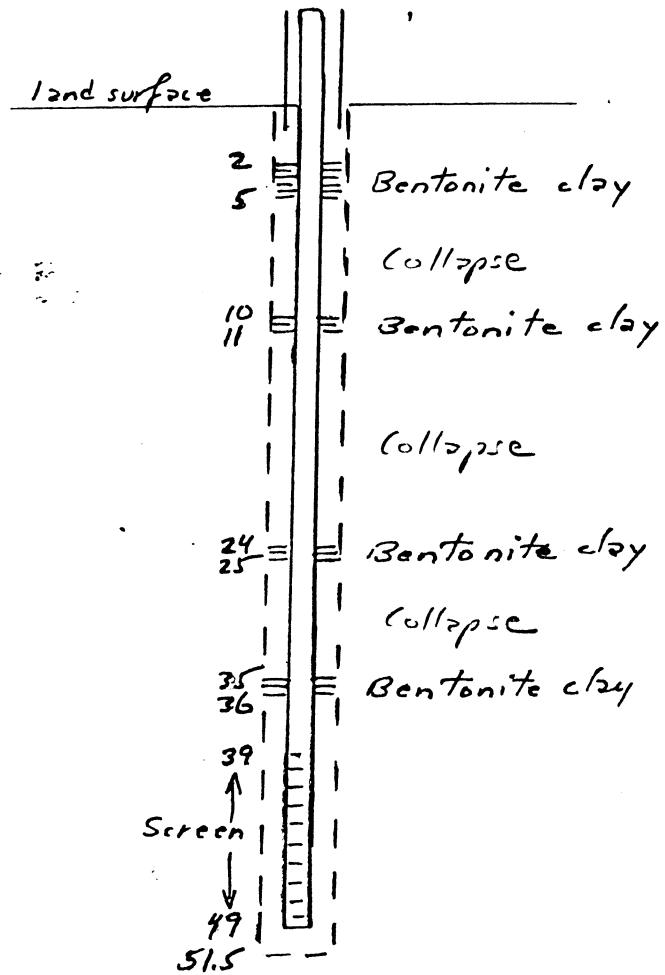
Water quality

Treatment

Remarks (continue over) (Log, pumpage, location sketch)

Well reported plugged soon after completion

*See schedule for choices



USGS Hole R

Hole R - Drilled November 1978

Failed

Log, based on examination of drive cores at 5-foot intervals by W. Buller and A. Randall.

Depth

0-14 feet	Gravel, with subordinate coarse sand, silty, oxidized, most pebbles rounded
14-50 feet	Gravel, with subordinate coarse sand, silty to moderately silty, gray; 80 percent or more of most cores range from coarse sand to 2-inch pebbles or pebble fragments; layers 0.1 to 0.2 feet thick of fine to very coarse sand, fine to medium sand, and layered silt noted at 16 and 33 feet depth; coarser gravel 18-20 feet
50-52 feet	Sand, medium to very coarse, pebbly, moderately to slightly silty, loose

Pebble counts by T. Holecek

Depth (feet)	10	19	40	46
Total counted	30	33	26	25
Local shale, siltstone	30	28	12	16
Carbonates	-	2	7	8
Red sandstone	-	-	1	-
Anomalous sandstone	-	-	6	-
Igneous/metamorphic	-	-	-	1
% erratics	0%	6%	54%	36%
Possibly local	-	3	-	-

Schedule date(s) February 1980 by A D Randall

Source(s) of information Field notes by W. Buller

} Use different
pens or identify
by source codes

USGS: Hole S

Boulder: # 99

Map

Lat

Long

Well owner N.Y. College of Agriculture & Life Sciences

Address

Other source

Driller Empire Soils Investigations

Date drilled Nov 13 1978 deepened, redeveloped _____

Method drilled* Wash boring developed* _____

Use Observation

Well depth 37 feet

Casing length(s) 22 feet

Diameter(s) 2" PVC flush joint

Finish* Screen, sand pack, inside open hole probably in bedrock

Yield _____

Water level(s) 13.50 - .63 = 12.87 feet MP Pumping level(s)

Measuring point(s) Top of PVC coupling 2.6 ft above land surface

Date(s) Nov 15, 1978

Altitude and source 1200.00 = MP USGS Levels

Type of pump NONE Depth of intake _____

Water quality

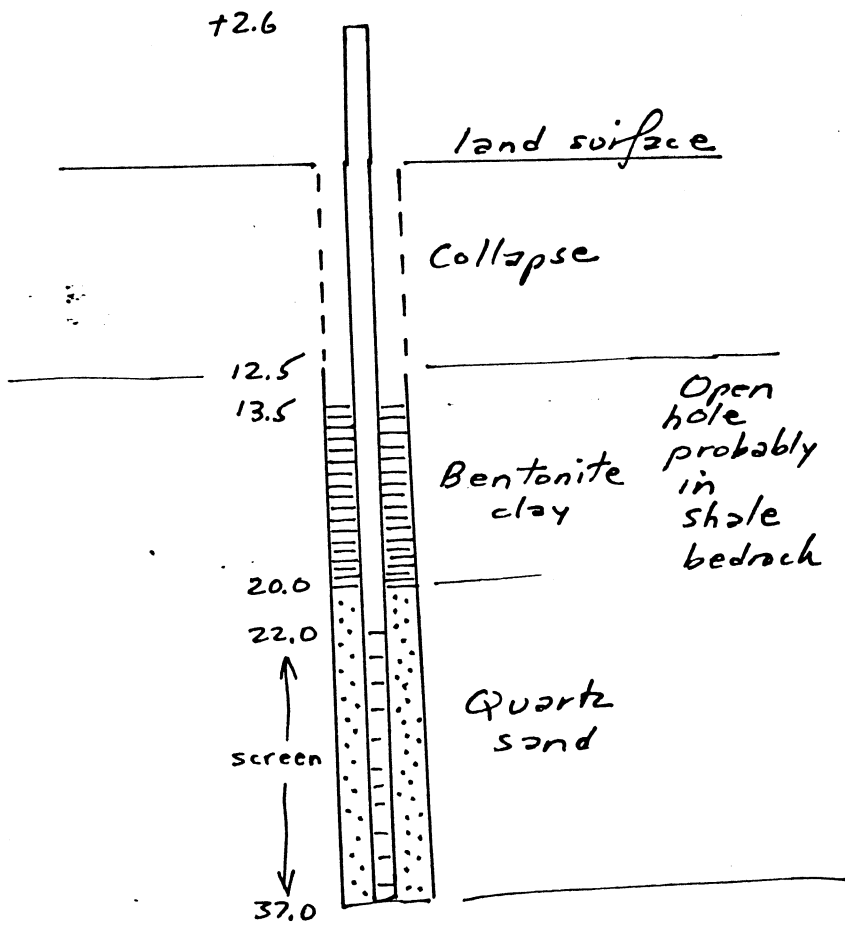
Treatment

Remarks (continue over) (Log, pumpage, location sketch)

Sketch over, log attached

*See schedule for choices

USGS Hole 5



Hole S - Drilled November 1978

Log, based on drilling operation and on examination of drive cores (above 12 ft) and wash samples by W. Buller and A. Randall.

Depth

0-2 feet	Topsoil
2-12½ feet	Gravel, coarse, and sand; moderately silty, silty at base; loose
12½-36 feet	Shale and/or siltstone, unoxidized, soft; carbonate fossils(?) 31-35 ft. (Top 5-10 ft may possibly be till, but not likely)
36-37 feet	Siltstone, unoxidized, hard

Pebble counts by T. Holecek

Depth (feet)	5	10
Total counted	37	28
Local shale, siltstone	27	26
Carbonates	-	-
Red sandstone, siltstone	3	-
White or pink sandstone	2	1
Quartzite, quartz	2	-
Igneous/metamorphic	-	1
% erratics	21%	7%

Schedule date(s) Feb 1980 by N D Randall

Source(s) of information Field notes by W. Buller

} Use different
pens or identify
by source codes

Map

USGS: Hole T2

Lat

Long

Bouldin: # 98

Well owner N.Y. College of Agriculture and Life Sciences

Address

Other source

Driller Empire Soils Investigations

Date drilled Nov 9-10, 1978 deepened, redeveloped _____

Method drilled* Wash boring developed* _____

Use Observation

Well depth 50.5 ft

Casing length(s) 40.5 ft

Diameter(s) 2" Flush-joint PVC

Finish* Screen

Yield _____

Water level(s) 8.99 ft MP Pumping level(s) _____

Measuring point(s) Top of ^{PVC} coupling 2.50 ft above land surface

Date(s) Nov 13, 1978

Altitude and source MP = 1193.96 USGS levels

Type of pump None Depth of intake _____

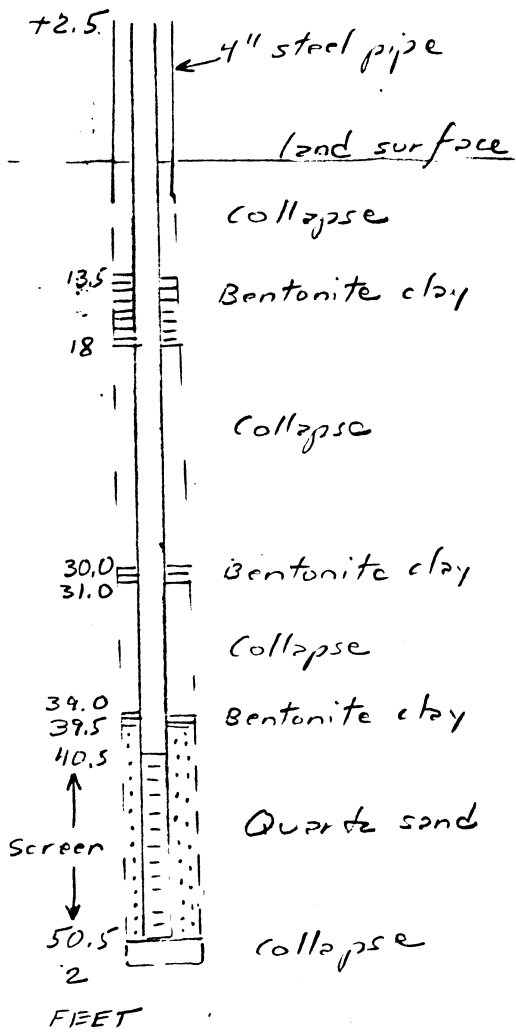
Water quality Nitrogen analyses by owner

Treatment

Remarks (continue over) (Log, pumpage, location sketch)

Log attached
Sketch over

*See schedule for choices



USGS Hole T2

Hole T2 - Drilled November 1978

Log, based on field examination of drive cores by Randall (T) and Buller (T2) and drilling behavior.

Depth

0-14 feet	Gravel and coarse sand, moderately to slightly silty, generally loose
14-19 feet	Gravel, coarse, silty, compact; not till (This unit 16-21 ft at nearby hole T)
19-23 feet	Sand, medium to very coarse, pebbly, loose, clean
23-62 feet	Gravel, generally coarse, with subordinate very fine to very coarse sand, moderately silty, generally loose; possibly firmer 27-38 feet

Pebble counts by T. Holecek (T or T2)

Depth (feet)	6	20	41	50
Total counted	29	38	50	29
Local shale, siltstone	20	26	26	17
Possibly local	-	-	4	-
Carbonates	-	2	6	4
Red siltstone sandstone	1	5	2	1
Igneous/metamorphic	2	2	1	1
Anomalous sandstone, siltstone	6	3	8	6
Chert	-	-	1	-
Quartzites	-	-	2	-
% erratics	31%	32%	40% ⁺	41%

Schedule date(s) Feb 1980 by A D Randall } Use different
Source(s) of information field notes by W. Goller } pens or identify
by source codes

USGS: T3
Bouldin #97

Map

Lat

Long

Well owner N.Y. College of Agriculture & Life Sciences

Address

Other source

Driller Empire Soils Investigations

Date drilled Nov 13, 1978 deepened, redeveloped _____

Method drilled* Wash boring developed* _____

Use Observation

Well depth 22.5 feet

Casing length(s) 17.5 feet

Diameter(s) 2" PVC Flush-joint

Finish* Screen

Yield —

Water level(s)

Pumping level(s)

Measuring point(s) Top of PVC coupling 1 ft above land surface

Date(s)

Altitude and source 1193.26 = MP USGS levels

Type of pump NONE Depth of intake _____

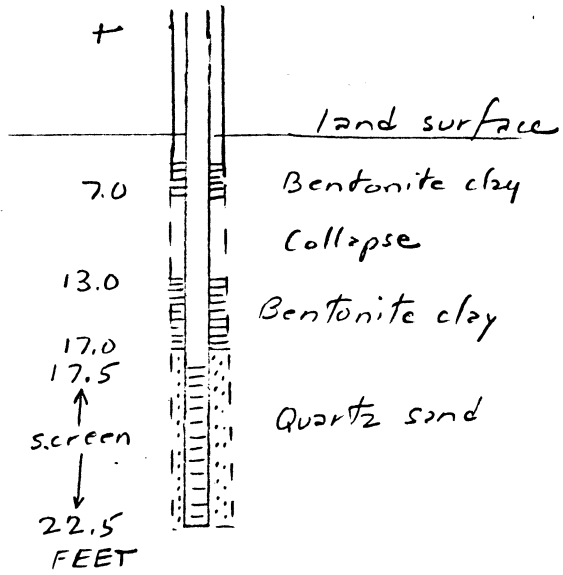
Water quality

Treatment

Remarks (continue over) (Log, pumpage, location sketch)

*See schedule for choices

USGS HOLE 3



SINCE 1912



Industrial and Municipal Well Water Supply

GROUND WATER SURVEYS

GEOLOGICAL • GEOPHYSICAL • HYDROLOGICAL

STEWART BROS. INC.
SCHUYLER J. STEWART
PRESIDENT

Mailing address P.O. BOX 976, SCHENECTADY, N.Y. 12301
OFFICE and PLANT - STATE ST. at BALLTOWN RD.

February 8, 1980

N.Y.S. College of Agriculture & Life Science
Cornell University
Dept. of Animal Science
Frank B. Morrison Hall
Ithaca, New York 14853

RE: Cornell Science Teaching and Research Farm
Well Capacity Tests
Well No. 1 and Well No. 2

Attention: Mr. Barth E. Mapes

Dear Mr. Mapes:

Enclosed please find copies of the Well Logs and Pumping Logs together with sketch of location of these Wells.

If we can be of further service, please call.

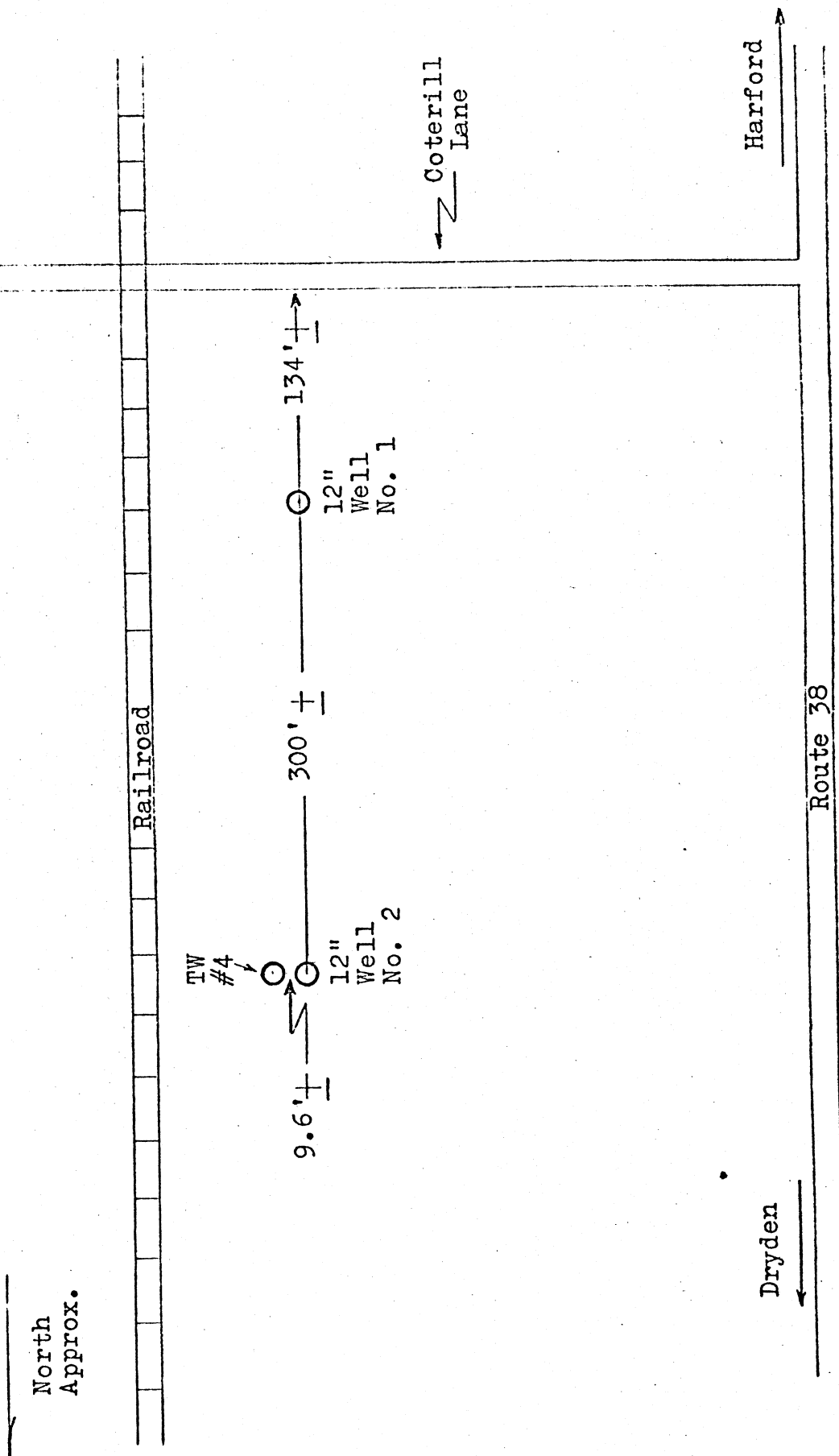
Very truly yours,
STEWART BROS INC.

Schuyler J. Stewart
Schuyler J. Stewart

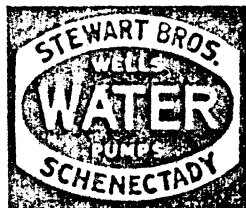
SJS:mk
Encl. Brochure.

Figure I

CORNELL UNIVERSITY * S.U.C.F. 1610
CORNELL SCIENCE TEACHING and RESEARCH FARM



SINCE 1912



Industrial and Municipal Well Water Works

GROUND WATER SURVEYS

GEOLOGICAL • GEOPHYSICAL • HYDROLOGICAL

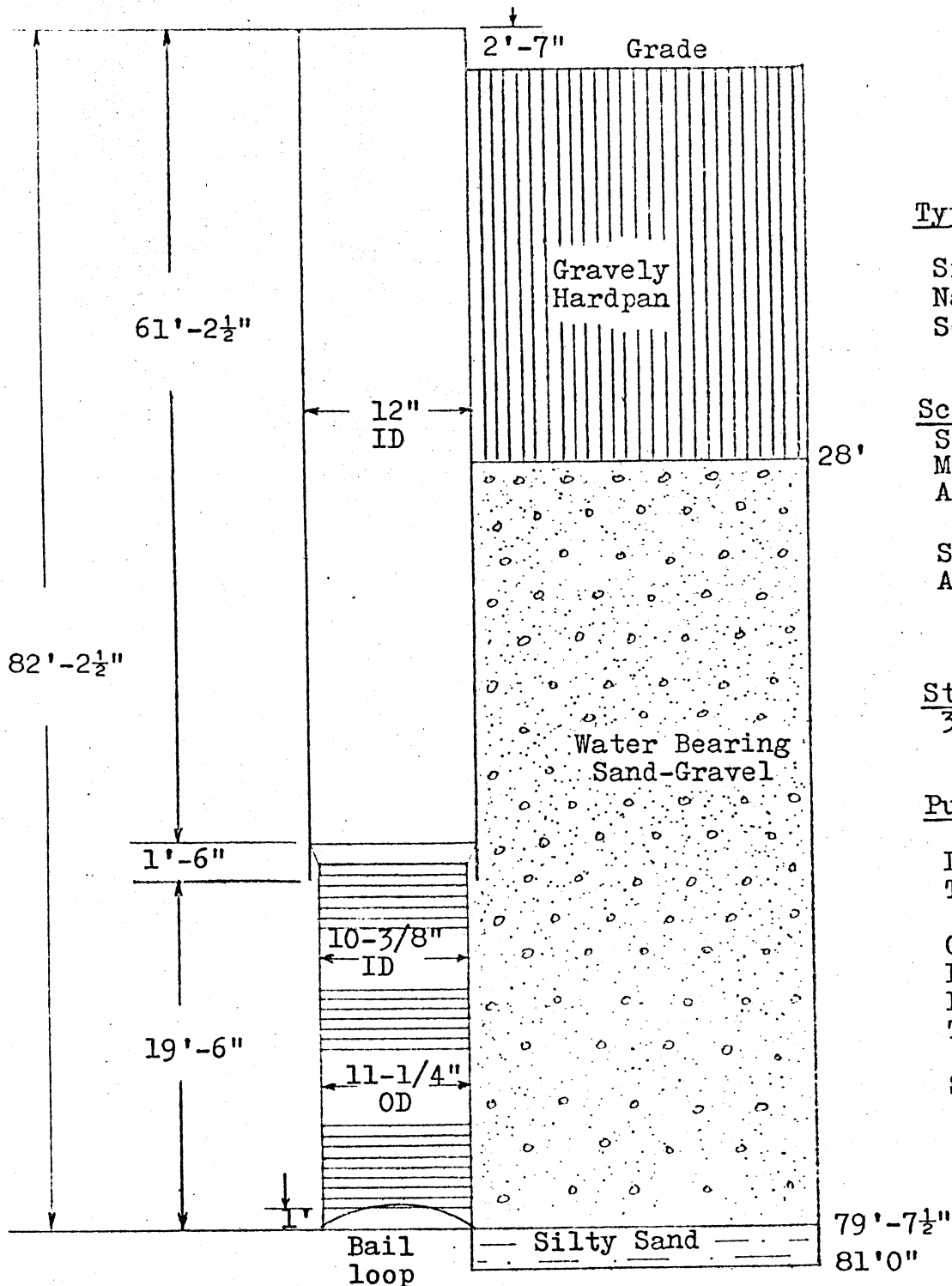
Office and Plant
STATE ST. at BALLTOWN RD.
TELEPHONE 518 - DI 6-2029

Address all mail to STEWART BROS. Inc., SCHENECTADY, N.Y. 12301
POST OFFICE BOX 976

12-inch Well No. 1

March 1971

Cornell University Animal Science Teaching
and Research Farm

Type Well:

Single Cased
Naturally Developed
Screened Well.

Screen:

Size..12" Nominal
Mfg..UOP Johnson
Alloy..Stainless
Steel
Slot size...#40 (.04)
Attachments..Standard
Screw

Static Level:...6.30'
3-24-71

Pumping Test:

Date:..Mar. 24-25, 1971
Type Pump...Deep Well
Turbine
GPM.....414
Draw down.....(.90')
Pumping Level..7.20
Test Duration..24 h

See Pumping Log

Location: Cornell University
 Animal Science Teaching & Research Farm

Pumping Log Data
 for 12" Well No. 1

Date Hour	Static Level	Pumping Level	Draw Down	G.P.M.	Temp.
March 24, 1971					
8:15 AM	6.30'				
8:30	--	6.90'	.60'	414.5	
9:00	--	6.90'	.62'		
9:30	--	6.94'	.64'		
10:00	--	6.95'	.65'	428.5	
10:30	--	6.97'	.67'		
11:00	--	6.98'	.68'	428.5	
11:30	--	6.97'	.67'		
12:00 PM	--	6.98'	.68'		
12:30	--	6.97'	.67'	414.5	
1:00	--	6.98'	.68'		
1:30	--	6.98'	.68'		
2:00	--	6.98'	.68'	414.5	
2:30	--	7.00'	.70'		
3:00	--	7.00'	.70'		
3:30	--	7.00'	.70'	414.5	
4:00	--	7.01'	.71'		
4:30	--	7.02'	.72'	414.5	46° F
5:00	--	7.03'	.73'		

Date Hour	Static Level	Pumping Level	Draw Down	G.P.M.	Temp.
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March 24, 1971

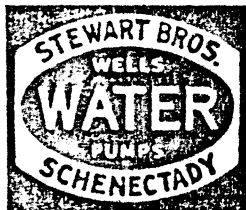
5:30 PM	6.30'	7.04'	.74'	414.5	
6:00	--	7.04'	.74'	414.5	
6:30	--	7.04'	.74'		
7:00	--	7.04'	.74'		
7:30	--	7.06'	.76'	414.5	
8:00	--	7.07'	.77'		
8:30	--	7.07'	.77'		
9:00	--	7.08'	.78'		
9:30	--	7.09'	.79'	414.5	
10:00	--	7.09'	.79'		
10:30	--	7.08'	.78'		
11:00	--	7.10'	.80'		
11:30	--	7.10'	.80'		

March 25, 1971

12:00 AM	--	7.10'	.80'		
12:30	--	7.12'	.82'		
1:00	--	7.13'	.83'		
1:30	--	7.14'	.84'		
2:00	--	7.14'	.84'		
2:30	--	7.15'	.85'		
3:00	--	7.15'	.85'		
3:30	--	7.16'	.86'		

Date Hour	Static Level	Pumping Level	Draw Down	G.P.M.	Temp.
March 25, 1971					
4:00 AM	6.30'	7.16'	.86'	414.5	
4:30	--	7.17'	.87'		
5:00	--	7.18'	.88'		
5:30	--	7.18'	.88'		
6:00	--	7.18'	.88'		
6:30	--	7.18'	.88'		
7:00	--	7.19'	.90'		46° F
7:30	--	7.17'	.87'		
8:00	--	7.35'	1.05'	543.	
9:00	--	7.37'	1.07'	532.	

SINCE 1912



Industrial and Municipal Well Water Works

GROUND WATER SURVEYS

GEOLOGICAL • GEOPHYSICAL • HYDROLOGICAL

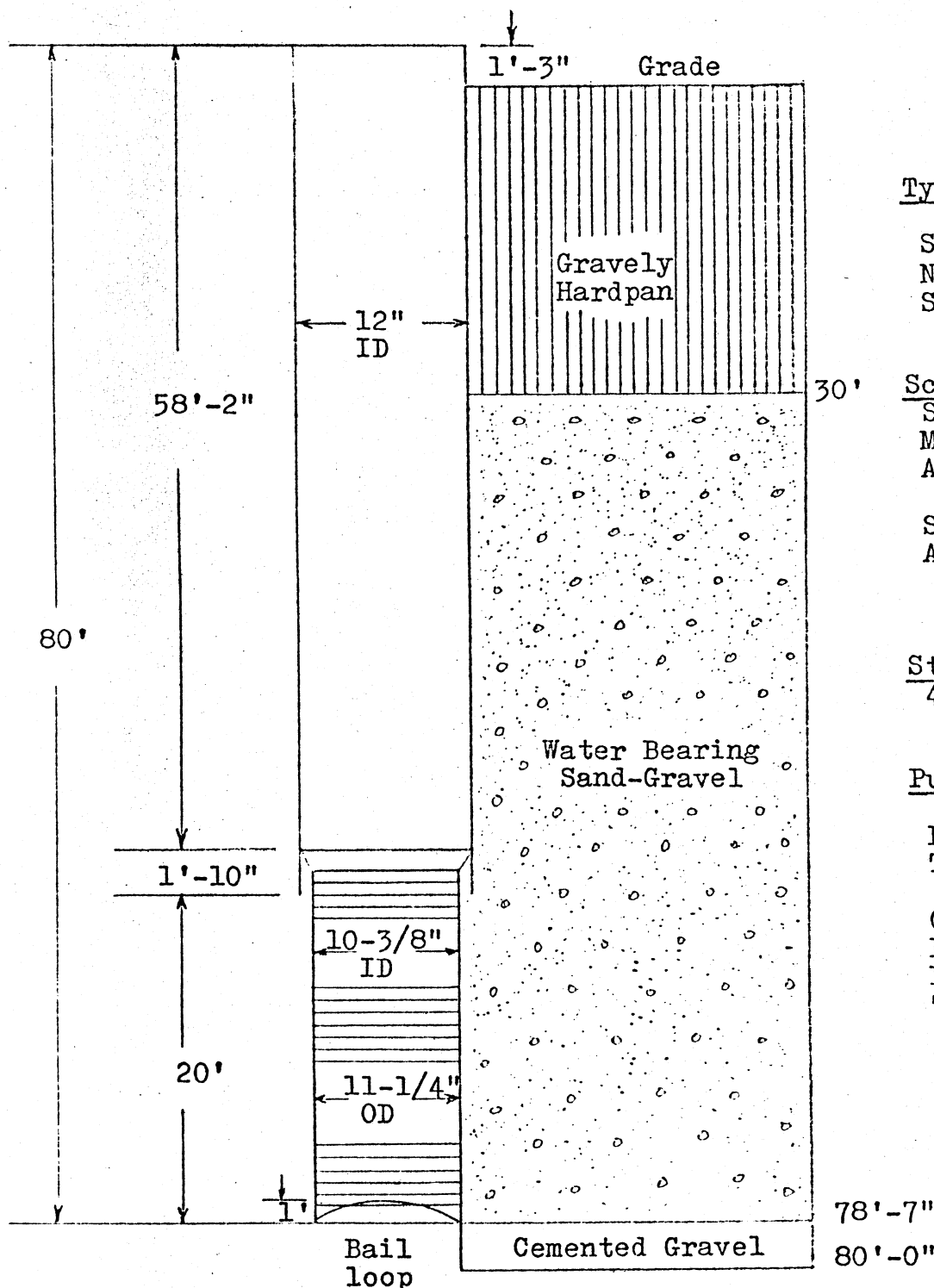
Office and Plant
STATE ST. at BALLTOWN RD.
TELEPHONE 518 - DI 6-2029

Address all mail to STEWART BROS. Inc., SCHENECTADY, N.Y. 12301
POST OFFICE BOX 976

12-inch Well No. 2

April 1971

Cornell University Animal Science Teaching
and Research Farm



Type Well:

Single Cased
Naturally Developed
Screened Well.

Screen:

Size..12" Nominal
Mfg..UOP Johnson
Alloy..Stainless
Steel
Slot size...#40 (.04")
Attachments..Standard
Screw

Static Level:...9.04'
4-28-71

Pumping Test:

Date..Apr. 28-29, 1971
Type..Pump..Deep Well
Turbine
GPM.....422
Draw down.....8.91
Pumping Level..17.95
Test Duration...24

See Pumping Log

Location: Cornell University
 Animal Science Teaching & Research Farm

Pumping Log Data
 for 12" Well No.2

Date Hour	Static Level	Pumping Level	Draw Down	G.P.M.	Temp.
April 28, 1971					
7:35 AM	9.04'				
8:03	--				
8:14	--	17.48'	8.44'	414	
9:03	--	17.81'	8.77'	422	
10:03	--	17.84'	8.80'	422	
11:03	--	17.86'	8.82'	422	
12:03 PM	--	17.89'	8.85'	422	
1:03	--	17.89'	8.85'	422	
2:03	--	17.90'	8.86'	422	
3:03	--	17.92'	8.88'	422	
4:04	--	17.93'	8.89'	422	46° F
5:04	--	17.95'	8.91'	422	
6:05	--	17.99'	8.95'	422	
7:04	--	18.00'	8.96'	422	
7:15	Pump Cut Off Check Oil				
7:20	Pump Cut On				
8:04	--	17.78'	8.74'	422	
9:04	--	17.84'	8.80'	422	
10:04	--	17.84'	8.80'	422	

Date Hour	Static Level	Pumping Level	Draw Down	G.F.H.	Temp.
April 28, 1971					
11:04 PM	9.04'	17.94'	8.90'	422	
April 29, 1971					
12:00 AM	--	17.95'	8.91'	422	
1:00	--	17.93'	8.89'	422	
2:00	--	17.95'	8.91'	422	
3:00	--	17.94'	8.90'	422	
4:00	--	17.13'	8.09'	379	
5:00	--	17.10'	8.06'	379	
6:00	--	17.08'	8.04'	379	
6:21	--	----	--	379	
6:22	--	----	--	434	
7:07	--	18.78'	9.74'	437	
7:16	--	----	--	422	46° F
8:16	--	17.33'	8.29'	422	
8:45	--	----	--	527	
8:52	--	20.95'	11.91'	527	.
9:10	--	20.99'	11.95'	527	
9:14	Pump Cut Off				