

Appendix B

Upper Mississippi Valley Core Descriptions

Core/Profile: 01SH01
 Location: late catastrophic flood paleochannel (CPC)
 Legal description: SW NE NE NW 12 T125N R31W
 County: Sherburne
 Parent material: man-made fill/glaciofluvial/glacial till
 Vegetation: manicured grass
 Slope: 0-2%
 Elevation: 1005 ft (306.3 m)
 Topo. Map: St. Cloud
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-8 (0-.3)	A	very dark brown (10YR 2/2), fine sandy loam; very weak granular; very friable; noneffervescent; clear lower boundary.
8-15 (.3-.5)	CB	brown (10YR 4/3) pebbly, fine sand and very dark brown (10YR 2/2) fine sandy loam; very weak medium, breaking to fine subangular blocky, structure is inherited; friable; noneffervescent; abrupt lower boundary.
15-30 (.5-1.0)	2AB	very dark brown (10YR 2/2) fine sandy loam with few, fine pebbles at base; very weak medium breaking to fine subangular blocky; friable to very friable; noneffervescent; abrupt lower boundary.
30-52 (1.0-1.7)	2CB1	very dark grayish brown (10YR 3/2) fine and medium sandy loam; very weak medium and coarse platy, structure from compaction due to heavy equipment; friable; noneffervescent; abrupt lower boundary.
52-81 (1.7-2.7)	3C2	dark brown (10YR 3/3) and brown (10YR 4/3) very fine gravel with medium to very coarse sand matrix; single grain, stratified, weakly expressed; loose; violently effervescent; very abrupt lower boundary, base of man-made fill.
81->104 (2.7->3.4)	4Ab	very dark brown (10YR 2/2) very fine sandy loam to sandy loam; weak medium angular blocky and subangular blocky; friable to firm; noneffervescent; indeterminate lower boundary.
104-122 (3.4-4.0)		No recovery.
<122-157 (<4.0-5.1)	4C1	very dark grayish brown (10YR 3/2) and dark brown (10YR 3/3) very fine and fine sand with few fine pebbles and coarse and very coarse sand; single grain, stratified, weakly expressed; loose; noneffervescent; abrupt, conformable lower boundary.
157-232 (5.1-7.6)	5C2	coarsely mottled dark yellowish brown (10YR 4/6), dark yellowish brown (10YR 3/6) and yellowish brown (10YR 5/4) very fine sandy loam to silt loam with few fine pebbles (up to 2 cm diameter); stratified, weakly expressed; friable; noneffervescent; indeterminate lower boundary.
>232 (>7.6)	6C3	dark yellowish brown (10YR 3/5) and dark yellowish brown (10YR 3/6) sandy loam and loamy sand diamicton; few, coarse dark yellowish brown (10YR 4/4) mottles in upper half; very weak coarse subangular blocky to massive; friable; noneffervescent; few, fine pores with continuous thin, black (10YR 2/1) organic coats; base of core.

Core/Profile: 01SH02
 Location: floodplain (FFW)
 Legal description: SE NW NE SW 1 T126N R31W
 County: Sherburne
 Parent material: fluvial/possible man-made fill/fluvial
 Vegetation: manicured grass
 Slope: 0-2%
 Elevation: 987.5 ft (300.8 m)
 Topo. Map: St. Cloud
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-0.3)	A	black (10YR 2/1) fine sandy loam; weak granular; friable; noneffervescent; abrupt lower boundary.
10-16 (0.3-0.5)	AB	black (10YR 2/1) fine sandy loam; weak fine subangular blocky; friable; noneffervescent; abrupt lower boundary.
16-26 (0.5-0.9)	BC	very dark brown (10YR 2/2.5) very fine sandy loam; weak medium subangular blocky breaking to moderate coarse platy; friable; noneffervescent; abrupt lower boundary.
26-38 (0.9-1.2)	2Ab	black to very dark brown (10YR 1/2.5) loamy very fine sand; weak fine subangular blocky breaking to single grain; very friable to loose; noneffervescent; clear lower boundary.
38-73 (1.2-2.4)	2Bwb1	dark brown (10YR 3/3) loamy very fine sand down to very fine sand; single grain, with very few, very weak, fine subangular blocky peds; loose; noneffervescent; abrupt lower boundary.
73-79 (2.4-2.6)	2Bwb2	very dark brown (10YR 2/3) very fine sand; few, medium, very dark brown (10YR 2/2) mottles; very weak coarse subangular blocky; friable; noneffervescent; abrupt lower boundary.
79->85 (2.6->2.8)	2C3	grayish brown to brown (10YR 5/2.5) very fine sand; single grain; loose; noneffervescent; indeterminate lower boundary, base of possible man-made fill.
85-122 (2.8-4.0)		No recovery.
<122-151 (4.0-<5.0)	2C4	dark brown to brown (10YR 4/3) and brown (10YR 5/3) very fine sand and dark brown (10YR 3/3), very fine sand with few, fine pebbles; single grain; loose; noneffervescent; very abrupt lower boundary.
151-172 (5.0-5.6)	3C5	fine pebble gravel with dark brown (10YR 3/3) very fine sand matrix; single grain; loose; noneffervescent; very abrupt lower boundary.
172-219 (5.6-7.2)	4	dark brown (10YR 3/3) and very dark brown (10YR 2/3) very fine sand, with few dark yellowish brown (10YR 4/6) medium sand laminae; very friable to single grain; loose; noneffervescent; very abrupt, conformable lower boundary.
219-248 (7.2-8.1)	4C6	dark yellowish brown (10YR 3/4) fine sand; single grain; loose; noneffervescent; very abrupt lower boundary.
248-287 (8.1-9.4)	5C7	yellowish brown (10YR 5/4) medium sand (248-259 cm), dark yellowish brown (10YR4/4) granular, coarse and very coarse sand (259-275 cm) and fine gravel (up to 3 cm diameter) with dark yellowish brown (10YR 4/4) medium and coarse matrix; single grain; loose; noneffervescent; very abrupt lower boundary.
287->325 (9.4->10.7)	5C8	dark brown (10YR 3/3) and dark yellowish brown (10YR 3/4) fine gravel and very fine pebbly medium to very coarse sand; single grain; loose; noneffervescent; base of core.

Core/Profile: 01SH03
 Location: wetland in catastrophic flood paleochannel (CPCMA)
 Legal description: SE SE SE NE 6 T126N R30W
 County: Sherburne
 Parent material: wetland/glaciofluvial
 Vegetation: grass adjacent to sedgy marsh
 Slope: 0-2%
 Elevation: 1012.5 ft (308.6)
 Topo. Map: Cable
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-21 (0-0.7)	AO	black (10YR 2/1) peat with little fine sand; weak fine and very fine subangular blocky to single grain; very friable to loose; noneffervescent; abrupt lower boundary marked by fine sand lamina, several grains thick.
21->33 (0.7->1.1)	O	black (10YR 2/0) peat, fine; very weak medium subangular blocky; friable; noneffervescent; very abrupt lower boundary.
33-115 (1.1-3.8)		No recovery.
<115-157 (<3.8-5.1)	O	black (10YR 2/0) peat, fine, with one bed of dark yellowish brown (10YR 3/8) peat, fibrous and woody (149-154 cm) and one light brownish gray (2.5Y 6/2) fine sand laminae at 139 cm; stratified, weakly to moderately expressed; friable; noneffervescent; very abrupt lower boundary.
157-170 (5.1-5.6)	2Cg1	very dark gray to dark gray (5Y 3.5/1) light very fine and fine sand and very fine and fine sand, with very few fine (less than 1.5 cm) pebbles near top; thickly laminated, moderately expressed; friable; noneffervescent; very abrupt lower boundary.
170->196 (5.6->6.4)	3Cg2	light brownish gray (2.5Y 6/2) pebbly coarse sand; single grain, stratified, weakly expressed; loose; noneffervescent.
196-244 (6.4-8.0)		No recovery.
<244-255 (<8.0-8.4)	3Cg2	light brownish gray (2.5Y 6/2) pebbly coarse sand; single grain, stratified, weakly expressed; loose; noneffervescent; abrupt lower boundary.
255->273 (8.4->9.0)	3Cg3	grayish brown (2.5Y 5/2) and light olive brown (2.5Y 5/3) fine pebble gravel (259-268 cm; 281-296 cm) and pebbly medium and coarse sand; single grain, thinly bedded, moderately expressed; loose; strongly effervescent to violently effervescent; base of core.

Core/Profile: 01SH04
 Location: swale on low terrace (VT2)
 Legal description: SE NE SW NE 8 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 946 ft (288.3 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-22 (0-0.7)	AC1	very dark brown (10YR 2/2) fine sandy loam, with very fine pebble gravel; very weak coarse platy, from being overridden by heavy equipment; friable; noneffervescent; abrupt lower boundary.
22-68 (0.7-2.2)	AC2	black to very dark brown (10YR 1/2.5) silt loam, with moderate fine sand, very few very fine pebble gravel; weak subangular blocky over weak to moderate medium and coarse platy, platyness from being overridden by heavy equipment; friable; noneffervescent; abrupt lower boundary.
68-86 (2.2-2.8)	2BC	dark brown (10YR 3/3) silt loam; very weak subangular blocky over very weak coarse platy; friable; noneffervescent; abrupt lower boundary.
86->101 (2.8->3.3)	2Bw	very dark grayish brown (10YR 3/2) heavy silt loam; weak to moderate medium breaking to fine subangular blocky; friable; noneffervescent; indeterminate lower boundary.
101-122 (3.3-4.0)		No recovery.
<122-170 (<4.0-5.6)	2BC	dark grayish brown to brown (10YR 4/2.5) heavy silt loam and silt loam, with few to common very fine pebbles, one fine sand lamina; many fine dark yellowish brown (10YR 3/6) mottles; very weak subangular blocky over weak medium and coarse platy; friable; noneffervescent; very abrupt lower boundary.
170->210 (5.6->6.9)	3C	yellowish brown (10YR 5/4) and light gray (10YR7/2) fine pebble gravel (up to 3.5 cm diameter), with coarse and very coarse sand matrix; single grain, stratified, moderately expressed; loose; noneffervescent to violently effervescent; base of core.

Core/Profile: 01SH05
 Location: ridge on low terrace (VT2)
 Legal description: NE NE SW NE 8 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 949 ft (289.3 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-18 (0-0.6)	AC	black to very dark brown (10YR 1/2.5) very fine sandy loam; weak medium breaking to fine subangular blocky, disturbed by field road traffic; friable; noneffervescent; abrupt lower boundary.
18-53 (0.6-1.7)	2BC1	very dark grayish brown (10YR 3/2) very fine sandy loam down to silt loam; very weak subangular blocky over weak medium and coarse platy; friable; noneffervescent; gradual lower boundary.
53->90 (1.7->3.0)	2BC2	dark brown (10YR 3/3) very fine sandy loam down to light very fine sand; very weak subangular blocky over very weak platy; friable; noneffervescent; indeterminate lower boundary.
90-122 (3.0-4.0)		No recovery.
<122-157 (<4.0-5.1)	2CB	dark brown (10YR 3/3), dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 4/4) very fine sandy loam, loamy very fine sand and very fine sand; very weak coarse platy, thinly bedded, moderately expressed; friable to very friable; noneffervescent; clear lower boundary.
157-181 (5.1-5.9)	2C1	dark yellowish brown (10YR 3.5/4) very fine sandy loam and loamy very fine sand; many, fine very pale brown (10YR 7/3) mottles; thinly bedded, weakly expressed; friable; violently effervescent; abrupt lower boundary.
181->220 (5.9->7.2)	3C2	pale brown (10YR 6/3) fine pebble gravel, with fine to coarse sand matrix; single grain, stratified, moderately expressed; loose; violently effervescent; base of core.

Core/Profile: 01SH06
 Location: swale on low terrace (VT2)
 Legal description: SE SE NW NE 8 T34N R30W
 County: Sherburne
 Parent material: alluvium
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 946 feet (288.3M)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-26 (0-.9)	Ap	dark brown (10YR3/3) very fine sand; weak, medium, subangular blocky; very friable to weak single grain; noneffervescent; abrupt lower boundary.
26-38 (.9-1.2)	Bw	dark yellowish brown (10YR3/4) fine sand; very weak, coarse, subangular blocky to single grain; noneffervescent; very abrupt lower boundary.
38-52 (1.2-1.7)	C1	dark yellowish brown (10YR3.5/4) very fine sand; massive, single bed; single grain; noneffervescent; abrupt lower boundary; one possible color band internally.
52-81 (1.7-2.7)	C2	dark yellowish brown (10YR4/4) fine sand; massive, single bed; single grain; noneffervescent; abrupt lower boundary.
81-87 (2.7-2.9)	C3	dark yellowish brown (10YR4/4) fine pebbles and medium and coarse granules; massive; single bed; weak single grain; noneffervescent; abrupt lower boundary.
87-141(2.9-4.6)	C4	dark yellowish brown (10YR4/5) fine sand; massive; single grain; noneffervescent; very abrupt lower boundary; one possible color band at base.
141-191(4.6-6.3)	C5	brown to light yellowish brown (10YR-2.5Y5.5/3) fine sand with very few thin beds of pale brown (10YR6/3) medium sand and light olive brown (2.5Y5/4) very fine sand; moderate thin bed; single grain; slightly effervescent; abrupt lower boundary.
191-217 (6.3-7.1)	C6	light olive brown (2.5Y5/3+/-) fine pebbles and coarse sand; moderate, thin bedded; single grain; moderately effervescent to violently effervescent; abrupt lower boundary.
217-227 (7.1-7.4)	C7	fine to medium gravel with coarse sand and granular matrix; moderate, stratified; weak single grain; violently effervescent; base of core.

Core/Profile: 01SH07
 Location: ridge on bar margin on low terrace (VB2)
 Legal description: SE SE NW NE 8 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 950 ft (289.6 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-19 (0-0.6)	AC	very dark brown (10YR 2/2) very fine sandy loam; very weak, fine subangular blocky over weak fine and medium platy, disturbed by field road traffic; friable; noneffervescent; abrupt lower boundary.
19-46 (0.6-1.5)	BC1	dark brown (10YR 3/3) very fine sandy loam; very weak subangular blocky over weak medium and coarse platy; friable; noneffervescent; gradual lower boundary.
46-72 (1.5-2.4)	2BC2	dark yellowish brown (10YR 3/4) silt loam, with much sand, to very fine sandy loam; very weak subangular blocky over very weak coarse platy; friable; noneffervescent; clear lower boundary.
72->92 (2.4->3.0)	2BC3	dark yellowish brown (10YR 4/4) silt loam; many, fine pale brown (10YR 6/3) mottles; very weak subangular blocky over very weak coarse platy; friable; strongly effervescent; indeterminate lower boundary.
92-122 (3.0-4.0)		No recovery.
<122-145 (<4.0-4.8)	3C1	brown to pale brown (10YR 5.5/3) and pale brown (10YR 6/3) fine and medium sand, with one thin bed of loamy fine sand; single grain, stratified, moderately expressed; loose; slightly to strongly effervescent; abrupt, conformable lower boundary.
145-182 (4.8-6.0)	3C2	pale to very pale brown (10YR 6.5/3) medium and coarse sand and fine pebble gravel, with coarse and very coarse sand matrix; single grain, stratified, moderately expressed; loose; violently effervescent; abrupt, conformable lower boundary.
182->206 (6.0->3.5)	4C3	very dark brown (10YR 2/3) fine pebble gravel, with coarse and very coarse sand matrix; single grain, stratified, moderately expressed; continuous, nearly black oxide coats on pebbles and sand; loose; strong oxide staining; violently effervescent.

Core/Profile: 01SH08
 Location: swale on low terrace (VT2)
 Legal description: SW NW NE NE 8 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 946 ft (288.3 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-18 (0-0.6)	Ap	black to very dark brown (10YR 1/2.5) very fine sandy loam, with very few fine pebbles; weak medium breaking to fine subangular blocky; friable; noneffervescent; clear lower boundary.
18-37 (0.6-1.2)	2A	black to very dark brown (10YR 1/2.5) silt loam, with much very fine sand and very few fine pebbles; weak medium breaking to fine subangular blocky; friable; noneffervescent; clear lower boundary.
37-53 (1.2-1.7)	2AC	_black to very dark brown (10YR 1/2.5) silt loam, with much very fine sand; weak, medium subangular blocky over weak medium and coarse platy; friable; noneffervescent; abrupt lower boundary.
53-77 (1.7-2.5)	2BC1	very dark grayish brown (10YR 3/2) silt loam, with much fine sand down to very fine sandy loam; very weak subangular blocky over weak coarse platy; friable; noneffervescent; gradual lower boundary.
77->103 (2.5->3.4)	3BC2	dark yellowish brown (10YR 3/4) loamy very fine to fine sand; very weak coarse subangular blocky; very friable; noneffervescent; indeterminate lower boundary.
103-122 (3.4-4.0)		No recovery.
<122-154 (<4.0-5.1)	3C1	(10YR 3/3.5) very fine sand with little silt, with few fine pebbles at and above contact; single grain, stratified, very weakly expressed; loose; noneffervescent; abrupt lower boundary.
154->201 (5.1->6.6)	4C2	dark yellowish brown (10YR 3/4) and very pale brown (10YR 7/3) fine pebble gravel, with coarse and very coarse sand matrix; single grain, stratified, weakly expressed; loose; violently effervescent; base of core.

Core/Profile: 01SH09
 Location: ridge on low terrace (VT2)
 Legal description: NW NW NE NE 8 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: plowed field
 Slope: 0-2%
 Elevation: 949 ft (289.3 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-20 (0-0.7)	A1	black to very dark brown (10YR 1/2.5) silt loam; granular to moderate fine platy, disturbed by field road; friable; noneffervescent; abrupt lower boundary.
20-46 (0.7-1.5)	A2	black (10YR 2/1) silt loam; weak fine subangular blocky over very weak fine and medium platy, disturbed by field road; friable; noneffervescent; gradual lower boundary.
46-70 (1.5-2.3)	BC1	very dark grayish brown (10YR 3/2) silt loam to very fine sandy loam; very weak subangular blocky over weak medium and coarse platy; friable; noneffervescent; gradual lower boundary.
70-104 (2.3-3.4)	2BC2	dark brown (10YR 3/3) to dark yellowish brown (10YR 3/4) very fine sandy loam; weak coarse subangular blocky over very weak coarse platy, with few laminae; friable; noneffervescent; indeterminate lower boundary.
104-122 (3.4-4.0)		No recovery.
122-157 (4.0-5.1)	3BC3	dark brown to brown (10YR 4/3) down to dark grayish brown to brown (10YR 4/2.5) silt loam; very weak coarse subangular blocky over weak medium to coarse platy; friable; noneffervescent; abrupt lower boundary.
157->210 (5.1->6.9)	4C	very pale brown (10YR7/3) and pale yellow to very pale brown (2.5Y-10YR7/3) fine sand (257-267 cm; 293-301 cm) and fine gravel (up to 3 cm diameter), with coarse and very coarse sand matrix (267-293 cm); single grain, thinly bedded, moderately expressed; loose; violently effervescent; base of core.

Core/Profile: 01SH10
 Location: low terrace (VT1)
 Legal description: NE SW NE SW 23 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: grass
 Slope: 0-2%
 Elevation: 951 ft (289.9 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-16 (0-0.5)	A	very dark brown (10YR 2/2) silt loam, with much fine sand; very weak fine subangular blocky and granular; friable; noneffervescent; very abrupt lower boundary.
16-56 (0.5-1.8)	2CB	dark brown (10YR 3/3), dark yellowish brown (10YR 3/4), and dark yellowish brown (10YR 4/4) pebbly loamy fine and medium sand and pebbly fine and medium sand; very weak subangular blocky, thinly bedded, moderately expressed; friable; noneffervescent; abrupt lower boundary.
56-65 (1.8-2.1)	2C1	dark yellowish brown (10YR 4/5) fine pebble gravel with fine sand matrix; single grain, single bed; loose; noneffervescent; very abrupt lower boundary.
65-78 (2.1-2.6)	3C2	very dark brown (10YR 2/2) and dark yellowish brown (10YR 4/4) very fine and fine sand, with few very fine sand laminae; single grain, thinly bedded to thinly laminated, moderately expressed; friable; moderately effervescent; very abrupt lower boundary.
78->91 (2.6-3.0)	4C3	olive brown to dark yellowish brown (2.5Y-10YR 4/5) fine pebble gravel, with fine sand matrix; single grain, single bed; loose; moderately effervescent; indeterminate lower boundary.
91-122 (3.0-4.0)		No recovery.
<122-134 (4.0-4.4)	5C4	dark brown (10YR 3/3) pebbly loamy fine sand; single grain, single bed?; loose; moderately to violently effervescent; very abrupt lower boundary.
134-183 (4.4-6.0)	5C5	dark grayish brown (2.5Y 4/2) very fine and fine sand, with few fine pebbles, and very dark grayish brown (2.5Y 3/2) silt loam; single grain, thinly bedded to thinly laminated, moderately expressed; loose; moderately effervescent; abrupt lower boundary.
183->224 (6.0-7.3)	6Cg1	very dark gray (5Y 3/1) fine sandy loam, with few fine pebbles, and silt loam, and one thin bed of light olive brown (2.5Y 5/4) pebbly fine and medium sand; thinly bedded, moderately expressed; friable; violently effervescent; indeterminate lower boundary.
224-244 (7.3-8.0)		No recovery.
<244-305 (8.0-10.0)	7Cg2	very dark gray (5Y 3/1) sandy loam diamicton, with common dark grayish brown (2.5Y 4/2) medium and coarse sand laminae; thinly bedded to thinly laminated, moderately expressed; friable to firm; strongly effervescent; very abrupt lower boundary.
305-323 (10.0-10.6)	8C	olive brown (2.5Y 4/3) fine pebble gravel, with medium and coarse sand matrix; single grain; loose; violently effervescent; base of core.

Core/Profile: 01SH11
 Location: low natural levee on low terrace (VT1)
 Legal description: SW SW NE SW 23 T34N R30W
 County: Sherburne
 Parent material: fluvial
 Vegetation: grass
 Slope: 0-2%
 Elevation: 948 ft (288.9 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-7 (0-0.2)	A	very dark grayish brown to dark brown (10YR 3/2.5) silt loam, with common fine sand; weakly granular; friable; noneffervescent; clear lower boundary.
7-21 (0.2-0.7)	Bw1	dark brown (10YR 3/2) silt loam, with common fine sand; weak medium breaking to fine subangular blocky; friable; noneffervescent; clear lower boundary.
21-30 (0.7-1.0)	Bw2	dark yellowish brown (10YR 3/4) fine sandy loam, with silt; very weak coarse platy; friable; noneffervescent; abrupt lower boundary.
30-45 (1.0-1.5)	2C1	brown (10YR 5/3) fine sand; single grain, single bed; loose; noneffervescent; clear lower boundary.
45-49 (1.5-1.6)	3Ck	dark yellowish brown (10YR 3.5/4) very fine sandy loam; single bed, very weak subangular blocky; friable; violently effervescent, with common, soft masses; very abrupt lower boundary.
49-60 (1.6-2.0)	2C1'	brown (10YR 5/3) to light olive brown (2.5Y 5/3) very fine sand; single grain, single bed, possibly cross-laminated; loose; noneffervescent; abrupt lower boundary.
60-65 (2.0-2.1)	3Ck'	dark brown (10YR 3.5/3) heavy very fine sandy loam, with few fine pebbles at contact; single bed, very weak subangular blocky; friable; violently effervescent, with common, fine soft masses; very abrupt lower boundary.
65->87 (2.1->2.9)	2C1"	brown to pale brown (10YR 5.5/3) fine sand; single grain, single bed, stratified; loose; very weakly effervescent.
87-122 (2.9-4.0)		No recovery.
<122-135 (<4.0-4.4)	2C1"	brown to pale brown (10YR 5.5/3) fine sand; single grain, single bed, stratified; loose; very weakly effervescent; abrupt lower boundary.
135-187 (4.4-6.1)	4C2	dark grayish brown to light olive brown (10YR-2.5Y 4.5/2.5) and dark yellowish brown (10YR 4/4) very fine and fine medium sand, two beds with many natal bivalve shells (152-161 cm, 185-186 cm); few medium and coarse dark yellowish brown (10YR 3/6) mottles; single grain, thinly bedded to laminated, moderately expressed; loose; moderately to strongly effervescent, variable; very abrupt lower boundary.
187->206 (6.1->6.8)	5C3	brown (10YR 5/3) pebbly coarse and very coarse sand, with few fine gravel strata (188-190 cm, 198-200 cm, 204-200 cm); single grain, stratified, moderately expressed; loose; moderately effervescent; indeterminate lower boundary.
206-244 (6.8-8.0)		No recovery.
<244-274 (<8.0-9.0)	6C4	(10YR-2.5Y 4.5/3) fine and medium sand; single grain; loose; strongly effervescent; abrupt lower boundary.
274->360 (9.0->11.8)	7C5	brown to grayish brown (10YR-2.5Y 4.5/3) gravely medium and coarse sand, with few fine and medium sand strata; few zones of very coarse horizontal dark yellowish brown (10YR 3/8) and dark yellowish brown (10YR 4/8) mottles; single grain, thinly bedded, moderately expressed; loose; strongly effervescent.
360-366 (11.8-12.0)		No recovery; base of core.

Core/Profile: 01SH12
 Location: swale on low floodplain (FFW)
 Legal description: SW SE NW NE 4 T33N R29W
 County: Sherburne
 Parent material: alluvium
 Vegetation: parkland
 Slope: 0-2%
 Elevation: 932 ft (284.1 m)
 Topo. Map: Clear Lake
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-25 (0-0.8)	Bw1	black to very dark brown (10YR 1/2.5) silt loam; weak medium breaking to fine subangular blocky; friable; noneffervescent; clear lower boundary.
25-54 (0.8-1.8)	Bw2	very dark brown (10YR 2/2) down to very dark grayish brown (10YR 3/2) to very dark grayish brown (2.5Y 3/2) silt loam, some very fine sandy loam; weak medium and fine platy; friable; noneffervescent; clear lower boundary.
54-80 (1.8-2.6)	Cg	very dark gray (2.5Y 3/1) silty clay loam and silt loam, with brown (10Y 5/3) fine sand laminae; very weak subangular blocky over thinly bedded to thickly laminated; friable; noneffervescent; abrupt, conformable lower boundary.
80->98 (2.6->3.2)	2C1	dark yellowish brown (10YR 3/8) and dark yellowish brown (10YR 4/8) medium and coarse sand ; single grain, stratified, moderately expressed; loose; noneffervescent.
98-122 (3.2-4.0)		No recovery.
<122-140 (<4.0-4.6)	2C1	dark yellowish brown (10YR 3/8) and dark yellowish brown (10YR 4/8) medium and coarse sand ; single grain, stratified, moderately expressed; loose; noneffervescent; abrupt lower boundary.
140-177 (4.6-5.8)	2C2	olive brown to light olive brown (2.5Y 4.5/3) medium sand; single grain, stratified, weakly expressed; loose; very weakly effervescent; abrupt, conformable lower boundary.
177->194 (5.8->6.4)	3C3	dark grayish brown to grayish brown (2.5Y 4.5/2) fine pebbly very coarse sand; single grain; loose; weakly effervescent; indeterminate boundary.
194-244 (6.4-8.0)		No recovery.
<244-301 (<8.0-9.9)	4C4	dark brown (7.5YR 3/2) very fine and fine sand , with few, fine pebbles in lower 10 cm (up to 3 cm diameter); massive, single grain; loose; strongly effervescent; very abrupt lower boundary.
301-316 (9.9-10.4)	5C5	dark grayish brown to grayish brown (2.5Y 4.5/2) fine pebble and very fine pebble gravel, with very coarse sand matrix; single grain, single bed; loose; violently effervescent; abrupt, conformable lower boundary.
316-388 (10.4-12.7)	6C6	olive brown to light olive brown (2.5Y 4.5/3) and light yellowish brown (2.5Y 6/3) medium sand , with few fine pebbles; few very coarse dark yellowish brown (10YR 3/6) mottles; single grain, stratified, very weakly expressed; loose; violently effervescent; abrupt, conformable lower boundary.
388-396 (12.7-13.0)	5C5'	Same as 5C5 above (301-316 cm).
396-488 (13.0-16.0)	4C4'	dark brown (7.5YR 3/2) fine sand; massive, single grain, o stratified, very weakly expressed; loose; strongly effervescent.
488-549 (16.0-18.0)		not cored.
549->610 (18.0->20.0)	4C4'	dark brown (7.5YR 3/2) fine sand; massive, single grain, stratified, very weakly expressed, single grain; loose; strongly effervescent; base of core.

Core/Profile: 01SH13
 Location: swale on low terrace (VT1)
 Legal description: SE SW NW NE 4 T33N R29W
 County: Sherburne
 Parent material: alluvium
 Vegetation: grassy parkland
 Slope: 0-2%
 Elevation: 935 ft (285.1 m)
 Topo. Map: Clear Lake
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-0.3)	A	black (10YR 2/1) silt loam; weak granular; friable; noneffervescent; clear lower boundary.
10-29 (0.3-1.0)	AB	black (10YR 2/1) silt loam; weak medium breaking to fine subangular blocky; friable; noneffervescent; gradual lower boundary.
29-44 (1.0-1.4)	BC	very dark brown (10YR 2/2) down to very dark grayish brown (10YR 3/2) silt loam; very weak coarse subangular blocky over very weak coarse platy; friable; noneffervescent; abrupt, conformable lower boundary.
44-59 (1.4-1.9)	2C1	dark brown (10YR 3.5/3) fine sand, with little silt; single grain, thinly bedded, weakly expressed; loose; noneffervescent; abrupt, conformable lower boundary..
59->85 (1.9->2.8)	2C2	light brownish gray to light yellowish brown (10YR-2.5Y 6/2.5) fine sand; one horizontal strong brown (7.5YR 4/6) mottle near top; single grain, massive; loose; noneffervescent; indeterminate lower boundary.
85-122 (2.8-4.0)		No recovery.
<122-142 (<4.0-4.7)	2C3	dark brown to brown (10YR 4/3) fine sand; single grain, thinly bedded, very weakly expressed; loose; noneffervescent; very abrupt, unconformable lower boundary.
142-179 (4.7-5.9)	2C4	light olive brown (2.5Y 5/3) medium sand ; single grain, stratified or laminated, moderately expressed; loose; abrupt, conformable lower boundary.
179-206 (5.9-6.8)	2C5	light olive brown (2.5Y 5/3) coarse and very coarse sand, one loamy sand laminae (187-188 cm); single grain, stratified, weakly expressed; loose; indeterminate boundary.
206-244 (6.8-8.0)		No recovery.
244-276 (8.0-9.1)	2C6	dark brown to olive brown (10YR-2.5Y 4/3.5) fine down to medium sand; single grain, massive, upward fining; loose; clear lower boundary.
276-293 (9.1-9.6)	2C7	dark brown to olive brown (10YR-2.5Y 4/3.5) coarse and very coarse sand; single grain, massive, upward fining; loose; abrupt, conformable lower boundary.
293-306 (9.6-10.0)	3C8	very dark grayish brown (2.5Y 3/2) fine pebble gravel, with very coarse sand and very fine pebble matrix; single grain, single bed; loose; strongly effervescent; very abrupt lower boundary.
306->356 (10.0->11.7)	4C9	dark brown (7.5YR 3/2) very fine and fine sand, with few silt loam laminae; single grain, thinly laminated to thinly bedded, weakly expressed; loose; strongly effervescent.

Core/Profile: 01SH14
 Location: swale on low terrace (VT1)
 Legal description: SW SW NW NE 4 T33N R29W
 County: Sherburne
 Parent material: alluvium
 Vegetation: parkland
 Slope: 0-2%
 Elevation: 935 ft (285.1 m)
 Topo. Map: Clear Lake
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-15 (0-0.5)	CA	very dark brown to very dark grayish brown (10YR 2.5/2) fine sandy loam; granular down to weak, medium platy, slightly disturbed; friable; noneffervescent; abrupt lower boundary.
15-23 (0.5-0.8)	2A	black (10YR 2/1) silt loam; weak fine subangular blocky; friable; noneffervescent; clear lower boundary.
23-36 (0.8-1.2)	2AB	very dark brown (10YR 2/2) silt loam; weak medium subangular blocky; friable; noneffervescent; clear lower boundary.
36-54 (1.2-1.8)	2Bw	very dark grayish brown (10YR 3/2) heavy silt loam; many fine, faint, dark gray (10YR 4/1) mottles; weak medium subangular blocky over very weak coarse platy; friable to firm; noneffervescent; abrupt lower boundary.
54->93 (1.8->3.1)	3C1	brown to pale brown (10YR 5.5/3) fine sand; single grain; loose; noneffervescent.
93-122 (3.1-4.0)		No recovery.
<122-140 (<4.0-4.6)	3C1	brown to pale brown (10YR 5.5/3) fine sand; single grain; loose; noneffervescent; abrupt lower boundary.
140-199 (4.6-6.5)	3C2	brown to light olive brown (10YR-2.5Y 4.5/3) medium sand, with some coarse sand, with few fine pebbles on and above basal contact; few coarse horizontal dark yellowish brown (10YR 3/6) and dark yellowish brown (10YR 3/8) mottles in lower 15 cm; single grain, stratified, very weakly expressed; loose; noneffervescent to weakly effervescent; very abrupt, unconformable lower boundary.
199-271 (6.5-8.9)	4C3	brown (7.5YR 4/2) silt, with few very fine sand laminae; laminated, very weakly expressed; friable; slightly to strongly effervescent; abrupt, conformable lower boundary.
271->305 (8.9->10.0)	4C4	brown (7.5YR 4/2) very fine sand, with few silt loam and silty clay loam laminae; laminated to thinly bedded; friable to loose; strongly effervescent; base of core.

Core/Profile: 01SH15

Location: wetland in exposed lake bed in ice block depression on low catastrophic flood surface (LLBMA)

Legal description: SW SW SE NW 33 T34N R29W

County: Sherburne

Parent material: wetland/lacustrine

Vegetation: sedges

Slope: 0-2%

Elevation: 939 ft (286.2 m)

Topo. Map: Clear Lake

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-14 (0-0.5)	AO	black (10YR 2/1) peat; weak fine subangular blocky; friable; noneffervescent; many very fine and fine roots; clear lower boundary.
14-30 (0.5-1.0)	O	black (10YR 2/1) peat; weak medium breaking to fine subangular blocky; friable; noneffervescent; many very fine and fine roots, far fewer than 0-14 cm above; clear lower boundary.
30-39 (1.0-1.3)	O/2C	black (10YR 2/1) peat and grayish brown (2.5Y 5/2) medium and fine sand; thinly bedded to medium laminated, strongly expressed; friable over loose; noneffervescent; very abrupt, unconformable lower boundary.
39-59 (1.3-1.9)	O/2Cg	very dark brown (10YR 2/2) peaty sandy loam with medium sand laminae; thinly bedded to thickly laminated, weakly expressed; friable; noneffervescent; few fine pores with continuous thin strong brown (7.5YR 3/6) oxide coats, some truncated; abrupt, conformable lower boundary.
59-70 (1.9-2.3)	O	very dark grayish brown (2.5Y-10YR 3/2) marly peat, with some medium and fine sand; thin to medium laminated, weakly expressed; friable; violently effervescent; few fine pores with continuous thin strong brown (7.5YR 3/6) oxide coats, some truncated; abrupt, conformable lower boundary.
70->81 (2.3->2.7)	3Cg	light brownish gray (2.5Y 6/2) and dark grayish brown (2.5Y 4/2) silty marl; thinly laminated, moderately expressed; friable; violently effervescent; indeterminate lower boundary.
81-122 (2.7-4.0)		No recovery.
<122-129 (<4.0-4.2)	4OCb1	black (10YR 2/1) silty peat; very weak subangular blocky; friable; weakly effervescent; very abrupt lower boundary.
129-133 (4.2-4.4)	4OCb2	very dark grayish brown (2.5Y-10YR 3/2) marly peat, with some medium and fine sand; thin to medium laminated, weakly expressed; friable; violently effervescent; few fine pores; very abrupt, conformable lower boundary.
133-163 (4.4-5.3)	5Cg1	light brownish gray (2.5Y 6/2) and grayish brown (2.5Y 5/2) silty marl; thinly to thickly laminated, weakly to moderately expressed; friable; violently effervescent; one krotovina filled with very dark brown (10YR2/2) sandy loam; abrupt, conformable lower boundary;.
163-199 (5.3-6.5)	5Cg2	very dark grayish brown (2.5Y 3/2), dark grayish brown (2.5Y 4/2), and black (2.5Y 2/2) highly organic marly silt loam; thinly bedded to thinly laminated, moderately expressed; friable; violently effervescent; common fine pores and roots surrounded by mottles; some laminae with uncarbonized macrobotanical remains and charcoal; abrupt, conformable lower boundary.
199-245 (6.5-8.0)	5Cg3	very dark gray (5Y 3/1) and dark olive gray (5Y 3/2) highly organic marly silt loam; thinly bedded to thickly laminated, weakly expressed; friable to soft; violently effervescent; abrupt lower boundary.
245-258 (8.0-8.5)	6C	light olive brown (2.5Y 5/4) very fine pebbly medium and coarse sand; single grain, massive bed; loose; violently effervescent; clear lower boundary.
258-270 (8.5-8.9)	6Cg1	very dark gray (5Y 3/1) very fine pebbly medium and coarse sand; single grain, stratified, weakly expressed; loose; violently effervescent; clear lower boundary.
270-298 (8.9-9.8)	7Cg2	dark greenish gray to dark gray (5GY-5Y 4/1) marl; thinly laminated, weakly expressed; friable; violently effervescent; abrupt, conformable lower boundary.

01SH15 (continued)

298-318 (9.8-10.4)	7Cg3/8COb1	very dark grayish brown (2.5Y-10YR 3/2) and very dark to dark grayish brown (2.5Y-10YR 3.5/2) marl, with thick laminae of very dark grayish brown (2.5Y 3/2) peaty marl; thinly to thickly laminated, moderately to weakly expressed; friable; violently effervescent; abrupt, conformable lower boundary.
318-355 (10.4-11.6)	7Cg4/8COb2	grayish brown (2.5Y 5/2) and grayish brown to light grayish brown (2.5Y 5.5/2) marl, with very dark grayish brown (2.5Y 3/2) peaty marl laminae; thinly to thickly laminated, moderately to weakly expressed; friable; violently effervescent; abrupt, conformable lower boundary.
355->3.66 (11.6->12.0)	8C/ 9Ob	light brownish gray (2.5Y 6/2) very fine pebbly fine sand and black (10YR 2/1) light sandy peat; thinly to medium laminated, some disrupted; friable; very weakly to moderately effervescent; abrupt, conformable lower boundary.

Core/Profile: 01SH16

Location: wetland in exposed lake bed in ice block depression on low catastrophic flood surface (LLBMA)

Legal description: NE NE NW SW 33 T34N R29W

County: Sherburne

Parent material: wetland/lacustrine/lacustrine ice-contact

Vegetation: sedges

Slope: 0-2%

Elevation: 939 ft (286.2 m)

Topo. Map: Clear Lake

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-15 (0-0.5)	O	black (10YR 2/1) peat; weak fine subangular blocky; friable; noneffervescent; many very fine and fine roots in upper third; abrupt, conformable lower boundary.
15->58 (0.5->1.9)	O/2C	black (10YR 2/1) peat and grayish brown (10YR 5/2) fine and medium sand; thinly laminated to thinly bedded, strongly expressed; friable to loose; few fine roots; noneffervescent; indeterminate boundary.
58-122 (1.9-4.0)		No recovery.
<122-137 (<4.0-4.5)	Ob1	black (10YR 2/1) peat; stratified, weakly expressed; friable; noneffervescent; very abrupt lower boundary.
137-166 (4.5-5.4)	2Cg1/Ob2	very dark grayish brown (2.5Y 3/2) and very dark to dark grayish brown (2.5Y 3.5/2) medium and coarse sand, with some very fine pebble gravel strata, and black (10YR 2/1) peat; thinly laminated to thinly bedded, strongly expressed; friable to loose; noneffervescent; very abrupt lower boundary.
166->202 (5.4->6.6)	Ob3/2Cg2	black (10YR 2/1) and very dark brown (10YR 2/2) peaty sandy loam down to very dark grayish brown (2.5Y 3/2) and dark grayish brown (2.5Y 4/2) marly peat and very dark grayish brown (2.5Y 3/2) marly peaty sandy loam, with very few fine and medium sand laminae; thinly laminated to thinly bedded, strongly expressed; friable to very friable; strongly effervescent down to violently effervescent; indeterminate lower boundary.
202-244 (6.6-8.0)		No recovery.
<244-266 (<8.0-8.7)	Ob4	black (10YR 2/1) peat; massive, very fine; friable; noneffervescent; clear lower boundary.
266-291 (8.7-9.5)	2Cg1'/Ob2'	very dark grayish brown (2.5Y-10YR 3/2) fine, medium and coarse sand, with very fine pebble gravel in zones, and black (10YR 2/1) peat; thinly laminated to thinly bedded, strongly expressed; friable to loose; noneffervescent; very abrupt, conformable lower boundary.
291-366 (9.5-12.0)	Ob5/2Cg2	very dark brown (10YR 2/2) and black (2.5Y 2/2) peat and marly peat and silty marl, with few strata of grayish brown (2.5Y 5/2) fine sand and light medium and fine sand; thinly laminated, moderately to strongly expressed; friable; very few shell fragments in upper 30 cm; violently effervescent; base of core.
366-390 (12.0-12.8)	2Cg3/Ob6	light brownish gray (2.5Y 6/2) very fine pebbly fine sand and black (10YR 2/1) light sandy peat; thinly to medium laminated, some disrupted; friable; very weakly to moderately effervescent; abrupt, conformable lower boundary.
390-491 (12.8-16.1)	2Cg4/COB	dark grayish brown (2.5Y 4/2) and light brownish gray (2.5Y 6/2) fine and very fine sand and very dark grayish brown (2.5Y 3/2), dark grayish brown (2.5Y 4/2), grayish brown (2.5Y 5/2) peaty marl; laminated, weakly expressed and thinly bedded, moderately expressed; friable; violently effervescent; abrupt lower boundary.
491->508 (16.1->16.7)	2Cg5	very dark gray to very dark grayish brown (5Y-2.5Y 3/1.5) fine sand and light fine sand; laminated, moderately expressed; loose; violently effervescent; indeterminate lower boundary.
508-549 (16.7-18.0)		No recovery.

01SH16 (continued)

<549-565 (<18.0-18.5)	3OCb	very dark grayish brown (2.5Y 3/2) and very dark to dark grayish brown (2.5Y 3.5/2) marly peat with peaty fine sandy loam laminae, with one peat laminae; thinly laminated to thinly bedded, moderately expressed; friable; violently effervescent; abrupt, conformable lower boundary.
565-572 (18.5-18.8)	4Cg1	very dark gray to dark greenish gray (5Y-5GY 3.5/1) fine sand and light fine sand; single grain, thinly laminated, moderately expressed; loose; violently effervescent; very abrupt lower boundary.
572->576 (18.8->18.9)	5Cg2	very dark greenish gray (5GY 3/1) marly organic silt; thinly bedded; friable; violently effervescent; indeterminate lower boundary.
576-610 (18.9-20.0)		No recovery.
610-671 (20.0-22.0)		Not cored.
<671-674 (<22.0-22.1)	6OCb	very dark gray (10YR 3/1) marly peat; thickly laminated, weakly expressed; friable; violently effervescent; very abrupt lower boundary.
674->712 (22.1->23.4)	7Cg1	dark greenish gray (5GY 4/1), dark gray (5Y 4/1), and very dark gray to dark gray (5Y 3.5/1) very fine and fine and medium sand, with few light very fine sand laminae; single grain, thickly laminated to thinly bedded, moderately expressed; loose; violently effervescent; abundant uncarbonized macrobotanical remains in several laminae; indeterminate lower boundary.
712-732 (23.4-24.0)		No recovery.
732-793 (24.0-26.0)		Not cored.
<793-818 (<26.0-26.8)	7Cg2	dark gray to olive gray (5Y 4.5/1.5) fine sand, somewhat poorly sorted, with common thin beds of very fine pebbly coarse sand and very fine pebble gravel; one laminae above basal gravel with macro botanical remains; abrupt lower boundary.
818->823 (26.8->27.0)	8Cg3	very dark grayish brown (2.5Y 3/2) and dark olive gray (5Y 3/2) organic very fine sandy loam, with peaty laminae; laminated, weakly expressed; very friable; violently effervescent; indeterminate lower boundary.
823-854 (27.0-28.0)		No recovery.
<854-915 (<28.0-30.0)		Not cored.
915->930 (30.0->31.0)	9Cg4	gray (2.5Y 5/1) medium sand, moderately sorted, down to fine pebble gravely coarse sand; single grain; loose; violently effervescent; base of core.

Core/Profile: 01SH17

Location: wetland in exposed lake bed in ice block depression on low catastrophic flood surface (LLBMA)

Legal description: SW SW SE NW 33 T34N R29W

County: Sherburne

Parent material: wetland/lacustrine/glaciofluvial

Vegetation: sedges

Slope: 0-2%

Elevation: 940 ft (286.5 m)

Topo. Map: Clear Lake

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-8 (0-0.3)	AO	black (10YR 2/0) silty peat; weak fine subangular blocky; friable; noneffervescent; many fine roots; clear lower boundary.
8-41 (0.3-1.3)	O	black (10YR 2/0) fine peat, with much fine sand; weak fine subangular blocky over stratified, very weakly expressed; friable; noneffervescent; abrupt, conformable lower boundary.
41-62 (1.3-2.0)	2Cg1/Ob	grayish brown (2.5Y 5/2) medium sand, with some coarse sand, with few laminae of black (10YR 2/0) peat (58-60 cm, 59-50 cm, 44-45 cm); single grain, stratified, moderately expressed; loose; noneffervescent; abrupt, conformable lower boundary.
62->100 (2.0->3.3)	2Cg2	grayish brown (2.5Y 5/2) fine and medium sand, moderately well sorted; single grain, stratified, very weakly expressed; loose; violently effervescent.
100-122 (3.3-4.0)		No recovery.
<122-178 (<4.0-5.8)	2Cg2	grayish brown (2.5Y 5/2) fine and medium sand, moderately well sorted; single grain, stratified, very weakly expressed; loose; violently effervescent; clear lower boundary.
178->224 (5.8->7.3)	2Cg3	very dark gray to dark gray (5Y 3.5/1) fine sand; single grain; loose; violently effervescent.
224-244 (7.3-8.0)		No recovery.
<244-278 (<8.0-9.1)	2Cg3	very dark gray to dark gray (5Y 3.5/1) fine sand ; single grain; loose; violently effervescent; abrupt lower boundary.
278->317 (9.1->10.4)	2Cg4	very dark gray to dark gray (5Y 3.5/1) medium sand , with one very coarse sand lamina; single grain; loose; violently effervescent.
317-366 (10.4-12.0)		No recovery; base of core

Core/Profile: 01SH18
 Location: wetland in swale on low terrace (VT2)
 Legal description: NW NE NE NE 8 T24N R30W
 County: Sherburne
 Parent material: wetland/fluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 955 ft (291.1 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-0.3)	AO	black (10YR 2/1) silty peat, with little sand; very fine granular; friable to fibrous; noneffervescent; many very fine roots; abrupt boundary.
10-73 (0.3-2.4)	O	black (10YR 2/1) peat, with little sand; weak medium subangular blocky; friable; noneffervescent; abrupt boundary.
73-105 (2.4-3.4)	OC	black (10YR 2/1) peaty silt loam; very weak, coarse platy; friable; noneffervescent; abrupt boundary.
105-120 (3.4-3.9)	2Cg1	very dark gray (2.5Y 3/1) organic silt loam; very weak, coarse platy; friable; noneffervescent; common fine pieces uncarbonized organic matter; abrupt, conformable lower boundary.
120->128 (3.9->4.2)	3Cg2	dark gray (2.5Y 4/1) medium sand, with few pebbles; single grain; loose; weakly effervescent; few fine pieces uncarbonized organic matter; base of probe.

Core/Profile: 01BE01

Location: wetland in catastrophic flood paleochannel (CPCMA)

Legal description: SE SE SW NE 31 T126N R30W

County: Benton

Parent material: wetland/man-made fill/wetland/glaciofluvial

Vegetation: grass adjacent to sedgy marsh

Slope: 0-2%

Elevation: 1020 ft (310.9 m)

Topo. Map: Cable

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-11 (0-0.4)	O	black (10YR 2/1) peat; very weak subangular blocky to granular; very friable; noneffervescent; abrupt lower boundary.
11-26 (0.4-0.9)	2CB	dark gray (2.5Y-10YR 4/1) and olive brown to light olive brown (2.5Y 4.5/3) fine sand; very weak medium subangular blocky to single grain; very friable to loose; noneffervescent; man-made till; abrupt lower boundary.
26-49 (0.9-1.6)	3Ab	black (10YR 2/0) organic silty clay loam down to fine sandy loam; very weak medium subangular blocky; friable; noneffervescent; one fine charcoal fragment; abrupt lower boundary.
49->77 (1.6->2.5)	4Cg	gray (5Y 5/1) medium and coarse sand; single grain; loose; noneffervescent; base of core.
77-122 (2.5-4.0)		No recovery.

Core/Profile: 01BE02

Location: wetland in catastrophic flood paleochannel (CPCMA)

Legal description: SW SE SW NE 31 T126N R30W

County: Benton

Parent material: wetland/glaciofluvial

Vegetation: grass adjacent to sedgy marsh

Slope: 0-2%

Elevation: 1022.5 ft (311.7 m)

Topo. Map: Cable

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-24 (0-0.8)	O1	black (10YR 2/0) peat, fine; weak fine subangular blocky; friable; noneffervescent; abrupt to clear lower boundary.
24->63 (0.8->2.1)	O2	black (10YR 2/1) peat, fine; very weak medium subangular blocky to massive to stratified, very weakly expressed; friable; noneffervescent.
63-122 (2.1-4.0)		No recovery.
<122-147 (<4.0-4.8)	O2	black (10YR 2/1) peat, fine; very weak medium subangular blocky to massive to stratified, very weakly expressed; friable; noneffervescent; very abrupt lower boundary
147-163 (4.8-5.3)	2Cg1	very dark gray (5Y 3/1) medium and coarse sand, moderately sorted; single grain, stratified, very weakly expressed; loose; noneffervescent; clear lower boundary.
163-173 (5.3-5.7)	2Cg2	very dark gray to dark gray (5Y 3.5/1) pebbly coarse and very coarse sand; single grain, stratified, very weakly expressed; loose; noneffervescent; abrupt, conformable lower boundary.
173->178 (5.7->5.8)	2Cg3	dark gray (5Y 4/1) pebbly (up to 2.5 cm) coarse and very coarse sand; single grain, stratified, very weakly expressed; loose; violently effervescent; base of core.

Core/Profile: 01ST01

Location: exposed lake bed in ice block depression in catastrophic flood paleochannel (LLB)

Legal description: SE NE SW NW 13 T123N R28W

County: Stearns

Parent material: wetland and lacustrine/lacustrine ice-contact

Vegetation: grass and wetland grasses

Slope: 0-2%

Elevation: 977.5 ft (298 m)

Topo. Map: St. Augusta

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-13 (0-0.4)	AO1	black (10YR 2/1) silty peat; weak fine subangular blocky; friable; very weakly effervescent; clear lower boundary.
13-22 (0.4-0.7)	AO2	black (10YR 2/1) silty peat; weak medium breaking to fine angular blocky; friable; moderately effervescent; few snail shells, fragmented and whole; clear lower boundary.
22-33 (0.7-1.1)	OC	black (10YR 2/1) silty clay loam peat; weak medium platy; friable; weakly effervescent; clear to abrupt lower boundary.
33-40 (1.1-1.3)	CO	very dark brown (10YR 2/2) organic silty clay loam; common fine olive brown (2.5Y 4/6) mottles; very weak coarse platy; friable; violently effervescent; many snail shells, fragmented and whole; abrupt, conformable lower boundary.
40-62 (1.3-2.0)	2Cg1	grayish brown to light grayish brown (2.5Y 5.5/2) silty marl; one zone with many, fine, olive brown (2.5Y 4/6) mottles; very weak coarse subangular blocky; friable; violently effervescent; common snail and bivalve shells, fragmented and whole; common, fine, vertical pores with very dark grayish brown (10YR 3/2), continuous moderately thick organic coats; gradual lower boundary.
62-84 (2.0-2.8)	2Cg2	light grayish brown to light gray (2.5Y 6.5/2) silty marl; weak medium and coarse platy; friable; violently effervescent; common snail and bivalve shells, fragmented and whole; many, fine, vertical pores with very dark grayish brown (10YR 3/2), continuous moderately thick organic coats; clear lower boundary.
84-136 (2.8-4.5)	2Cg3	grayish brown to light grayish brown (2.5Y 5.5/2) silty marl; moderate medium and coarse platy; friable; violently effervescent; common snail and bivalve shells, mostly whole; few, fine, vertical pores with very dark grayish brown (10YR 3/2), discontinuous thin organic coats; very abrupt lower boundary.
136-184 (4.5-6.0)	3OCg1	very dark brown (10YR 2/2), very dark grayish brown (10YR 3/2), and dark grayish brown (10YR 4/2) marly peat with peat laminae, with few black (10YR 2/1) and grayish brown (10YR 5/2) strata (lightens upward overall); thinly to thickly laminated, moderately expressed; friable; violently effervescent; common to many snail and bivalve shells, mostly whole; very few, fine vertical pores in upper 20 cm; many very fine pieces of uncarbonized organic matter, overall decreasing upward. very abrupt, conformable lower boundary.
184-491 (6.0-16.1)	3OCg2	very dark grayish brown (2.5Y 3/2) and dark grayish brown (2.5Y 4/2) light marly peat, with black (10YR 2/1) peaty laminae; thinly to thickly laminated, moderately expressed; friable, soft; violently effervescent; common to many snail and bivalve shells, mostly whole; many, very fine pieces uncarbonized organic matter; very abrupt lower boundary;
491->560 (16.1->18.3)	4Cg	black (5Y 2.5/1) and very dark gray (5Y 3/1) highly organic marly silt loam with common laminae of black (2.5Y 2/0) and black (10YR 2/1) peat; thinly to thickly laminated, moderately expressed, down to thinly bedded and thickly laminated, moderately to weakly expressed; friable; strongly to violently effervescent but moderately effervescent at top; almost no shells; indeterminate lower boundary.
560-575 (18.3-18.9)		No recovery.

01ST01 (continued)

<575-592 (<18.9-19.4)	3OCg2'	very dark grayish brown (2.5Y 3/2), dark grayish brown (2.5Y 4/2), and grayish brown (2.5Y 5/2) marly peat with peat laminae; thinly to thickly laminated, moderately expressed; friable; violently effervescent; common to many snail and bivalve shells, mostly whole; abrupt lower boundary.
592-649 (19.4-21.3)	4Cg'	black (5Y 2.5/1) and very dark gray (5Y 3/1) highly organic marly silt loam, with common very thin laminae of black (2.5Y 2/0) peat; thinly to thickly laminated, moderately expressed down to thinly bedded and thickly laminated, moderately expressed; friable; violently effervescent; almost no shells; abrupt lower boundary.
649-690 (21.3-22.6)	5Cg1	very dark gray to dark gray (5Y 3.5/1) medium sand, one organic-enriched laminae; single grain, stratified, weakly expressed; loose; violently effervescent; abrupt lower boundary.
690->737 (22.6->24.2)	6Cg2	very dark gray (5Y 3/1) and dark olive gray (5Y 3/2) light silty clay loam; thinly to thickly laminated, strongly expressed; soft; violently effervescent; no visible organic matter or shells; indeterminate boundary.
737-771 (24.2-25.3)		No recovery.
<771-777 (<25.3-25.5)	6Cg3	very dark grayish brown to dark olive gray (2.5Y-5Y 3/2) silt loam; thinly laminated, very weakly expressed; friable; very weakly effervescent; abrupt, conformable lower boundary.
777-786 (25.5-25.8)	7Cg4	very dark grayish brown to dark olive gray (2.5Y-5Y 3/2) medium sand up to very fine sand, with few fine pebbles; single grain, weak, graded, upward fining; loose; moderately effervescent; abrupt, conformable lower boundary.
786->795 (25.8->26.1)	8C	strong brown (7.5YR 7.5/8) medium sand; single grain; loose; violently effervescent; base of core.

Core/Profile: 01ST02
 Location: catastrophic flood paleochannel (CPC)
 Legal description: NW SW SE NW 13 T123N R28W
 County: Stearns
 Parent material: glaciofluvial
 Vegetation: manicured grass
 Slope: 0-2%
 Elevation: 985 ft (300.2 m)
 Topo. Map: St. Augusta
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-21 (0-0.7)	A	black (10YR 2/1) fine and medium sandy loam; very weak medium breaking to fine subangular blocky; friable; noneffervescent; clear lower boundary.
21-38 (0.7-1.2)	E	very dark gray to very dark grayish brown (10YR 3.5/1) fine and medium sandy loam; very weak coarse subangular blocky; friable; noneffervescent; clear lower boundary.
38-52 (1.2-1.7)	Bw	very dark gray (10YR 3/1) fine and medium sandy loam; very weak coarse subangular blocky; friable; noneffervescent; clear lower boundary.
52-71 (1.7-2.3)	2C1	dark yellowish brown to light olive brown (10YR-2.5Y 4.5/4) fine sand; single grain; loose; noneffervescent; abrupt lower boundary.
71->91 (2.3->3.0)	2C2	grayish brown to light olive brown (2.5Y 5/2.5) fine sand, with very fine sand and very fine pebbly medium sand laminae; single grain, stratified, moderately expressed; loose; noneffervescent.
91-122 (3.0-4.0)		No recovery.
<122-128 (<4.0-4.2)	2C2	grayish brown to light olive brown (2.5Y 5/2.5) fine sand, with very fine sand and very fine pebbly medium sand laminae; single grain, stratified, moderately expressed; loose; noneffervescent; very abrupt lower boundary.
128->190 (4.2->6.2)	2C3	light brownish gray (2.5Y 6/2) and very pale brown (10YR 7/3) medium and coarse sand, with few very coarse sand strata; single grain, thinly bedded, moderately to strongly expressed; loose; noneffervescent; possible charcoal laminae at 175 cm; base of core.

Core/Profile: 01ST03
 Location: floodplain (FMB)
 Legal description: SE SE SW NW 13 T123N R28W
 County: Stearns
 Parent material: fluvial
 Vegetation: manicured grass
 Slope: 0-2%
 Elevation: 975 ft (297.2 m)
 Topo. Map: St. Augusta
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-8 (0-0.3)	A	very dark brown (10YR 2/2) fine and medium sandy loam; very weak fine subangular blocky and granular; friable; noneffervescent; clear lower boundary.
8-24 (0.3-0.8)	AC	very dark brown (10YR 2/2) fine and medium sandy loam; very weak coarse platy; friable; noneffervescent; clear to abrupt lower boundary.
24-44 (0.8-1.4)	Bw1	very dark brown to very dark grayish brown (10YR 2.5/2) silt loam; weak to moderate medium breaking to fine subangular blocky; friable; noneffervescent; abrupt, conformable lower boundary.
44-51 (1.4-1.7)	2Bw2	very dark grayish brown (10YR 3/2) loamy medium sand; very weak medium subangular blocky; very friable; noneffervescent; abrupt, conformable lower boundary.
51-59 (1.7-1.9)	2	strong brown (7.5YR 3/8) loamy medium sand; very weak medium subangular blocky breaking to single grain; very friable to loose; noneffervescent; abrupt, conformable lower boundary.
59->93 (1.9->3.1)	2C1	reddish brown (2.5YR 5/3) and brown (10YR 5/3) fine, medium and coarse sand, with few laminae of black (2.5Y 2/1) organic silt and peat (67-68, 75-76 cm); common, coarse horizontal dark yellowish brown (10YR 4/6) mottles; single grain, thinly bedded to thinly laminated, strongly expressed; loose; noneffervescent; indeterminate boundary.
93-122 (3.1-4.0)		No recovery.
<122->181 (<4.0->5.9)	2C2	dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 3/6) medium to very coarse sand, with very fine pebble gravel (122-171 cm), very dark gray (2.5Y 3/1) and black (2.5Y 2/1) very fine and fine sand with organic laminae (171-176 cm, 183-185 cm, 267-270 cm) and dark yellowish brown (10YR 4/4) very fine pebble gravel (176-183 cm); single grain, thinly bedded to thinly laminated, strongly expressed; loose; noneffervescent.
181-244 (5.9-8.0)		No recovery.
<244-282 (<8.0-9.2)	2C2	dark yellowish brown (10YR 3/4) and dark yellowish brown (10YR 3/6) medium to very coarse sand, with very fine pebble gravel (244-267 cm) and dark yellowish brown (10YR 4/4) very fine pebble gravel (270-282 cm); single grain, thinly bedded, moderately expressed; loose; noneffervescent; abrupt lower boundary.
282->344 (9.2->11.3)	2C3	light brownish gray (10YR-2.5Y 6/2) medium and coarse sand, moderately well sorted; single grain; loose; moderately effervescent; base of core.

Core/Profile: 01ST04
 Location: wetland in catastrophic flood paleochannel (CPCMA)
 Legal description: SW SW NW SE 19 T123N R27W
 County: Stearns
 Parent material: fill/wetland/glaciofluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 985 ft (300.2 m)
 Topo. Map: St. Augusta
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-15 (0-0.5)	C	black (10YR 2/1) organic loamy fine sand; very weak subangular blocky over very weak coarse platy; friable; noneffervescent; very abrupt, unconformable lower boundary, base of man-made fill.
15-23 (0.5-0.8)	2AO	black (10YR 2/0) silty peat, fine; moderate granular; friable; noneffervescent; clear lower boundary.
23-35 (0.8-1.1)	2O	black (10YR 2/0) silty peat (fine) with little fine sand; weak fine subangular blocky; friable; noneffervescent; clear lower boundary.
35-46 (1.1-1.5)	3Bg1	black to very dark brown (10YR 1/2.5) organic fine sandy loam; very weak subangular blocky to massive; very friable; noneffervescent; clear lower boundary.
46-58 (1.5-1.9)	4Bg2	black to very dark grayish brown (10YR 2.5/1.5) loamy fine sand; massive; very friable; noneffervescent; clear lower boundary.
58->87 (1.9->2.9)	4C1	light olive brown (2.5Y 5/3) pebbly fine and medium sand (few pebbles up to 1.5 cm diameter); very few horizontal very dark grayish brown (10YR 3/2) mottles; single grain, stratified, moderately expressed; loose; noneffervescent.
87-122 (2.9-4.0)		No recovery.
<122-157 (<4.0-5.1)	4C1	light olive brown (2.5Y 5/3) pebbly fine and medium sand (few pebbles up to 1.5 cm diameter); very few horizontal very dark grayish brown (10YR 3/2) mottles; single grain, stratified, moderately expressed; loose; noneffervescent; abrupt lower boundary.
157-182 (5.1-6.0)	4C2	dark brown to brown (10YR 4/3) and dark yellowish brown (10YR 4/4) coarse and very coarse sand, moderately sorted; single grain, stratified, moderately expressed; loose; noneffervescent; base of core.
182->244 (6.0->8.0)		No recovery.

Core/Profile: 01ST05
 Location: wetland in catastrophic flood paleochannel (CPCMA)
 Legal description: NE SW NW SE 19 T123N R27W
 County: Stearns
 Parent material: fill/wetland/glaciofluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 985 ft (300.2 m)
 Topo. Map: St. Augusta
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-6 (0-0.2)	O	very dark brown (10YR 2/2) peat, fine, fibrous; friable; noneffervescent; abrupt lower boundary.
6-39 (0.2-1.3)	2C	dark grayish brown (10YR 4/2) loamy fine sand and dark yellowish brown (10YR 4/8) and dark yellowish brown (10YR 4/6) pebbly fine sandy loam; stratified, strongly expressed; friable; noneffervescent; very abrupt lower boundary, base of man-made fill.
39-63 (1.3-2.1)	3Ob1	black (10YR 2/1) fine fibrous peat; fibrous; friable; noneffervescent; clear lower boundary.
63->74 (2.1->2.4)	3Ob2	black (10YR 2/1) fine peat with fibrous zones, with little silt loam; weak fine subangular blocky; friable; noneffervescent.
74-122 (2.4-4.0)		No recovery.
<122-154 (<4.0-5.1)	3Ob2	black (10YR 2/1) fine peat with fibrous zones, with little silt loam; very weak fine subangular blocky; friable; noneffervescent; gradual lower boundary.
154-173 (5.1-5.7)	3Ob3	black (10YR 2/0) fine peat with little silt; very weak subangular blocky; friable; noneffervescent; clear lower boundary.
173->186 (5.7->6.1)	3OC	black (10YR 2/1) peat, fine, and peaty silt, with few thin laminae of gray to light gray (5Y 6/1) fine sand; thinly laminated, weakly expressed; friable; noneffervescent.
186-244 (6.1-8.0)		No recovery.
<244-279 (<8.0-9.2)	3OC	black (10YR 2/1) fine peat and peaty silt, with few thin laminae of gray to light gray (5Y 6/1) fine sand; thinly laminated, weakly expressed; friable; noneffervescent; abrupt lower boundary.
279-291 (9.2-9.5)	4Cg1	black (2.5Y 2.5/1) organic loamy sand; massive, single bed; very friable; noneffervescent; clear lower boundary.
291-301 (9.5-9.9)	5Ob	black (10YR 2/1) peat, fibrous; single bed; friable; noneffervescent; few fine woody pieces of organic matter; very abrupt, irregular lower boundary.
301-346 (9.9-11.3)	6Cg1	very dark grayish brown and very dark gray peaty and marly silt loam and peaty fine sandy loam, with few dark gray (5Y 4/1) fine sand laminae; thinly to thickly laminated, moderately to strongly expressed; friable; strongly to violently effervescent; common uncarbonized macrobotanical remains, including twigs; abrupt, conformable lower boundary.
346-365 (11.3-12.0)	7Cg2	dark gray (5Y 4/1) fine pebbly (up to 2.5 cm diameter) medium and coarse sand; single grain, stratified, moderately expressed; loose; violently effervescent; abrupt lower boundary.
360->381 (12.0->12.5)	7Cg3	dark reddish gray (5YR 4/2) sandy loam and loamy sand; indeterminate structure; friable to loose; strongly effervescent; base of core.

Core/Profile: 01ST06

Location: wetland in catastrophic flood paleochannel (CPCMA)

Legal description: NE SW NW SE 19 T123N R27W

County: Stearns

Parent material: fill/wetland/bedrock

Vegetation: sedges

Slope: 0-2%

Elevation: 987.5 ft (300.8 m)

Topo. Map: St. Augusta

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-11 (0-0.4)	O	black (10YR 2/1) peat, fine, fibrous; friable; noneffervescent; abrupt lower boundary.
11-45 (0.4-1.5)	2C	very dark brown (10YR 2/2), dark yellowish brown (10YR 3/6) and dark yellowish brown (10YR 4/6) fine pebbly sandy loam; stratified, strongly expressed; friable; noneffervescent; very abrupt lower boundary, base of man-made fill.
45->46 (1.5->1.5)	3Ob	black (10YR 2/0) peat, fine, fibrous; friable; noneffervescent.
46-122 (1.5-4.0)		No recovery.
<122->142 (<4.0->4.7)	3Ob	black (10YR 2/0) peat, fine, fibrous; friable; noneffervescent; very abrupt lower boundary; abrupt refusal on bedrock.

Core/Profile: 01ST07
 Location: wetland in catastrophic flood paleochannel (CPCMA)
 Legal description: SW SW NW SE 19 T123N R27W
 County: Stearns
 Parent material: fill/wetland/glaciofluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 985 ft (300.2 m)
 Topo. Map: St. Augusta
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-0.3)	O	black (10YR 2/1) peat, fibrous, with some fine sand; very weak, fine subangular blocky and fibrous; friable; noneffervescent; abrupt lower boundary.
10-30 (0.3-1.0)	2C	dark grayish brown to brown (10YR 4/2.5) and black (10YR 2/1) sandy loam and loamy sand; stratified, strongly expressed; friable; noneffervescent; very abrupt unconformable lower boundary, base of man-made fill.
30->49 (1.0->1.6)	3Ob1	black (10YR 2/1) to very dark brown (10YR 2/2) peat, fine, fibrous; very weak, fine, subangular blocky and fibrous; friable; noneffervescent.
49-61 (1.6-2.0)		No recovery.
<61-147 (<2.0-4.8)	2Ob1	very dark brown (10YR 2/2) fine, fibrous, peat; very weak fine subangular blocky and fibrous; friable; noneffervescent; clear lower boundary.
147-167 (4.8-5.5)	2Ob2	black (10YR 2/0) peat, fine, with little fine sand and silt; very weak subangular blocky; friable; noneffervescent; gradual lower boundary.
167-183 (5.5-6.0)	3OC	black (10YR 2/0) down to black (10YR 2/1) peaty silt, with few thin laminae of gray gray to light gray (5Y 6/1) fine sand; thinly laminated, weakly expressed; friable; noneffervescent; clear lower boundary..
183-230 (6.0-7.5)	4Ob	black (10YR 2/0) peat, fine, with few uncarbonized wood fragments, with some fine sand in lower 15 cm; common bioturbated zones with dark gray (5Y 4/1) fine sand and peat mixed, and very dark brown (10YR 2/2) fine and medium sand grains in peat; thinly to thickly laminated, weakly expressed; friable; noneffervescent; clear, conformable lower boundary.
230-236 (7.5-7.7)	5Cg1	black (10YR 2/1) peaty fine sand, and few laminae of very dark gray (5Y 3/1) fine sand; thinly to thickly laminated, moderately expressed; friable to loose; noneffervescent; abrupt, conformable lower boundary.
236-272 (7.7-8.9)	6Cg2	very dark grayish brown (2.5Y 3/2) and black (2.5Y 2/2) marly peat, fine, with common laminae of uncarbonized macrobotanical material; thinly to thickly laminated, moderately expressed; friable; violently effervescent; abrupt, conformable lower boundary.
272-293 (8.9-9.6)	7Cg3/6Cg2	dark gray (5Y 4/1) very fine and fine sand, well sorted, and very dark grayish brown black (2.5Y 2/2) marly peat or silty peat, fine; thinly laminated to thinly bedded, strongly expressed; friable to loose; violently effervescent; very abrupt, conformable lower boundary.
293-312 (9.6-10.2)	8Cg4	dark gray (5Y 4/1) very coarse sand; single grain, single bed; loose; violently effervescent; clear, conformable lower boundary.
312-318 (10.2-10.4)	8Cg5	very dark gray (5Y 3/1) very fine and fine sand; single bed, single grain, stratified, moderately expressed; loose; violently effervescent; abrupt, conformable lower boundary.
318-330 (10.4-10.8)	8Cg6	very dark gray to dark olive gray (5Y 3/1.5) medium and coarse sand, with few, fine pebbles; single grain, stratified, weakly expressed; loose; moderately effervescent; abrupt lower boundary.
330->335 (10.8->11.0)	8Cg7	brown (7.5YR 4/2) loamy fine and very fine sand, with few fine pebbles; single grain, stratified, weakly expressed; loose; moderately effervescent; base of core.

Core/Profile: 01ST08

Location: exposed lake bed in ice block depression open to catastrophic flood paleochannel (LLB)

Legal description: NE SW NW SW 27 T123N R27W

County: Stearns

Parent material: wetland/lacustrine/lacustrine ice contact

Vegetation: wetland

Slope: 0-2%

Elevation: 955 ft (291.1 m)

Topo. Map: Clearwater

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-6 (0-0.2)	O	very dark brown (10YR 2/2) fibrous peat; moderate, granular; very friable; noneffervescent; clear to abrupt lower boundary.
6-35 (0.2-1.1)	OA	black (10YR 2/1) peaty silt loam; weak medium breaking to fine subangular blocky; very friable; violently effervescent; many snail shells, whole and fragmented; abrupt lower boundary.
35-47 (1.1-1.5)	2BCg	black (2.5Y 2/1) organic silty clay loam; weak medium breaking to fine subangular blocky over very weak medium platy; friable; noneffervescent; clear lower boundary.
47-59 (1.5-1.9)	2Cg1	black (2.5Y 2.5/1) organic silty clay loam; weak medium subangular blocky over very weak medium platy; friable; moderately effervescent; many snail and bivalve shells, whole and fragmented; clear lower boundary.
59-74 (1.9-2.4)	3Cg2	gray to olive gray (5Y 5/1.5) silt loam marl; very weak subangular blocky over very weak platy; friable; violently effervescent; many snail and bivalve shells, mostly whole; clear lower boundary.
74-89 (2.4-2.9)	4Cg3	very dark gray (2.5Y 3/1), dark gray (2.5Y 4/1), very dark grayish brown (2.5Y 3/2) silty clay loam; thinly laminated, moderately to strongly expressed; friable; violently effervescent; very few snail shells, whole and fragmented; abrupt lower boundary.
89-92 (2.9-3.0)	5OAb	very dark brown (10YR 2/2) peaty silt loam; weak fine subangular blocky; very friable; strongly effervescent; common snail shells, whole and fragmented; abrupt lower boundary.
92-95 (3.0-3.1)	5BCgb	black (2.5Y 2/2) marly silt loam; weak fine subangular blocky; very friable; violently effervescent; common snail shells, whole and fragmented; abrupt lower boundary.
95->105 (3.1-3.4)	5CBg	gray to olive gray (5Y 5/1.5) silt loam marl; weak medium breaking to fine subangular blocky over very weak platy; friable; violently effervescent; many snail and bivalve shells, whole and fragmented; indeterminate lower boundary.
105-122 (3.4-4.0)		No recovery.
<122-210 (<4.0-6.9)	5Cg1	light yellowish brown (2.5Y 6/3), light olive brown (2.5Y 5/3), grayish brown (2.5Y 5/2), dark grayish brown (2.5Y 4/2), very dark grayish brown (2.5Y 3/2), and olive brown (2.5Y 4/3) silt loam marl, overall darker colors become more predominant with depth; moderate to strong medium platy to laminae in thin beds defined by color changes; friable; violently effervescent; common to many snail and bivalve shells, whole and fragmented, mostly whole; very abrupt lower boundary, marked by steeply dipping, organic coated, fracture plane.
210->234 (6.9->7.7)	5Cg2	dark olive gray (5Y 3/2) and black (5Y 2.5/1) marly silt loam; thinly bedded; friable; violently effervescent; indeterminate lower boundary.
234-244 (7.7-8.0)		No recovery.
<244-258 (<8.0-8.5)	5Cg1'	olive brown (2.5Y 4/3) to dark brown to brown (10YR 4/3) and dark grayish brown (2.5Y 4/2) to dark grayish brown (10YR 4/2) marly silt loam; moderate, thinly bedded and laminated; friable; violently effervescent; common snail shells, whole and fragmented; very abrupt lower boundary;.

01ST08 (continued)

258-275 (8.5-9.0)	5Cg2'	very dark gray (5Y 3/1) and dark gray (5Y 4/1) marly silt loam; very weak, laminae; friable; violently effervescent; abrupt to clear lower boundary.
275-293 (9.0-9.6)	5Cg3	very dark gray (5Y 3/1) down to black (5Y 2.5/1) marly silt loam; very weak medium breaking to fine subangular blocky; friable; violently effervescent; very few snail shell fragments; clear lower boundary.
293->310 (9.6->10.1)	5Cg4	black (5Y 2.5/2) marly silt loam; massive to thinly bedded, moderately expressed; friable; violently effervescent.
310-366 (10.1-12.0)		No recovery.
<366-415 (<12.0-13.6)	5Cg4	black (5Y 2.5/2, 2.5/1) and dark olive gray (5Y 3/2) marly silt loam; massive to thinly bedded, moderately expressed; friable; violently effervescent; uncarbonized organic matter fragments at 388 cm; abrupt, conformable lower boundary.
415-421 (13.6-13.8)	5Cg5	dark gray to olive gray (5Y 4/1.5) and light olive gray (5Y 6/2) marly silt loam, with little very fine sand; laminated, moderately expressed; friable; violently effervescent; very abrupt lower boundary.
421-499 (13.8-16.4)	6Cg6	very dark to dark gray (5Y 3.5/1) down to dark gray (5Y 4/1) loamy fine sand down to fine sand, well sorted; single grain, stratified, moderately to weakly expressed; loose; strongly effervescent; common thin to thick laminae of fine uncarbonized organic mats at 422, 429, 439, 440, 446-449, 491-495 cm; clear lower boundary;
499->531 (16.4->17.4)	6Cg7	dark gray to gray (5Y 4.5/1) fine sand, with some medium sand, moderately well sorted; single grain, stratified, very weakly expressed; loose; strongly effervescent, indeterminate boundary.
531-610 (17.4-20.0)		No recovery; base of core

Core/Profile: 01ST09

Location: road embankment over ice block depression in catastrophic flood paleochannel (CD)

Legal description: NE NW SW SW 27 T123N R27W

County: Stearns

Parent material: fill/lacustrine/lacustrine ice contact

Vegetation: mown grass

Slope: 0-2%

Elevation: 965 ft (294.1 m)

Topo. Map: Clearwater

Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-7 (0-0.2)	A	fine and medium sand; granular; very friable to light loose; moderately effervescent; clear lower boundary.
7-34 (0.2-1.1)	CB	fine and medium sand; thinly bedded, weakly expressed; light loose; strongly effervescent; very abrupt, unconformable lower boundary, base of man-made fill.
34-54 (1.1-1.8)	2BCb	organic fine and medium sandy loam; weak medium subangular blocky over very weak coarse platy; friable; strongly to violently effervescent; clear to abrupt lower boundary.
54-64 (1.8-2.1)	2C	organic marly silt loam, with few peds of underlying marl; thinly bedded to thickly laminated, very weakly expressed; friable; violently effervescent; common snail shells, whole and fragmented, mostly fragmented; very abrupt, unconformable lower boundary.
64->111 (2.1->3.6)	3Cg1	light brownish gray (2.5Y 6/2), light gray (2.5Y 7/2) (64-87 cm), grayish brown to light grayish brown (2.5Y 5.5/2) (87-98 cm), dark grayish brown to grayish brown (2.5Y 4.5/2) (98-104 cm), and light brownish gray (2.5Y 6/2) (104-111 cm) silt loam marl; thinly bedded, moderately expressed, internally weakly laminated; friable; violently effervescent; few to many snail and bivalve shells, whole and fragmented; indeterminate lower boundary.
111-122 (3.6-4.0)		No recovery.
<122->187 (<4.0->6.1)	3Cg2	gray to light gray (5Y 6/1) silt loam marl; common, fine, faint, light olive brown (2.5Y 5/4) mottles in upper half; thinly bedded, very weakly expressed, with massive to very weak subangular blocky; friable; violently effervescent; zones with few to common snail and bivalve shells, mostly whole; indeterminate lower boundary.
187-244 (6.1-8.0)		No recovery.
<244-274 (<8.0-9.0)	3Cg3	gray to olive gray (5Y 5/1.5) silt loam marl; few, medium dark yellowish brown (10YR 4/6) mottles; very weak subangular blocky; friable; violently effervescent; few fine roots throughout; gradual lower boundary.
274-357 (9.0-11.7)	3Cg4	dark gray (5Y 4/1) silt loam marl down to very dark gray (5Y 3/1) organic silt loam marl; thinly bedded, moderately to strongly expressed, and thinly laminated, very weakly to weakly expressed; with light olive gray (5Y 6/2) and pale olive (5Y 6/3) silt loam and very fine to fine sandy loam marl; thinly bedded, moderately to strongly expressed; friable; violently effervescent; few to common fine roots throughout, zones with few to many snail shells, mostly whole, few bivalve shells; abrupt lower boundary.
357-367 (11.7-12.0)	4Cg5	black (5Y 2.5/1) organic fine sand, moderately well sorted; single grain, thinly bedded, very weakly expressed; loose; slightly to moderately effervescent; common very fine uncarbonated organic matter mats, (356 360 cm); clear to abrupt lower boundary.
367-444 (12.0-14.6)	4Cg6	very dark gray to dark gray (5Y 3.5/1) medium sand, with some coarse sand, moderately well sorted; single grain, massive; loose; violently effervescent; one thick mat of uncarbonated organic matter (479 cm); clear lower boundary.
444->488 (14.6->16.0)	4Cg7	very dark gray to dark gray (5Y 3.5/1) fine pebbly coarse sand and medium sand; single grain, thinly bedded, very weakly expressed; loose; violently effervescent; base of core.

Core/Profile: 01ST10

Location: road embankment over wetland in catastrophic flood paleochannel (CPC)

Legal description: center NE NW SW 28 T123N R27W

County: Stearns

Parent material: fill/wetland/glaciofluvial deposits

Vegetation: none

Slope: 0-2%

Elevation: 978 ft (298.1 m)

Topo. Map: Clearwater

Remarks:

Depth cm(ft)	Horizon or Zone	Description
<122-174 (<4.0-5.7)	C	very dark grayish brown (10YR 3/2), dark brown (10YR 3/3) and very dark brown (10YR 2/3) fine and medium sand, with few fine pebbles; single grain, thinly bedded, moderately expressed; friable to loose; noneffervescent; very abrupt, disturbed lower boundary, base of man-made fill.
174-201 (5.7-6.6)	2OCg	black (2.5Y 2/0) and black (2.5Y 2/1) peat down to peaty fine sandy loam; moderate fine and medium platy; friable; weakly effervescent down to noneffervescent; some strata enriched in uncarbonized macrobotanical remains; abrupt lower boundary.
201-207 (6.6-6.8)	3Cg	black (5Y 2.5/1) organic fine and medium sand; single grain, stratified, weakly expressed; loose; noneffervescent; abrupt, conformable lower boundary.
207->244 (6.8->8.0)	3Cg	dark olive to olive (5Y 3.5/3) fine and medium sand, with some very fine gravel, one stratum of very fine pebbly coarse sand; single grain, stratified, weakly expressed; loose; noneffervescent; base of core.

Core/Profile: 01ST11
 Location: wetland in swale on low terrace (VT1MA)
 Legal description: SW NW NW NE 28 T123N R27W
 County: Stearns
 Parent material: wetland/fluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 947.5 ft (288.8 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-0.3)	AO	black (10YR 2/1) silty peat, with little sand; very fine granular; friable to fibrous; noneffervescent; many very fine roots; abrupt boundary.
10-110 (0.3-3.6)	O	black (10YR 2/1) peat, with little sand; weak medium subangular blocky; friable; noneffervescent; abrupt boundary.
110-145 (3.6-4.8)	OC	black (10YR 2/1) peaty silt loam; very weak, coarse platy; friable; noneffervescent; abrupt boundary.
145-200 (4.8-6.6)	2Cg1	very dark gray (2.5Y 3/1) organic silt loam and peaty silt loam; very weak, coarse platy; friable; noneffervescent; common fine pieces uncarbonized organic matter; abrupt lower boundary.
>200 (>6.6)	3Cg2	darkgray (2.5Y 4/1) medium sand, with few pebbles; single grain; loose; weakly effervescent; base of probe.

Core/Profile: 01ST12
 Location: fen wetland in swale on low terrace (VT1MA)
 Legal description: NE NE NW NW 28 T123N R27W
 County: Stearns
 Parent material: wetland/fluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 947.5 ft (288.8 m)
 Topo. Map: Clearwater
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-145 (0-4.8)	O	black (10YR 2/1) peat; weak medium subangular blocky to massive; friable; noneffervescent; abrupt boundary.
145-160 (4.8-5.2)	OC	black (10YR 2/1) peaty silt loam with some sand; indeterminate structure; soft; noneffervescent; abrupt boundary.
>160 (>5.2)	2Cg	dark gray (2.5Y 4/1) fine and medium sand; single grain; loose; weakly effervescent; base of probe.

Core/Profile: 01WI01
 Location: wetland in catastrophic flood paleochannel (CPC)
 Legal description: SW SW SE SW 4 T121N R25W
 County: Wright
 Parent material: wetland/glaciofluvial
 Vegetation: sedges
 Slope: 0-2%
 Elevation: 945 ft (288.0 m)
 Topo. Map: Monticello
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-11 (0-0.4)	O1	black (10YR 2/1) peat, with little sand; very fine granular; friable to fibrous; noneffervescent; many very fine roots; abrupt boundary..
11-17 (0.4-0.6)	O2	black (10YR 2/1) peat, with common sand; weak medium subangular blocky; friable; noneffervescent; abrupt boundary.
17-27 (0.6-0.9)	OA	black (10YR 2/1) peaty sandy loam; very weak, coarse platy; friable; noneffervescent; abrupt boundary.
27-46 (0.9-1.5)	2BC	very dark to dark grayish brown (10YR 3.5/2) heavy sandy loam; weak, coarse subangular blocky over very weak, coarse platy; friable to firm; noneffervescent; abrupt, conformable lower boundary.
46-54 (1.5-1.8)	3 1	dark yellowish brown (10YR 3/6) fine gravel in medium sand matrix; single grain, single bed; loose; noneffervescent; abrupt, conformable lower boundary.
54-68 (1.8-2.2)	4 2	yellowish brown (10YR 5/6) fine sand ; single grain; loose; weakly effervescent; abrupt, conformable lower boundary.
68->88 (2.2->2.9)	4C	pale brown (10YR 6/3) fine sand ; single grain; loose; strongly effervescent.
88-122 (2.9-4.0)		No recovery.
<122-149 (<4.0-4.9)	4C	pale brown (10YR 6/3) fine sand ; single grain; loose; strongly effervescent; abrupt, conformable lower boundary.
149->203 (4.9->6.7)	4Cg	grayish brown (2.5Y 5/2) medium and coarse sand, moderately well sorted; single grain, thinly bedded, weakly expressed; loose; violently effervescent; base of core.