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 *Salix planifolia* ssp. *pulchra*, *Eriophorum angustifolium*, *Drepanocladus uncinatus* 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 gravel to 5 cm diameter; no roots.

Plot No. SW-6

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

Table 5. Soil Descriptions for Representative Vegetation Communities

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 (7.5YR 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 overlie a buried peat

Table 5. Soil Descriptions for Representative Vegetation Communities

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 YR 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 m 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.

Table 5. Soil Descriptions for Representative Vegetation Communities

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
A	0-3 cm. Brownish black (10YR 2/3) gravelly organic loam; moderate fine granular structure; est. 20% fine gravel fragments with occasional cobbles; friable (moist); slightly sticky, slightly plastic (wet); many fine and very fine roots; clear smooth boundary.
Bw1	3-15 cm. Dark brown (10YR 4/4) gravelly loam; weak medium subangular blocky structure breaking to moderate fine granular; est. 20% gravel fragments to 3 cm diameter with occasional angular cobbles to 10 cm diameter; friable (moist); slightly sticky, slightly plastic (wet); many fine and very fine roots; clear smooth boundary.
Bw2	15-35 cm. Brown (10YR 4/5) cobbly loam; weak subangular blocky structure breaking to moderate fine granular; est. 75% gravel and angular cobbles up to 12 cm diameter; friable (moist); slightly sticky, slightly plastic (wet); silt caps on tops of cobbles to 1 mm thick; continuous iron (2.5YR 3/4) manganese (5YR 2/1) coats on bottoms of cobbles; common fine roots.
Plot No. SW-42	
MICROSITE:	South facing, exposed sandstone outcrops with frost scars with few depressions up to 15 cm deep.
SUBSTRATE:	Sandstone rubble
VEGETATION:	Dry *Dryas octopetala*, *Salix phlebophylla*, *Conicularia divergens*, *Alectoria ochroleuca* 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.