

Table 5
SOIL DESCRIPTIONS FOR
REPRESENTATIVE VEGETATION COMMUNITIES
 (Colors are for wet soils (field conditions) unless otherwise stated)

Plot No. SW-2

MICROSITE:	Well developed water track, lower-midslope portion of track; soil pit is in the center of the track.
SUBSTRATE:	Organic-rich alluvium over clay-rich till
VEGETATION:	Wet <i>Salix planifolia</i> ssp. <i>pulchra</i> , <i>Eriophorum angustifolium</i> , <i>Drepanocladus uncinatus</i> low-shrub, sedge tundra.
CLASSIFICATION:	Histic Pergelic Cryaquept
NOTES:	Permafrost at 46 cm. Buried soil at 19 cm probably due to fluvial deposition from water track.
IOe	0–10 cm. Reddish black (2.5Y 2/1.5) coarse hemic peat with silty clay mineral component, est. 75% by volume; abrupt smooth boundary.
IA	10–19 cm. Yellowish grey (2.5Y 4/1) organic loam; weak subangular blocky, breaking to weak fine granular; many fine and very fine roots; abrupt smooth boundary.
IIOeb	19–32 cm. Black (10YR 2/2) silty clay hemic peat composed of sedge leaves and roots; moderate medium platy structure due to compressed plant material; abrupt smooth boundary.
IIBAb	32–46+ cm. Yellowish grey (2.5Y 4/1) gravelly clay loam with few prominent medium irregularly shaped brown (10YR 4/6) mottles; no detectable structure due to wetness; 30-40% coarse grave to 5 cm diameter; no roots.

Plot No. SW-6

MICROSITE:	Interfluvium between water tracks, weakly developed solifluction features about middle of backslope.
SUBSTRATE:	Clay-rich Sagavanirktok-age till
VEGETATION:	Moist <i>Carex bigelowii</i> , <i>Betula nana</i> , <i>Salix planifolia</i> spp. <i>pulchra</i> , <i>Ledum palustre</i> ssp. <i>decumbens</i> , <i>Hylocomium splendens</i> ,

Sphagnum spp. sedge, dwarf-shrub tundra

CLASSIFICATION: Histic Pergelic Cryaquept

NOTES: Permafrost at 30 cm. Oxidized mineral layer at base of peat.

- Oi 0–8 cm. Bright yellow brown (10YR 6/6) loose fibric peat composed of live moss (*Sphagnum* and *Hylocomium*), moss bases and other plant roots; clear smooth boundary.
- Oe 8–13 cm. Black (7.5YR 1.7/1) hemic peat; moderate medium platy structure; 10–15% mineral, mostly clay; many fine and very fine roots; abrupt smooth boundary.
- A 13–15 cm. Brown (7.5YR 4/3) organic sandy clay loam; weak medium platy structure breaking to weak fine granular; noticeable increase in clay toward base of organics; slightly sticky, slightly plastic (wet); many fine and very fine roots common medium; roots abrupt smooth boundary.
- Bw 15–30+ cm. Greyish yellow brown (10YR 4/2) clay loam with prominent medium to large irregularly shaped brown (10YR 4/6) mottles concentrated along root channels, plant material and areas of somewhat sandier soil; bright brown (7.5YR 5/6) oxidized band 1–2 cm thick at top of horizon beneath overlying peat; moderate medium angular blocky structure; 5–10% fine gravel, less than 1 cm diameter; sticky, plastic (wet); many fine and very fine roots.

Plot No. SW-8

MICROSITE: Interfluvium between water tracks, about midslope

SUBSTRATE: Clay-rich Sagavanirktok-age till

VEGETATION: Moist *Carex bigelowii*, *Betula nana*, *Ledum palustre* ssp. *decumbens*, *Sphagnum* spp. sedge, dwarf-shrub tundra

CLASSIFICATION: Pergelic Cryaquept

NOTES: Permafrost at 40 cm

- Oe 0–9 cm. Black (5YR 1.7/1) coarse hemic peat; many fine and very fine roots, common medium roots; abrupt smooth boundary.

Bw 9–40+ cm. Dull brown (7.5 5/4) gravelly sandy clay loam; moderate medium subangular blocky structure, breaking to moderate fine granular; est. 20% gravel <2.5 cm diameter; plastic, sticky (wet); many fine and very fine roots.

Plot No. SW–11

MICROSITE: Well developed water track, middle of track, midway downslope

SUBSTRATE: Organic-rich slope wash over clay-rich till

VEGETATION: Wet *Salix planifolia* spp. *pulchra*, *Eriophorum angustifolium*, *Carex bigelowii*, *Sphagnum* spp. low-shrub tundra (soil pit is in area of *Eriophorum angustifolium*)

CLASSIFICATION: Pergelic Cryaquept

NOTES: Permafrost at 55 cm

Oe 0–5 cm. Very dark reddish brown (5YR 2/2.5) coarse hemic peat; abrupt smooth boundary,

Oa 5–10 cm. Very dark brown (7.5YR 2/3) silty clay sapric organic; weak medium platy structure due to compressed vegetation mat (mostly sedge leaves); nonsticky, non plastic (wet); many fine and very fine roots, common medium roots; abrupt smooth boundary.

Bw 10–50+ cm. Dull yellowish brown (10YR 4/3) clay with prominent large and medium irregularly-shaped yellowish brown (10YR 5/5) mottles; moderate angular blocky structure; very sticky, very plastic (wet); <2% fine gravel; many fine and very fine roots.

Plot No. SW–16

MICROSITE: Stream channel

SUBSTRATE: Organic rich alluvium from colluvial basin

VEGETATION: Aquatic *Carex aquatilis*, *Eriophorum angustifolium* sedge tundra

CLASSIFICATION: Pergelic Cryofibrist

NOTES: Permafrost at 72 cm. Soil has deep mat of organic material with large amount of included sandy alluvium.

Oi1 0–10 cm. Very dark reddish brown (5YR 2/4) loose sandy loamy fibric peat composed of roots and sedge leaves; many fine and very fine live roots; gradual smooth boundary.

Oi2 10–20 cm. Very dark brown (7YR 2/3) compressed sandy loamy fibric peat composed of roots and sedge leaves; many fine and very fine roots; gradual smooth boundary.

Oi3 20–40+ cm. Brownish black (10YR 2/3) compacted sandy loam peat.

Plot No. SW-19

MICROSITE: *Sphagnum*-rich sedge meadow on margin of colluvial basin

SUBSTRATE: Organic-rich basin deposit

VEGETATION: Wet *Eriophorum scheuchzeri*, *Salix fuscescens*, *Sphagnum lenense* sedge, dwarf-shrub, moss tundra

CLASSIFICATION: Histic Pergelic Cryaquept

NOTES: Permafrost at 28 cm

Oi 0–4 cm. Yellowish brown (10YR 5/6) loose *Sphagnum* mat; abrupt smooth boundary.

Oe 4–20 cm. Brownish black (5YR 2/2) compressed hemic peat composed of sedge leaves and *Sphagnum*; small amount of clay; many fine and very fine roots; clear smooth boundary.

Oa 20–25 cm. Brownish black (7.5YR 3/2) sapric peat; moderate medium platy structure due to compressed plant material, est. <5% mineral by volume, very sticky, very plastic (wet); many fine and very fine roots; abrupt smooth boundary.

Bw 25–28 cm. Brown (10YR 4/4) clay; massive, very sticky, very plastic; few roots.

Plot No. SW-22A

MICROSITE: Bog in colluvial basin, inter-hummock site

SUBSTRATE: Organic-rich basin deposit

VEGETATION: *Wet Carex rariflora*, *C. rotundata*, *Eriophorum scheuchzeri*,
Sphagnum lindbergii sedge tundra

CLASSIFICATION: Pergelic Cryohemist

NOTES: Permafrost at 48 cm. Discontinuity (and water table) at 37 cm,
possibly overlies a buried peat

IOi1 0–3 cm. Brownish black (5YR 2/2) loose organic mat composed
of *Sphagnum* and sedge roots; est. 5% by volume; very dark
reddish brown (5YR 3/2) clay component; only slightly sticky
and slightly plastic due to large amount of organic; clear smooth
boundary.

Ioi2 3–18 cm. Dark brown (7.5YR 3/3) compressed hemic peat with
silty clay loam mineral component (est. 5% by volume);
nonsticky, nonplastic; many fine and very fine roots; clear
smooth boundary.

IOe1 18–33 cm. Very dark brown (7.5YR 2.5/3) fibric peat with many
yellowish sedge roots, clear smooth boundary.

IOe2 33–73 cm. Very dark brown (7.5YR 2/3) more compressed fibric
peat; est. 10% by volume silty clay loam; slightly sticky, slightly
plastic; many fine and very fine roots; abrupt smooth boundary.

IIOab(?) 37–48+ cm. Very dark brown (7.5 2/3) sapric peat; est. 20% by
volume loam; extremely wet; moderate medium subangular
blocky breaking to weak medium granular structure; few fine
roots

Plot No. SW-24

MICROSITE: Palsa in colluvial basin

SUBSTRATE: Organic-rich basin deposit

VEGETATION: Moist *Betula nana*, *Rubus chamaemorus*, *Ledum palustre* spp.
decumbens, *Dicranum elongatum*, *Sphagnum* spp., *Cladonia* spp.
dwarf-shrub, fruticose-lichen tundra

CLASSIFICATION: Hemic Pergelic Sphagnofibrist; Classification based on
assumption that there is no mineral horizon within 10 cm below
permafrost table

- NOTES: Permafrost at 39 cm. Water table at 38.
- Oi 0–15 cm. Bright reddish brown to yellow orange (5YR 5/8 to 10YR 8/4) very porous loose fibric peat composed of *Sphagnum* bases; clear smooth boundary.
- Oe 15–32 cm. Brownish black (5YR 2/2) compressed hemic *Sphagnum* peat; est. less than 2% loamy mineral material; moderate medium platy structure; many fine and very fine roots; abrupt smooth boundary.
- Oa 32–39+ cm. Very dark brown (7.5 2/3) sapric *Sphagnum* peat; est. 10% silt loam mineral material by volume; moderate medium granular structure; slightly sticky, slightly plastic (wet); many fine and very fine roots binding the soil, common fine roots below water table at 38 cm.

Plot No. SW–32

- MICROSITE: Nonsorted stone stripe on east side of west ridge near the crest of the slope. Stripes are 3–5 m wide with frost scars spaced 1.5–2.5 apart.
- SUBSTRATE: Clay–rich glacial till
- VEGETATION: Dry *Cassiope tetragona*, *Vaccinium uliginosum*, *Carex bigelowii*, *Tortula ruralis*, *Dicranum elongatum*, *Cetraria nivalis*, *Cladonia* spp. dwarf–shrub, fruticose–lichen tundra
- CLASSIFICATION: Ruptic Pergelic Cryaquept

Inter–frost–scar element

- NOTES: Permafrost at 95 cm. Horizons contorted due to cryoturbation. Colors are for moist soil.
- O 0–2 cm. Loose mosses, lichens and dead plant material.
- A 2–6 cm. Dark brown (7.5YR 3/3) organic clay loam, weak thin platy structure breaking to moderate fine granular; est. 5% gravel fragments (<1 cm diameter); slightly sticky, slightly plastic (wet); many fine and very fine roots; clear wavy boundary.
- Bw1 6–27 cm. Brown (10YR 4/4) clay loam with common medium brown (10YR 4/6) mottles; moderate medium subangular blocky structure breaking to moderate fine granular; est. 20% gravel to 2

cm diameter; sticky, plastic (wet), common very fine roots; irregular boundary.

Bw2 27–50 cm. Dull yellowish brown (10YR 4/3) clay loam with common brownish black (10YR 3/1) organic inclusions and few prominent medium brown (10YR 4/6) mottles; moderate medium subangular blocky structure breaking to moderate fine granular; est. 20% gravel to 1.5 cm diameter.

Frost-scar element

NOTES: Permafrost at >100cm. Very contorted profile.

Bw1 0–5 cm. Brown (10YR 4/5) clay loam; moderate medium subangular blocky structure breaking to moderate fine granular; est. 15% fine gravel to 1 cm diameter; sticky, plastic (wet); common very fine roots; abrupt broken boundary.

Bw2 5–50+ cm. Dull yellowish brown (10YR 4/3) gravelly clay loam with large prominent yellowish brown (10YR 5/6) mottles; moderate medium angular blocky structure; est. 35% fine gravel to 2 cm diameter; sticky, plastic (wet).

Plot No. SW-33

MICROSITE: Sandstone outcrop with 2–5% cover of rounded glacial erratics, stable ground surface, no evidence of cryoturbation.

SUBSTRATE: Sandstone rubble

VEGETATION: *Dry Dryas octopetala*, *Salix phlebophylla*, *Selaginella sibirica*, *Antennaria friesiana*, *Cetraria cucullata* dwarf-shrub, fruticose-lichen tundra

CLASSIFICATION: Pergelic Cryumbrept

NOTES: Colors are for moist soil

Oi 0–1 cm. Loose organic mat composed of lichens and moss.

A 1–3 cm. Brownish black (5YR 2/1) gravelly sandy loam sapric organic; moderate fine granular structure; est. 20% fine gravel by volume; friable (moist); slightly sticky, slightly plastic (wet); many very fine roots; common fine roots; abrupt smooth boundary.

Bw 3–40+ cm. Dark brown (10YR 3/4) gravelly sandy loam; moderate fine granular structure; est. 60% gravel by volume with numerous angular cobbles to 15 cm diameter; friable (moist); slightly sticky, slightly plastic (wet); silt caps on cobbles to 2 mm thick and some bridging of silt between cobbles; common very fine roots, few fine roots.