

Core/Profile: CH-1
 Location: Swanson Farm Area 1
 Legal description: NE ¼ Section 4 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Sod
 Slope: <2%
 Elevation: 860 feet
 Topo. Map: North Branch
 Remarks: Farthest west core in transect; closest to bluff-line

Depth cm(ft)	Horizon or Zone	Description
0-32 (0-1.0)	O1	black to very dark brown (7.5YR2/1) with orange hi-lights partially oxidized peat with some wood; noneffervescent; clear lower boundary; bog.
32-57 (1.0-1.9)	O2	black (10YR2/1) woody peat; strata, weakly expressed; noneffervescent; abrupt lower boundary; cf. <i>Picea</i> wood from 52-57 cm C-14 dated at 1,740±50 BP; bog.
60-137 (1.9-4.5)	O3	black (10YR2/1) peat with some wood; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
137-≥256 (4.5-≥8.4)	O4	black (10YR2/1±) fibrous peat, little wood; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
≥256-750 (≥8.4-24.6)	O5	black (10YR2/0) woody peat; strata, very weakly expressed; noneffervescent; abrupt lower boundary; wood from 747-750 cm C-14 dated at 5,340 ±50 BP; bog.
750-785+ (24.6-25.8+)	2Cg1	dark reddish brown (5YR3/3) medium sand, little fines, with few reddish brown (5YR4/3) silty clay laminae; strata, moderately expressed, single grain; loose; noneffervescent; 763-772 cm is woody peat with very abrupt contact; assuming <u>not</u> in place, but there does appear to be several organic laminae in upper 2 cm of sand in 763-786 cm segment; indeterminate lower boundary; glaciofluvial.
Auger Samples:		
<916->1051 (<30.1->34.5)	2Cg2	dark reddish brown (5YR3/3) fine sand, with swirls of peat with wood - likely contamination; indeterminate structure, single grain; loose; strongly effervescent; glaciofluvial.
<1160->1295 (<38.1->42.5)	2Cg3	dark reddish brown (5YR3/3) loamy very fine sand, with few peat swirls - likely contamination; indeterminate structure; loose to very friable; violently effervescent; glaciofluvial.

Core/Profile: CH-2
 Location: Swanson Farm Area 1
 Legal description: NE ¼ Section 4 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <2%
 Elevation: 858 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-32 (0-1.0)	O1	peat, woody, slightly oxidized; noneffervescent; clear lower boundary; bog.
32-587 (1.0-19.3)	O2	peat, little wood; noneffervescent; clear lower boundary; bog.
587-615 (19.3-20.2)	O3	peat, woody, few large pieces; noneffervescent; very abrupt lower boundary; bog.
615-643 (20.2-21.1)	2Cg1	reddish brown (5YR4/3) loamy fine sand; indeterminate structure, probably stratified originally; very friable; noneffervescent; glaciofluvial.
Auger Samples:		
<649->805 (<21.3->26.4)	2Cg2	dark reddish brown (5YR3/3) medium sand; single grain; loose; strongly effervescent; glaciofluvial.
<918->1053 (<30.1->34.5)	2Cg3	dark reddish brown (5YR3/3) loamy very fine to fine sand; single grain; loose; violently effervescent; glaciofluvial.
<1162->1297 (<38.1->42.6)	2Cg4	dark reddish brown (5YR3/3) fine sand and loamy very fine and fine sand; single grain; loose; violently effervescent; glaciofluvial.
<1162->1297 (<38.1->42.6)	3Cg5	reddish brown (5YR5/3) clay; laminated; violently effervescent; lacustrine.

Core/Profile: CH-3
 Location: Swanson Farm Area 1
 Legal description: NE ¼ Section 4 T35N R21W
 County: Chisago
 Parent material: Bog/alluvium/glaciofluvial
 Vegetation: Sod
 Slope: <1%
 Elevation: 858 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-41 (0-1.3)	O1	black (10YR2/0) peat, woody; noneffervescent; clear lower boundary; bog.
41-≥109 (1.3-≥3.6)	O2	very dark brown (10YR2/2) peat, fibrous; noneffervescent; abrupt lower boundary; bog.
≥109-632 (≥3.6-20.7)	O3	black (10YR2/0) peat, woody; noneffervescent; abrupt lower boundary; bog.
632-642 (20.7-21.1)	O4	black (10YR2/1) peat, fibrous, with little biogenic calcite; moderately effervescent; very little amount of underlying material incorporated as discrete clasts; very abrupt lower boundary; bog.
642-664 (21.1-21.8)	2Cg	grayish brown (2.5Y5/2.5) biogenic calcite with common laminae of black (10YR2/1) peat; strata, very weakly expressed; very plastic; extremely violently effervescent; many snail shells, whole, common, fine, uncarbonized pieces of organic matter; very abrupt lower boundary; bog.
664-678 (21.8-22.2)	3O4'	black (10YR2/1) peat, fibrous, with common biogenic calcite; strongly effervescent; very abrupt lower boundary; bog.
678-690 (22.2-22.6)	3O5	black (10YR2/1) peat, fibrous, with grayish brown (2.5Y5/2.5) zones, with much biogenic calcite; strata, very weakly expressed; violently effervescent; few snail shells, whole; abrupt lower boundary; bog.
690-710 (22.6-23.3)	4Cg	olive gray (5Y4/2) biogenic calcite to very dark grayish brown to dark olive gray (2.5Y-5Y3/2) silt; strata, very weakly expressed; very plastic; extremely violently effervescent; few snail shells, whole; common, fine uncarbonized organic matter pieces; very abrupt lower boundary; bog.
710-712 (23.3-23.4)	5OAb	black (10YR2/1) silty peat; indeterminate structure; very plastic; noneffervescent; many, very fine uncarbonized organic matter; abrupt lower boundary; alluvium.
712-727 (23.4-23.9)	5AOB	very dark grayish brown (2.5Y3/1.5) peaty silt down to (2.5Y3/2) silt; very weak, subangular blocky over strata, very weakly expressed; plastic; noneffervescent; common, fine pores and roots; abrupt lower boundary; alluvium.
727-736 (23.9-24.1)	6Cg1	dark reddish brown (5YR3/3) fine sandy loam, with few thin to medium laminae of very dark grayish brown (2.5Y3/2) silt loam in upper 2 cm; strata, very weakly expressed; plastic to friable; noneffervescent; most of horizon consists of wood, possibly one or two large pieces, that is definitely beneath the top of 5YR seds; abrupt lower boundary; glaciofluvial.
736-791 (24.1-30.0)	6Cg2	reddish brown (5YR4/3) and (5YR4/4) loamy fine sand and fine sandy loam and clay; thin beds to thick laminae; very friable, friable to plastic; noneffervescent; glaciofluvial .
Auger Sample:		
<919->1054 (<30.2->34.6)	6Cg3	reddish brown (5YR4/3) fine and medium sand, with few inclusions of reddish brown (5YR4/4) clay; indeterminate structure; violently effervescent; glaciofluvial.

Core/Profile: CH-4
 Location: Swanson Farm Area 1
 Legal description: NE ¼ Section 4 T35N R21W
 County: Chisago
 Parent material: Bog/alluvium/glaciofluvial
 Vegetation: Sod
 Slope: <1%
 Elevation: 858 feet
 Topo. Map: North Branch
 Remarks: Farthest east core in transect

Depth cm(ft)	Horizon or Zone	Description
0-55 (0-1.8)	O1	black (10YR2/1), slightly oxidized, peat, woody; noneffervescent; clear lower boundary; <i>Picea sp.</i> wood from 50-53 cm C-14 dated at 1,270±40 BP; bog.
55->61 (1.8->2.0)	O2	black (10YR2/0) peat, fibrous, stratified; noneffervescent; indeterminate lower boundary; bog.
<378->388 (<12.4->12.7)	O3/2Cg	black (10YR2/0) peat, fibrous, and dark grayish brown (2.5Y4/2) biogenic calcite, with organics; stratified; very plastic; noneffervescent peat to biogenic calcite is extremely violently effervescent; many fine snail shell, whole and fragments in marl; indeterminate lower boundary; bog.
<623-786 (<20.4-25.8)	O4	very dark brown (10YR2/2) peat, fibrous, noneffervescent; abrupt lower boundary; wood from 757-761 cm C-14 dated at 1,220±40 BP; bog.
786-825 (25.8-27.1)	O4/2Cg'	black (10YR2/1±) peat, fibrous, to dark grayish brown (2.5Y4/2) biogenic calcite, with organics; stratified; very soft; peat is noneffervescent; extremely violently effervescent biogenic calcite; common, fine, snail shells, whole, fragments in biogenic calcite; abrupt lower boundary; bog.
825-845 (27.1-27.7)	O5	black (10YR2/0) peat, fibrous, with some biogenic calcite; strata, very weakly expressed, very soft, violently effervescent; very few, fine, snail shell fragments; abrupt lower boundary; bog.
845-857	2Cg1'	very dark to dark grayish brown (2.5Y3.5/2) silty marl; strata, very weakly expressed; very plastic; extremely violently effervescent; abrupt lower boundary; bog.
857-864 (27.7-28.3)	2CAgb	black to very dark grayish brown (2.5Y2.5/2) marly silt; very weak, subangular blocky over strata, very weakly expressed; very plastic; violently effervescent; abrupt lower boundary; bog.
864-870 (28.3-28.5)	2AOgb	black (2.5Y2.5/0) peaty silt; very weak, subangular blocky; plastic; slightly effervescent; very abrupt lower boundary; alluvium.
870-872 (28.5-28.6)	3Cg1	weak red (2.5YR4/3,4/2) granular medium sand and black to very dark gray to very dark grayish brown (2.5Y2.5/1) sandy loam; laminated, moderately expressed, single grain; loose; violently effervescent; very abrupt lower boundary; alluvium.
872-882 (28.6-28.9)	3Cg2	reddish brown (2.5YR4/4) and (5YR4/4) loamy fine and medium sand and fine and medium sandy loam, with few reddish brown (5YR4/3) clay laminae; strata, weakly to moderately expressed, single grain; loose; noneffervescent; very abrupt lower boundary; alluvium.
882-1057 (28.9-34.7)	4O/3Cg3	black (10YR2/0) to very dark brown (10YR2/2) peat and marley peat with interstratified thin beds and laminae of dark reddish brown (5YR3/3) and dark reddish brown (5YR3/2), loamy fine sand, fine sand and medium sand, and weak red (2.5YR5/2) biogenic calcite; strata, moderately expressed, sand is single grain; very plastic to loose; violently effervescent; very abrupt lower boundary; seeds of <i>Cyperaceae</i> (<i>Cyperus sp./Carex sp.</i>), <i>Helianthus sp.</i> , <i>Najas sp.</i> , and <i>Rhus sp.</i> from 1037-1042 cm C-14 dated at 3,660±50 BP; alluvium.
1057-1073+ (34.7-35.2+)	4Cg4	dark reddish brown (5YR3/3) fine and medium sand; strata, moderately expressed, single grain; loose; noneffervescent; glaciofluvial.
Auger Samples:		
1160-1295 (38.1-42.5)	5Cg5	dark reddish brown (5YR3/2,3/3) very fine sandy loam, loamy very fine sand, with few fine pebbles; indeterminate structure, probably single grain; probably loose; strongly to moderately effervescent; glaciofluvial.
1404-1539 (46.1-50.5)	5Cg6	dark reddish brown (5YR3/3) fine sand, little fines; single grain; loose; strongly effervescent; glaciofluvial.

Core/Profile: CH-5
 Location: Swanson Farm Area 2
 Legal description: NW ¼ Section 14 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Sod
 Slope: <1%
 Elevation: 846 feet
 Topo. Map: North Branch
 Remarks: Farthest north core in transect

Depth cm(ft)	Horizon or Zone	Description
0-29 (0-1.0)	O1	black (10YR2/1) slightly oxidized peat, woody; noneffervescent; clear lower boundary; bog.
29-39 (1.0-1.3)	O2	very dark brown (10YR2/2) peat; noneffervescent; abrupt lower boundary; bog.
39-46 (1.3-1.5)	O3	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
46-76 (1.5-2.5)	O4	black to very dark brown (10YR2/1.5) peat, with little organic silt; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
76-83 (2.5-2.7)	O5	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
83-90 (2.7-3.0)	O6	black to very dark brown (10YR2/1.5) peat, with little organic silt; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
90-122 (3.0-4.0)	O7	black (10YR2/1) peat, with much organic silt; strata, weakly expressed; noneffervescent; few to common fine vertical roots; abrupt lower boundary; bog.
122-145 (4.0-4.8)	O8	very dark brown (10YR2/2) peat; strata, weakly expressed; noneffervescent; common to many fine vertical roots; abrupt lower boundary; bog.
145-165 (4.8-5.4)	O9	black (10YR2/1) peat, woody; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
165-188 (5.4-6.2)	2Cg1	dark to very dark grayish brown (2.5Y3.5/1.5) fine sandy loam and loamy fine sand down to dark brown (7.5YR3.5/2) loamy fine sand down to dark brown (7.5YR3.5/2.5) light loam; strata, moderately expressed; noneffervescent; abrupt lower boundary; glaciofluvial.
188-202+ (6.2-6.6+)	3Cg2	dark reddish brown to dark reddish gray (5YR3.5/2) granular fine and medium sand with fine pebbles; strata, weakly expressed; noneffervescent; glaciofluvial.
Auger Samples:		
<237->319 (<7.8->10.5)	3Cg2	dark reddish brown (5YR3/2) medium sand, little fines; single grain; loose; noneffervescent; glaciofluvial.
<428->563 (<14.0->18.5)	3Cg2	dark reddish brown (5YR3/2) medium and coarse sand; single grain; loose; noneffervescent; glaciofluvial.

Core/Profile: CH-6
 Location: Swanson Farm Area 2
 Legal description: NW ¼ Section 14 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Sod
 Slope: <1%
 Elevation: 846 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-35 (0-1.1)	O1	black (10YR2/1) peat, woody; noneffervescent; abrupt lower boundary; bog.
35-58 (1.1-1.9)	O2	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; clear to gradual lower boundary; bog.
58-105 (1.9-3.4)	O3	black (10YR2/1) peat, with little organic silt; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
105-113 (3.4-3.7)	O4	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
113-126 (3.7-4.1)	O5	black (10YR2/1) peat; indeterminate structure; noneffervescent; abrupt lower boundary; bog.
126-137 (4.1-4.5)	O6	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; clear lower boundary; bog.
137-197 (4.5-6.5)	O7	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
197-220 (6.5-7.2)	O8	black (10YR2/0) peat, woody, with one thick dark gray to gray (5Y4.5/1) clay laminae; strata, weakly expressed; noneffervescent; clear lower boundary; bog.
220-227 (7.2-7.4)	2Cg1	brown to dark brown (7.5YR4/2) very fine sandy loam, with little organic matter; strata, very weakly expressed; plastic; noneffervescent; clear lower boundary; glaciofluvial.
227-254 (7.4-8.3)	2Cg2	dark reddish gray (5YR4/2) heavy loam, with much very fine sand down to dark reddish gray to reddish brown (5YR4/2.5) very fine sandy loam; strata, very weakly expressed; firm, plastic; noneffervescent; few, fine pores with organic linings and lignified roots abrupt lower boundary; glaciofluvial.
254-280+ (8.3-9.2+)	3Cg3	dark reddish brown to reddish brown (5YR3.5/3) fine sand; massive, single grain; loose; noneffervescent; few, fine pores with organic linings and lignified roots; glaciofluvial.
Auger Sample:		
<426->561 (<14.0->18.4)	3Cg4	dark olive gray (5Y3/2) coarse sand; single grain; loose; noneffervescent; glaciofluvial.

Core/Profile: CH-7
 Location: Swanson Farm Area 2
 Legal description: E ½ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 844 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-22 (0-.7)	Op	black (10YR2/0) peat, with much organic silt; weak, coarse, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
22-48 (.7-1.6)	O1	black (10YR2/1), very dark brown (10YR2/2) peat; strata, very weakly expressed; noneffervescent; clear lower boundary; bog.
48-58 (1.6-1.9)	O2	black (10YR2/1) peat, with little organic silt; strata, very weakly expressed; noneffervescent; clear lower boundary; bog.
58-107 (1.9-3.5)	O3	black (10YR2/1), very dark brown (10YR2/2) peat; strata, very weakly expressed; noneffervescent; very abrupt lower boundary; bog.
107-139 (3.5-4.6)	O4	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
139-184 (4.6-6.0)	O5	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
184-302 (6.0-9.9)	O6	black (10YR2/1), (10YR2/0) peat, woody; strata, weakly expressed; noneffervescent; very abrupt lower boundary; <i>cf. Picea sp.</i> wood from 296-302 cm C-14 dated at 9,360±80 BP; bog.
302-310 (9.9-10.2)	2Cg1	brown to dark brown (7.5YR4/2) loamy very fine sand, loamy fine sand, one clay lamina; strata, weakly expressed; noneffervescent; very few fine pores with organic coats and lignified roots; abrupt lower boundary; glaciofluvial.
310-316+ (10.2-10.4+)	2Cg2	dark reddish brown to reddish brown (2.5YR3.5/4) loamy fine sand; indeterminate structure; noneffervescent; glaciofluvial.
Auger Samples:		
<430->565 (<14.1->18.5)	3Cg3	dark reddish brown (5YR3/2.5) granular medium and coarse sand; single grain; loose; noneffervescent; glaciofluvial.
<674->809 (<22.1->26.5)	3Cg3	dark brown (7.5YR3/2) medium and coarse sand; single grain; loose; noneffervescent; glaciofluvial.
<918->1053 (<30.1->34.5) top ½	4Cg4	reddish brown (5YR4/4) clay with clay-coated medium sand that may or may not have been interbedded; indeterminate structure; plastic; strongly effervescent; glaciolacustrine.
<918->1053 (<30.1->34.5) bottom ½		as above.
<1162->1297 (<38.1->42.6)	4Cg4	reddish brown (2.5YR4/4) clay; indeterminate structure; plastic; strongly effervescent; glaciolacustrine.
<1406->1541 (<46.1->50.6)		as above, may include some clay-coated medium sand.
<1650->1785 (<54.1->58.6)	4Cg4	reddish brown to dark reddish brown (2.5YR-5YR3.5/4) clay; indeterminate structure; plastic; strongly effervescent; glaciolacustrine.

Core/Profile: CH-8
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 842 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-31 (0-1.0)	Op	black (10YR2/0) peat, woody with much organic silt; very weak, coarse, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
31-149 (1.0-4.9)	O1	black (10YR2/1) and very dark brown (10YR2/2) thinly bedded peat and peat with little organic silt; strata, weakly expressed; noneffervescent; clear lower boundary; bog.
149-165 (4.9-5.4)	O2	black (10YR2/0) peat with much organic silt, with one very dark brown (10YR2/2) lamination of organic clay; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
165-242 (5.4-7.9)	O3	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; clear to abrupt lower boundary; bog.
242-270 (7.9-8.9)	O4	black (10YR2/0) peat, woody, with one lamina of gray (5Y5/1) clay, noneffervescent; strata, weakly expressed; noneffervescent; clear lower boundary; bog.
270-291 (8.9-9.5)	O5	very dark brown (10YR2/2) peat, possibly with a second gray (5Y5/1) clay noneffervescent lamina noneffervescent; clear lower boundary; bog.
291-308 (9.5-10.1)	O6	black (10YR2/0) peat, woody; noneffervescent; very abrupt lower boundary, with wood at contact; bog.
308-313 (10.1-10.3)	2Cg1	grayish brown to dark grayish brown (2.5Y4.5/2) and dark to very dark brown (7.5YR2.5/2) clay; thick laminae, weakly expressed; plastic; noneffervescent; abrupt lower boundary; glaciofluvial.
313-334+ (10.3-11.0+)	3Cg2	weak red (2.5YR4/2.5) very fine sandy loam down to reddish brown (2.5YR4/4) loamy fine sand with little fines; strata, weakly expressed; plastic; noneffervescent; glaciofluvial.
Auger Samples:		
<428->563 (<14.0->18.5)	4Cg3	dark olive (5Y3/3) medium and coarse sand, little fines; single grain; loose; noneffervescent; glaciofluvial.
<672->807 (<22.0->26.5)	4Cg3	dark olive (5Y3/3) pebbly and granular medium and coarse sand; single grain; loose; noneffervescent; glaciofluvial.
<916->1051 (<30.1->34.5)	5Cg4	reddish brown (5YR4/3) and dark reddish gray (5YR4/2) clay, possibly with clay-coated sand but probably stratified; indeterminate structure; plastic; noneffervescent and strongly effervescent, variable; glaciolacustrine.

Core/Profile: CH-9
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/alluvium/glaciofluvial
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 841 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-28 (0-9)	Op	black (10YR2/0), (10YR2/1) peat, with much organic silt, little wood; very weak, subangular blocky; friable; noneffervescent; very abrupt lower boundary; bog.
28-106 (9-3.5)	O1	black (10YR2/0), (10YR2/1) stratified peat with much organic silt and peat; thin beds to thick laminae, weakly expressed; noneffervescent; abrupt lower boundary; bog.
106-143 (3.5-4.7)	O2	black (10YR2/0) peat, with much organic silt; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
143-188 (4.7-6.2)	O3	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; clear lower boundary; bog.
188-226 (6.2-7.4)	O4	black (10YR2/0) peat, with much organic silt; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
226-270 (7.4-8.9)	O5	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
270-305 (8.9-10.0)	O6	black (10YR2/1), very dark brown (10YR2/2) peat; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
305-323 (10.0-10.6)	O7	black (10YR2/0) peat, woody; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
323-339 (10.6-11.1)	2Cg1	dark grayish brown (2.5Y4/2) clay with some brown to dark brown (7.5YR4/2) clay; strata, very weakly expressed; plastic; noneffervescent; abrupt lower boundary; some very fine uncarbonized organic matter fragments in lower 4 cm; alluvium.
339-357+ (11.1-11.7+)	3Cg2/2Cg1	brown to dark brown (7.5YR4/4) fine sand, reddish brown (5YR4/4) loamy very fine sand, and dark reddish gray (5YR4/2) clay; strata, moderately expressed, some single grain; plastic to some loose; noneffervescent; glaciofluvial.
Auger Samples:		
<421->556 (<13.8->18.2)	3Cg3	dark reddish brown (5YR3/3) medium and coarse sand, few granules, few fines; single grain; loose; noneffervescent; glaciofluvial.
<665->800 (<21.8->26.2)	3Cg3	dark reddish brown (5YR3/2.5) medium and coarse sand; single grain; loose; noneffervescent; glaciofluvial.

Core/Profile: CH-10
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 843 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-40 (0-1.3)	Op	black (10YR2/1) peat, woody, slightly oxidized; noneffervescent; abrupt lower boundary; bog.
40-86 (1.3-2.8)	O1	very dark brown (10YR2/2) down to black (10YR2/1) peat; noneffervescent; abrupt lower boundary; bog.
86-113 (2.8-3.7)	O2	black (10YR2/0) peat, with much organic silt; noneffervescent; abrupt lower boundary; bog.
113->136 (3.7->4.5)	O3	very dark brown (10YR2/2) peat, fibrous; noneffervescent; clear lower boundary; bog.
<206-225 (<6.8-7.4)	O4	black (10YR2/0) peat, with much organic silt; noneffervescent; clear lower boundary; bog.
225-250 (7.4-8.2)	O5	black (10YR2/1) peat; noneffervescent; abrupt lower boundary; bog.
250-276 (8.2-9.1)	O6	black (10YR2/1) and (10YR2/0) peat, with much organic silt; noneffervescent; clear lower boundary; bog.
276-323 (9.1-10.6)	O7	black (10YR2/1) peat, woody; noneffervescent; very abrupt lower boundary; bog.
323-327 (10.6-10.7)	2Cg1	brown to dark brown (7.5YR4/2) clay loam (due to sand content); strata, very weakly expressed; plastic; noneffervescent; very abrupt lower boundary; glaciofluvial.
327-344 (10.7-11.3)	3Cg2	reddish brown (5YR4/3±) fine sandy clay, fine sandy loam, fine sand and clay, and brown to dark brown (7.5YR4/2) loamy very fine sand; strata, moderately expressed, with single grain strata; plastic to loose; noneffervescent; very abrupt lower boundary; glaciofluvial.
344-357+ (11.3-11.7+)	3Cg3	reddish brown (5YR4/4) medium sand; single grain; loose; noneffervescent; glaciofluvial.
Auger Samples:		
<422->557 (<13.8->18.2)	3Cg3	dark reddish brown (5YR3/3) fine and medium sand; single grain; loose; noneffervescent; glaciofluvial.
<666->801 (<21.9->26.3)	3Cg3	dark reddish brown (5YR3/2) medium sand; single grain; loose; noneffervescent; glaciofluvial.
<910->1045 (<29.9->34.3)	3Cg3/4Cg4	reddish brown (5YR4.5/4) clay and dark reddish brown (5YR3/3) medium sand with some clay-coated; moderately effervescent; glaciolacustrine.
<1154->1289 (<37.9->42.3)	4Cg4	reddish brown (5YR4.5/4) clay; strongly effervescent; glaciolacustrine.

Core/Profile: CH-11
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 845 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
<256-333 (<8.4-10.9)	O1	very dark brown (10YR2/2) peat; noneffervescent; very abrupt lower boundary; bog.
333-346 (10.9-11.4)	O1/2Cg1	very dark brown (10YR2/2) peat and dark brown (7.5YR3.5/2) organic fine sandy loam; strata, moderately expressed, laminated; plastic; noneffervescent; abrupt lower boundary; bog.
346-353 (11.4-11.6)	O2	black (10YR2/1) peat, woody; one brown to dark brown (7.5YR4/2) clay lamina 3 mm thick; noneffervescent; abrupt lower boundary; bog.
353-355 (11.6-11.6)	2Cg11	brown to dark brown (7.5YR4/3) clay; thick laminae; plastic; noneffervescent; abrupt lower boundary; bog.
355-360 (11.6-11.8)		piece of wood, <i>Larix sp.</i> , cf. <i>L. Laricina</i> , C-14 dated at 9,340±60 BP; bog.
360-394+ (11.8-12.9+)	3Cg2	reddish brown to yellowish red (5YR4/5,4/4) very fine sand, fine sand, loamy very fine sand; strata, moderately expressed, single grain strata; loose; noneffervescent; glaciofluvial.
Auger Samples:		
<423->558 (<13.9->18.3)	3Cg2/3Cg3	reddish brown (5YR4/4±) very fine sandy loam and silt; probably stratified; very plastic; noneffervescent; glaciofluvial.
<667->802 (<21.9->26.3)	3Cg4	dark reddish brown (5YR3/2.5) fine to coarse sand; single grain; loose; noneffervescent; glaciofluvial.
<911->1046 (<29.9->34.3)	4Cg5	reddish brown (5YR5/4) clay; indeterminate structure; plastic; violently effervescent; glaciolacustrine.
<1155->1290 (<37.9->42.3)		as above; slightly to violently effervescent, variable; glaciolacustrine.
<1399->1534 (<45.9->50.3)		reddish brown to dark reddish brown (5YR5/4,4/4,4/3) clay; violently effervescent; glaciolacustrine.

Core/Profile: CH-12
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <1%
 Elevation: 847 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-33 (0-1.1)	O(p)	black (10YR2/0) peat, with much organic silt; very weak, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
33-128 (1.1-4.2)	O1	very dark brown (10YR2/2) peat, fibrous; strata, weakly expressed; noneffervescent; very abrupt lower boundary; bog.
128-190 (4.2-6.2)	O2	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
190-290 (6.2-9.5)	O3	black (10YR2/0) to very dark brown (10YR2/2) peat; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
290-332 (9.5-10.9)	O4	black (10YR2/0) peat, woody; indeterminate structure; noneffervescent; very abrupt lower boundary; bog.
332-345 (10.9-11.3)	2Cg1	dark brown (7.5YR3/3) loamy fine sand and loamy very fine sand; strata, weakly expressed; noneffervescent; abrupt lower boundary; glaciofluvial.
345-350 (11.3-11.5)	2Cg2	dark brown (7.5YR3/2) peaty loamy fine sand; strata, very weakly expressed; noneffervescent; abrupt lower boundary; glaciofluvial.
350-356 (11.5-11.7)	3Cg3	dark brown (7.5YR3/3) medium sand, with little fines; strata, very weakly expressed, single grain; noneffervescent; abrupt lower boundary; glaciofluvial.
356-372 (11.7-12.2)	4Ob	black (10YR2/1), (10YR2/0) peat, with little to much organic silt, one lamina of gray (5Y5/1) clay, few sandy strata; strata, very weakly expressed; noneffervescent; very abrupt lower boundary; glaciofluvial.
372-385+ (12.2-12.6+)	5Cg1	dark reddish brown (5YR3/3) fine and medium sand and dark brown (7.5YR3/2) clay and very fine sandy loam; strata, moderately expressed; noneffervescent; glaciofluvial.
Auger Samples:		
<425->560 (<13.9->18.4)	5Cg1	dark reddish brown (5YR3/2) fine and medium sand with some fines; single grain; loose; noneffervescent; glaciofluvial.
<669->804 (<21.9->26.4)	5Cg1/6Cg2	dark reddish brown (5YR3/2±) fine and medium sand with some fines and reddish brown (5YR4/4) clay; sand is single grain; clay has indeterminate structure; loose and plastic; noneffervescent; glaciofluvial.
<913->1048 (<30.0->34.4)	6Cg2	dark reddish brown (5YR3/3,3/4) clay; indeterminate structure, but probably stratified; plastic; moderately effervescent; glaciolacustrine.

Core/Profile: CH-13
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Grass
 Slope: <2%
 Elevation: 850 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-10 (0-.3)	Ap	black (10YR2/1) organic sandy loam; weak, fine, subangular blocky; friable; noneffervescent; very abrupt lower boundary; bog.
10-20 (.3-.7)	AC	black (10YR2/0) organic silt loam; thick laminae, weakly expressed; friable to firm; noneffervescent; abrupt lower boundary; bog.
20-52 (.7-1.7)	2Ob	black (10YR2/1) peat, with organic silt; strata, very weakly expressed; noneffervescent; many, fine and medium roots; very abrupt lower boundary; bog.
52-55 (1.7-1.8)	3Cg1	black (10YR2/1) organic fine sandy loam and very dark grayish brown (10YR3/2) loamy fine sand; strata, moderately expressed; friable; noneffervescent; few fine and medium roots; very abrupt lower boundary; glaciofluvial.
55-77 (1.8-2.5)	4Cg2	dark brown (7.5YR3.5/2) loamy fine sand, with very few fine pebbles down to brown to dark brown (7.5YR4/4) fine sand; strata, very weakly expressed, single grain; friable to loose; noneffervescent; few fine and medium roots; abrupt lower boundary; glaciofluvial.
77-181+ (2.5-5.9+)	4Cg3	yellowish red (5YR3/6,4/6) fine sand, well sorted, very few pebbles; single grain; loose, noneffervescent; glaciofluvial.
Auger Samples:		
<473->557 (<15.5->18.3)	4Cg4/5Cg5	dark reddish gray to reddish brown (5YR4/2.5) fine sandy loam with much clay; dark reddish gray to reddish brown (5YR4/2.5) clay, and reddish brown (5YR5/4) clay; indeterminate structure, probably originally stratified; plastic; noneffervescent to moderately effervescent, variable; glaciofluvial.
<666->801 (<21.9->26.3)	5Cg5	dark reddish gray to reddish brown (5YR4/2.5) clay and sandy clay with lesser amounts of reddish brown (5YR5/4) clay; indeterminate structure, probably originally stratified; plastic; moderately to strongly effervescent, variable; glaciolacustrine.
<910->1045 (<29.9->21.2)	5Cg5	as above, very little sand; glaciolacustrine.

Core/Profile: CH-14
 Location: Swanson Farm Area 2
 Legal description: SE ¼ Section 15 T35N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Cut sod
 Slope: <2%
 Elevation: 847 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-18 (0-.6)	AOp	black (10YR2/0) peat, silt loam, woody; weak, fine, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
18-33 (.6-1.1)	O1	very dark brown (10YR2/2) peat, with little organic silt; strata, weakly expressed; noneffervescent; very abrupt lower boundary; bog.
33-42 (1.1-1.4)	O2	black (10YR2/1), (10YR2/0), peat, with much organic silt; strata, very weakly expressed; noneffervescent; very abrupt lower boundary; bog.
42-81 (1.4-2.7)	O3	black (10YR2/1) peat; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
81-100 (2.7-3.3)	O4	black (10YR2/1) peat, woody, to organic silt loam, with one black to very dark brown (10YR2/1.5) clay lamina down to strata, very weak to weakly expressed; noneffervescent; very abrupt lower boundary; bog.
100-226 (3.3-7.4)	O5	black (10YR2/1), (10YR2/0) peat, woody, with little organic silt in approximately lower 30 cm; strata, weakly expressed; noneffervescent; one log on side at 128-136 cm; one gray (5Y5/1) clay laminae at 205 cm; abrupt lower boundary; bog.
226-237 (7.4-7.8)	2Cg1	dark brown (7.5YR3/3) gravel with loamy sand matrix, poorly sorted; single grain; loose; noneffervescent; few wood fragments that may not be in place; abrupt lower boundary; glaciofluvial.
237-271 (7.8-8.9)	2Cg2	very dark grayish brown to dark brown (10YR-7.5YR3/2) fine sand, little fines; single grain; loose; noneffervescent; abrupt lower boundary; glaciofluvial.
271-278 (8.9-9.1)	2Cg3	very dark grayish brown to dark brown (10YR-7.5YR3/2) fine gravel, with fine and medium sand matrix; single grain; loose; noneffervescent; abrupt lower boundary; glaciofluvial.
278-295+ (9.1-9.7+)	2Cg4	dark reddish brown to reddish brown (5YR3.5/3) fine and medium gravel, with fine and medium sandy loam matrix with much clay; single grain; loose; noneffervescent; glaciofluvial.
Auger Samples:		
<429->564 (<14.1->18.5)	3Cg5	reddish brown (5YR4/4) clay and dark brown (7.5YR3/2) silty clay with very few fine pebbles; stratified; plastic; slightly effervescent to violently to strongly effervescent, variable; glaciolacustrine.
<673->808 (<22.1->26.5)	3Cg5	reddish brown (5YR4.5/4±) clay; stratified; plastic; strongly effervescent; glaciolacustrine.

Core/Profile: CH-15
 Location: Swanson Farm Area 3
 Legal description: NW ¼ Section 7 T35N R20W
 County: Chisago
 Parent material: Bog/alluvium/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <1%
 Elevation: 826 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-11 (0-.4)	AC	black (10YR2/1) organic silt loam and very dark grayish brown (10YR3/2) fine sandy loam; strata, moderately expressed; friable; noneffervescent; many very fine and medium horizontal roots; abrupt lower boundary; bog.
11-35 (.4-1.1)	AO	black (10YR2/0) peaty silt loam; strata, very weakly expressed and granular very weakly expressed; friable; noneffervescent; many very fine and medium horizontal roots; abrupt lower boundary; bog.
35-41 (1.1-1.3)	2CBg1	black to very dark gray (10YR2.5/1) organic silty clay loam, with common sand; very weak, subangular blocky over single bed; firm; noneffervescent; many very fine and fine roots, many fewer than above; abrupt lower boundary; bog.
41-54 (1.3-1.8)	3CBg2	dark to very dark grayish brown to dark brown (10YR-2.5Y3.5/2.5) loamy fine sand; very weak, subangular blocky over single bed; very friable; noneffervescent; many, very fine and medium roots, many fewer than above; abrupt lower boundary; alluvium.
54-70 (1.8-2.3)	4CBg3	dark to very dark grayish brown (2.5Y3.5/2) clay; single bed; firm; noneffervescent; many, very fine and medium roots, more than above; abrupt lower boundary; alluvium.
70-88 (2.3-2.9)	5Cg1	dark to very dark grayish brown (2.5Y3.5/1.5) fine sand and loamy fine sand; strata, very weakly expressed, single grain; loose; noneffervescent; common, very fine and medium roots; clear lower boundary; alluvium.
88-118 (2.9-3.9)	6Cg2	dark to very dark grayish brown (2.5YR3.5/2) fine sand with basal laminae of reddish brown (5YR4/4) clay; strata, weakly expressed, single grain; loose; noneffervescent; few, very fine and medium roots; abrupt lower boundary; glaciofluvial.
118-162+ (3.9-5.3+)	6Cg3	very dark grayish brown (10YR3/2) fine and medium sand; single grain; loose; noneffervescent; glaciofluvial.
Auger Samples:		
<413->548 (<13.5->18.0)	7Cg4	reddish brown (5YR4.5/4±) clay and dark brown (7.5YR3/2) clay and silty clay; indeterminate structure, probably stratified; plastic; moderately to strongly down to violently effervescent; glaciolacustrine.
<657->792 (<21.6->26.0)	7Cg4	as above, mostly reddish brown (5YR4.5/4); strongly effervescent; glaciolacustrine.
<901->1036 (<29.6->34.0)	7Cg4	reddish brown (5YR4.5/4,4/3) clay; as above; strongly effervescent; glaciolacustrine.
<1145->1280 (<37.6->42.0)	7Cg4	as above, mostly reddish brown (5YR4.5/4).
<1389->1524 (<45.6->50.0)	7Cg4	as above.

Core/Profile: CH-16
 Location: Swanson Farm Area 3
 Legal description: NW ¼ Section 7 T35N R20W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <1%
 Elevation: 827 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-29 (0-1.0)	AO1	black (10YR2/0) to (10YR2/1) peaty silt loam; weak, granular and crumb; friable; noneffervescent; abrupt lower boundary; many, very fine to fine roots; bog.
29-47 (1.0-1.5)	A02	black (10YR2/0) peaty silt loam; weak down to very weak, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
47-80 (1.5-2.6)	O1	black (10YR2/0) peat, with much silt loam; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
80-90 (2.6-3.0)	O2	very dark brown (10YR2/2) peat, fibrous; noneffervescent; abrupt lower boundary; bog.
90-100 (3.0-3.3)	O3	black (10YR2/0) peat, with much silt loam; very weak, subangular blocky over strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
100-146 (3.3-4.8)	O4	black (10YR2/1) peat, slightly woody, with one thin, dark grayish brown (2.5Y4/2) clay lamina at base; strata, very weakly expressed; noneffervescent; very abrupt lower boundary; bog.
146-154 (3.8-5.1)	O5	black (10YR2/1) peat, with clastics, with very dark grayish brown (2.5Y3/2) basal laminae; strata, weakly expressed; noneffervescent; many very fine and medium roots; very abrupt lower boundary; bog.
154-164+ (5.1-5.4+)	2Cg1	reddish brown (5YR4/4) loamy very fine sand; strata, very weakly expressed; noneffervescent; glaciofluvial.
Auger Samples:		
<187->322 (<6.1->10.6)	2Cg1/3Cg2	reddish brown (5YR4/4) loamy very fine sand and brown to dark brown (7.5YR4/2) silty clay and reddish brown (5YR4.5/4) clay; probably stratified originally; strongly effervescent; glaciolacustrine.
<431->566 (<14.1->18.6)	3Cg2	as above, mostly brown to dark brown (7.5YR4/2) silty clay; glaciolacustrine.
Core Samples:		
566-708 (18.6-23.2)	3Cg2	dark brown to brown (7.5YR3.5/2 to 3/2) silty clay loam, silt loam, silty clay, and reddish brown (5YR4.5/4) clay, some laminae granular as though redeposited; thick to thin laminae, few thin beds, strongly expressed; plastic; violently to strongly effervescent; glaciolacustrine.

Core/Profile: CH-17
 Location: ATV Trail
 Legal description: SE ¼ Section 24 T37N R21W
 County: Chisago
 Parent material: Glaciofluvial
 Vegetation: Grasses
 Slope: <1%
 Elevation: 840 feet
 Topo. Map: Rush City
 Remarks: Slightly higher than bog; hand pushed core

Depth cm(ft)	Horizon or Zone	Description
0-15 (0-.5)	A	dark brown (7.5YR3/3) loamy fine sand; very weak crumb to single grain; very friable to loose; noneffervescent; abrupt lower boundary; glaciofluvial.
15-23 (.5-.8)	C1	brown to dark brown (7.5YR4/4) fine sand, with very few pebbles up to 4 cm; single bed, single grain; loose; noneffervescent; very abrupt lower boundary; glaciofluvial.
23-53+ (.8-1.7+)	C2	dark brown (7.5YR3/3) very fine sand, with little fines, with few thin beds of reddish brown (2.5YR4/4) very fine sand; thinly bedded, moderately expressed, single grain; loose; noneffervescent; glaciofluvial.

Core/Profile: CH-18
Location: ATV Trail
Legal description: SW SE SE 24 T37N R21W
County: Chisago
Parent material: Bog
Vegetation: Grasses
Slope: <1%
Elevation: 841 feet
Topo. Map: Rush City
Remarks: No recovery

Depth cm(ft)	Horizon or Zone	Description
0-120 (0-3.9)	O	organic muck; no recovery

Core/Profile: CH-19
 Location: Rehbein Farm Area 1
 Legal description: NE ¼ Section 34 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <1%
 Elevation: 836 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-18 (0-.6)	Ap	black (10YR2/0) organic silt loam, with much medium and coarse sand; weak, coarse, subangular blocky breaking to weak, fine, subangular blocky; firm; noneffervescent; abrupt lower boundary; bog.
18-32 (.6-1.0)	AO	black (10YR2/0) peaty silt loam; very weak, coarse, subangular blocky over strata, very weakly expressed; firm; noneffervescent; very weakly developed bog iron in upper 5 cm; abrupt lower boundary; bog.
32-60 (1.0-2.0)	O1	black (10YR2/1) peat, woody; strata, weakly expressed; noneffervescent; one log on side 51-60 cm; abrupt lower boundary; bog.
60-85 (2.0-2.8)	O2	black (10YR2/0) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
85->103 (2.8->3.4)	O3	black (10YR2/1) peat; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
<127-286 (<4.2-9.4)	O4	black (10YR2/0, 2/1) peat, with much organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
286-294 (9.4-9.6)	2Cg1	reddish brown to dark reddish brown (5YR3.5/4) sandy clay loam; strata, very weakly expressed; firm; noneffervescent; abrupt lower boundary; glaciofluvial.
294-302 (9.6-9.9)	2Cg2	reddish brown to dark reddish brown (5YR3.5/4) pebbly sandy loam; strata, very weakly expressed; firm; noneffervescent; abrupt lower boundary; glaciofluvial.
302-319+ (9.9-10.5+)	3Cg3	reddish brown to dark reddish brown (5YR3.5/4) granular coarse sand, with some clay; strata, very weakly expressed, single grain; loose±; noneffervescent; glaciofluvial.
Auger Samples:		
<366->501 (<12.0->16.4)	3Cg4	dark reddish brown (5YR3/3±) medium sand, with common, fine pebbles; single grain; loose; noneffervescent; glaciofluvial.
<610->745 (<20.0->24.4)	3Cg4/4Cg5	reddish brown (5YR4/3) clay and sandy clay loam and few laminae of reddish brown (5YR4.5/4) clay; indeterminate structure, probably originally stratified; plastic; moderately effervescent; glaciolacustrine.
<914->1049 (<30.0->34.4)	4Cg5	dark brown to brown (7.5YR3.5/2) silty clay loam, silt loam, and silty clay, and reddish brown (5YR4.5/4) clay; indeterminate structure; probably originally stratified; plastic; violently effervescent; glaciolacustrine.

Core/Profile: CH-20
 Location: Rehbein Farm Area 1
 Legal description: SE ¼ Section 27 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Potato field
 Slope: <1%
 Elevation: 843 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-26 (0-.9)	AOp	black (10YR2/0) peaty silt loam; weak, coarse, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
26-37 (.9-1.2)	O1	very dark brown (10YR2/2) peat; strata, very weakly expressed; noneffervescent; clear lower boundary; bog.
37-48 (1.2-1.6)	O2	black (10YR2/1) peat, with much organic silt; strata, very weakly expressed; friable; noneffervescent; clear lower boundary; bog.
48-57 (1.6-1.9)	2Bg	very dark to dark gray down to dark to very dark grayish brown (2.5Y3/1) to (2.5Y3.5/1) heavy loam, with few, fine pebbles; very weak, subangular blocky over single bed; firm; noneffervescent; abrupt lower boundary; bog.
57-118+ (1.9-3.9+)	3Cg1	dark brown (7.5YR3/3) fine sandy loam down to dark brown (7.5YR3/2.5) heavy loam down to brown to dark brown (7.5YR4/3) medium and coarse sand with common, fine gravel; strata, weakly expressed, thin beds, sand is single grain; friable to loose; noneffervescent; glaciofluvial.
Auger Sample:		
<182->317 (<6.0->10.4)	3Cg2	dark reddish brown to reddish brown (5YR3.5/3) loamy medium and coarse sand, much clay; single grain±; loose; noneffervescent; glaciofluvial.

Core/Profile: CH-21
 Location: Rehbein Farm Area 1
 Legal description: SE ¼ Section 27 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Potato field
 Slope: <1%
 Elevation: 840 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-23 (0-.8)	OAp	black (10YR2/0) silty peat, with wood; very weak, coarse, breaking to fine subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
23-33 (.8-1.1)	O1	black (10YR2/1) peat, woody; strata, very weakly expressed; noneffervescent; clear lower boundary; bog.
33-99 (1.1-3.2)	O2	very dark brown (10YR2/2) peat, fibrous; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
99-178 (3.2-5.8)	O3	black (10YR2/0) peat, with much to little organic silt; strata, very weakly expressed; noneffervescent; gradual lower boundary; bog.
178-225 (5.8-7.4)	O4	black (10YR2/0) peat; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
225-≈294 (7.4-≈9.6)	O5	black (10YR2/0) peat, woody; noneffervescent; bog.
≈294-308+ (≈9.6-10.1)	2Cg	sand; single grain; loose; no recovery; glaciofluvial.
Auger Samples:		
<429->564 (<14.1->18.5)	2Cg	dark reddish brown (5YR3/3) medium and coarse sand; single grain; loose; slightly effervescent; glaciofluvial.

Core/Profile: CH-22
 Location: Rehbein Farm Area 1
 Legal description: SE ¼ Section 27 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial
 Vegetation: Carrot field
 Slope: <1%
 Elevation: 837 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-23 (0-.8)	OAp	black (10YR2/0) silty peat; very weak, coarse, breaking to fine, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
23-58 (.8-1.9)	O1	black (10YR2/1) peat, woody; strata, weakly expressed; noneffervescent; abrupt lower boundary; bog.
58-168 (1.9-5.5)	O2	black (10YR2/1) peat, with much organic silt; friable; noneffervescent; gradual lower boundary; bog.
168-276 (5.5-9.1)	O3	black (10YR2/1) peat, with little organic silt down to very dark brown (10YR2/2) peat; noneffervescent; abrupt lower boundary; bog.
276-309+ (9.1-10.1+)	O4	black (10YR2/0) peat, with little organic silt; noneffervescent; bog.
≈385-393+ (≈12.6-12.9+)	2Cg	sand with pebbles; single grain; loose; glaciofluvial.
Auger Sample:		
<424->559 (<13.9->18.3)	2Cg	dark brown (7.5YR3/2.5) coarse sand, well sorted, few, fine pebbles; single grain; loose; very slightly effervescent; glaciofluvial.

Core/Profile: CH-23
 Location: Rehbein Farm Area 2
 Legal description: SE ¼ Section 35 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <1%
 Elevation: 833 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-23 (0-.8)	Op	black (10YR2/0) peat; noneffervescent; abrupt lower boundary; bog.
23-140 (.8-4.6)	O1	black (10YR2/1) to (10YR2/0) peat, woody; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
140-387 (4.6-12.7)	O2	very dark brown to black (10YR2/2,2/1) peat, with few thin beds with little organic silts; one gray (5Y5/1) organic clay lamina at 214 cm; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
387-396 (12.7-13.0)	2Cg1	dark brown (7.5YR3.5/2±) medium and coarse sand, with clay; strata, very weakly expressed; noneffervescent; abrupt lower boundary; glaciofluvial.
396-401+ (13.0-13.2+)	2Cg2	dark brown (7.5YR3/3) medium and coarse sand, little fines; strata, very weakly expressed, single grain; loose; noneffervescent; glaciofluvial.
Auger Samples:		
<431->566 (<14.1->18.6)	2Cg3	dark brown (7.5YR3/2) coarse sand, little fines; single grain; loose; noneffervescent; glaciofluvial.
<665->800 (<18.6->26.2)	3Cg4	reddish brown (5YR4/4,4.5/4) clay and dark brown (7.5YR3/2±) silty clay, silt loam, silt partings; strata, strongly expressed; plastic; strongly to violently effervescent; glaciolacustrine.

Core/Profile: CH-24
 Location: Rehbein Farm Area 2
 Legal description: SE ¼ Section 35 T36N R21W
 County: Chisago
 Parent material: Bog/glaciofluvial/glaciolacustrine
 Vegetation: Sod
 Slope: <1%
 Elevation: 834 feet
 Topo. Map: North Branch
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-23 (0-.8)	Op	black (10YR2/0) peat, with much organic silt; very weak, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
23->89 (.8->2.9)	O1	black (10YR2/1,2/0) peat, with few thin beds with little organic silt; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
<127-137 (<4.2-4.5)	O2	black (10YR2/0) peat, with much organic silt; very weak, fine, subangular blocky; friable; noneffervescent; abrupt lower boundary; bog.
137-167 (4.5-5.5)	O3	black (10YR2/1) peat, with little organic silt; strata, very weakly expressed; noneffervescent; clear to gradual lower boundary; bog.
167-246 (5.5-8.1)	O4	very dark brown (10YR2/2) peat, fibrous; strata, very weakly expressed; noneffervescent; gradual lower boundary; bog.
246-265 (8.1-8.7)	O5	black (10YR2/1) peat; strata, very weakly expressed; noneffervescent; abrupt lower boundary; bog.
265-277 (8.7-9.1)	O6	black (10YR2/0) peat, woody; strata, very weakly expressed; noneffervescent; thin lamination of dark gray to gray (5Y4.5/1) organic clay at 275 cm; <i>Picea sp.</i> wood from base C-14 dated at 10,120±100 BP; abrupt lower boundary; bog.
277-290 (9.1-9.5)	2Cg1	dark to very dark grayish brown (10YR3.5/2) fine sand, little fines; strata, very weakly expressed, single grain; loose; noneffervescent; very abrupt lower boundary; glaciofluvial.
290-311 (9.5-10.2)	3Cg2	dark reddish gray to dark reddish brown (7.5YR3.5/2±) fine sandy loam, heavy loam, and thin laminae black (2.5Y2.5/0) of silty clay(?) at top (290 cm); strata, moderately expressed, thin to thick laminae; friable to plastic; noneffervescent; very abrupt lower boundary; glaciofluvial.
274-277+ (10.2-9.1+)	3Cg3	brown to dark brown (7.5YR4/3) very fine sand, little fines, and black (2.5Y2.5/0) thin laminae of silty clay(?) at top (311 cm); strata, weakly expressed, single grain; loose; noneffervescent; glaciofluvial.
Auger Sample:		
<424->559 (<13.9->18.3)	4Cg4	dark brown to brown (7.5YR3.5/2 to 3/2) silty clay loam, silt loam, and silty clay, and reddish brown (5YR4.5/4) clay; indetermiante structure, probably originally stratified; plastic; violently effervescent; glaciolacustrine.

Core/Profile: PN-1
 Location: Chengwatana State Forest
 Legal description: NW ¼ Section 4 T37N R20W
 County: Pine
 Parent material: Wetland/alluvium/wetland alluvium/glaciofluvial
 Vegetation: Wetland grasses
 Slope: <1%
 Elevation: 799 feet
 Topo. Map: Randall
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-5 (0-.2)	OA	very dark gray (2.5Y3/1) silty peat organic matter is slightly oxidized; strata expressed very weakly; friable; noneffervescent; clear lower boundary; wetland.
5-22 (.2-.7)	2Bg1	very dark greenish gray (5GY3/1) heavy silt loam; many, fine, dark brown (10YR3/3) mottles; very weak, subangular blocky; friable to soft; noneffervescent; many, very fine and medium roots; clear lower boundary; alluvium.
22-48 (.7-1.6)	2Bg2	very dark greenish gray (5GY3/1) heavy silt loam; many, fine and medium, dark brown (10YR3/3) mottles; very weak, subangular blocky; friable to soft; noneffervescent; many very fine and medium roots, but fewer than above; clear lower boundary; alluvium.
48-72 (1.6-2.4)	3Cg1	very dark greenish gray to black (5GY2.5/1) organic silt loam, very dark gray (5Y3/1) very fine sandy loam and dark brown (10YR3/3) loamy fine sand and medium sand; thinly bedded to thickly laminated, moderately expressed sand is single grain; friable to plastic to loose; noneffervescent; organic silt loam with common pieces of fine unconsolidated organic matter; abrupt lower boundary; alluvium.
72-82 (2.4-2.7)	4Cg2	very dark grayish brown (10YR3/2) medium sand, with little fines; few, coarse, dark yellowish brown (10YR3/4) mottles; single bed, single grain; loose; noneffervescent; very abrupt lower boundary; alluvium.
82-93 (2.7-3.1)	5OAb	black (2.5Y2/0) silty peat; strata, very weakly expressed; noneffervescent; clear lower boundary; seeds of <i>Cyperaceae</i> (<i>Cyperus sp./Carex sp.</i>), <i>Rhus sp.</i> from 88-91 cm C-14 dated at 3,910±50 BP; wetland.
93-116+ (3.1-3.8+)	6Cg1	very dark greenish gray to black (5GY2.5/1) silty clay loam to black (5GY2/0) organic silty clay loam; very few, medium, olive brown to dark grayish brown (2.5Y4/3) mottles; strata very weakly expressed; plastic; noneffervescent; alluvium.
Auger Sample:		
<195->227 (<6.4->7.4)	7Cg2	dark reddish brown (5YR3/3) light loam; indeterminate structure; firm; moderately effervescent; glaciofluvial.

Core/Profile: PN-2
 Location: Chengwatana State Forest
 Legal description: NW ¼ Section 4 T37N R20W
 County: Pine
 Parent material: Wetland/alluvium/wetland alluvium/ glaciofluvial
 Vegetation: Wetland grasses
 Slope: <1%
 Elevation: 799 feet
 Topo. Map: Randall
 Remarks:

Depth cm(ft)	Horizon or Zone	Description
0-9 (0-.3)	OA	very dark gray (2.5Y3/1) silty peat; mottles are common, fine, very dark brown (10YR2/2); strata expressed very weakly; friable; noneffervescent; clear lower boundary; wetland.
9-27 (.3-.9)	2Bg	very dark greenish gray (5GY3/1) heavy silt loam; mottles are many, fine, very dark grayish brown (10YR3/2); very weak, subangular blocky; friable, plastic; noneffervescent; clear lower boundary; alluvium.
27-38 (.9-1.2)	3BCg	very dark greenish gray (5GY3/1) loamy fine sand, with few strata of dark brown (10YR3/3) loamy fine sand; very weak subangular blocky over stratified expressed weakly; friable, plastic; noneffervescent; abrupt lower boundary; alluvium.
38-70 (1.2-2.3)	3Cg	very dark gray (10YR3/1) silty clay loam and dark brown (10YR3/3) medium and coarse sand; common, fine to medium, very dark grayish brown (10YR3/2) mottles; strata moderately expressed, thin bedded to thick laminated, sand is single grain; plastic and loose; noneffervescent; very abrupt lower boundary; alluvium.
70-89 (2.3-2.9)	4OAb	black (2.5Y2.5/1) silty clay loam and black (2.5Y2/0) silty peat; strata weakly expressed; noneffervescent; abrupt lower boundary; wetland.
89-155+ (2.9-5.1+)	5Cg1	very dark greenish gray to black (5GY2.5/1) and black (5Y2.5/1) silty clay loam, with very few clay loam beds; thin bedded to thick laminated, moderately expressed; plastic; noneffervescent; few fine pores; alluvium.
Auger Sample:		
<195->237 (<6.4->7.8)	6Cg2	dark reddish brown (5YR3/3) loam; indeterminate structure; firm; violently effervescent; glaciofluvial.