DESCRIPTION OF MAP UNITS FOR UNCONSOLIDATED MATERIALS Note: Some map units and symbols shown in the legend may not appear on this map Symbols are printed in red on the face of the map and may form geological boundaries SURFICIAL DEPOSIT LANDFORM DOMINANT VEGETATION (NOTES 2 arnd 3) (NOTE 4) UNIFIED SOIL Rock outcrop..... NAME CLASSIFICATION (NOTE 5) COMMENTS ZONE (deciles) ESTIMATED DRAINAGE (NOTE 2) Geological boundary (defined or approximate, assumed or transitional)..... MATERIAL TOPOGRAPHY AFTER FIRE THICKNESS PREDOMINANT SOIL* STABLE 6S 6N 5 4 3 2 Typic Mesisol (P-VP) Crevasse fillings, moraine ridges..... Flat to very gently sloping, some with reticulate net-Sedge-Bi or Sedge-Bi-tL in Organic (fen) Dominantly 2-3 m No organized drainage; Unfrozen to at least 3 m Pt Same, probably Poor drainage, plus moderately water at surface throughou | would not burn | high compressibili decomposed fen work of low (<1 m) ridges summer months all zones and low strength of Drumlinoid ridges, striae, flutings (direction of ice movement known, unknown).... peat derived from sedge, tamarack, (patterned fen) the material make it unsuitable for any type of construction Esker (direction of flow known, unknown)... 10 bS-Fm-Er in zones Frozen at 0.3-0.5 m. Mesic Organic Cryosol (W-I) Alternation of permanent Organic Dominantly Flat to gently sloping areas Depressions intercon-Sphagnum, Er Beach ridge (depositional, erosional)... nected by seepage moderately Fibric Organic Cryosol (W-I) 6S and 6N; bSfrozen peat mounds and commonly 60-80% in peat; typically 10-100 cm decomposed forest (average relief 1 m, rarely channels lichen-Er in zones thawed depressions and and/or undecomposed to 6 m); numerous steepwater bodies presents sphagnum peat derived from black spruce, sided depressions and thick. Segregated ice in Er in zones 2 and 3 serious problems in Landslide scar..... trenches mineral soil below. Peat construction of roads, cladonia, feather Typic Fibrisol (P) pipelines, etc.; materia Sphagnum, Er in wet depressions commonly Sphagnum or mosses, éricaceous and/or sphagnum thawed to at least 1 m. Typic Mesisol (P) highly compressible when sphagnum-bS i Ice-wedge polygons zones 4, 5, 6S, thawed vegetation present in zone 3 and 6N Area of potential slumping.... Frozen at 0.3-0.5 m. Mesic Organic Cryosol (W-I) 1.5-7 m Flat to gently sloping areas Depressions interconbS-Fm-Er in zones Organic Er, Fm, bS Alternation of perman-Dominantly with mounds (average relief nected by seepage Segregated ice content 6S and 6N; bSently frozen peat Fibric Organic Cryosol (W-I) moderately Patterned ground.... lichen-Er in zones 2 and 3 thermokars decomposed forest 1 m, rarely to 6 m); numerous channels; drainage commonly 60-80% in mounds, some actively peat; typically 10-100 exposed peat scarps, continually being and/or undecomposed degrading, and thawed cm thick. Segregated ice in mineral soil below. depressions, and trenches depressions and water sphagnum peat derived from black spruce bodies presents serious Peat in wet depressions, Typic Fibrisol (P) cladonia, feather Sphagnum or problems in construc-NOTE 1 Typic Mesisol (P) tion of roads, pipelines mosses, ericaceous sphagnum-bS thawed to at least 1 m and/or sphagnum zones 4, 5, 6S, etc.; material highly MAP UNIT DESIGNATION and 6N compressible when vegetation A combination of letters is used to designate each map unit or component of a compound map unit, e.g. gAf. The upper case letter indicates the broad genetic class; the lower case letter (s) that follows indicates morphology; the lower case letter (s) in g,s,siAp Alluvial Gravel, sand, and 1-8 m Floodplain and low bordering In braided areas inter-Ground ice in gravel, Cumulic Regosol (W) Wi, Al, bPo Subject to periodic silt; textures vary terraces; floodplains within mittent drainage through sand, and silt of low Eq, wS-bPo in flooding; floodplains front of the genetic classification describes texture. A number superscript is used to with the dominant mountains commonly scarred terraces in zone 2; zones 4, 5 and within the mountains are indicate class of slope, e.g. tMp' is used for ground moraine with slope 20-50 by braided channels; floodplains | scar areas no integrated Not observed elsewhere. Gleyed Cumulic Regosol (I) material indicated potential sources of within plains region commonly drainage system, impeded Permafrost and segregated aggregate; extraction Textural Modifier (placed in front of genetic category) Genetic Classification Morphologic Modifier (placed after genetic category) by meander scroll ridges ice also present in areas with meander scars of aggregate may cause Rego Gleysol (P) Wi, Wi-Al, bPo-Al Wi, Al, bPo where bog is more than deleterious changes in in zones 4, 5, and 1.5 m thick stream course and r - rock and rubble p - plain d - drumliinoid downstream changes in Gleysolic Turbic Cryosol (P) stream regimen A - alluvial b - beach c - channelled t - till Terraces with relief inter-Eluviated Eutric Brunisol (W) ,s,siAt Alluvial Gravel, sand, and | 1-30 m wS-wB, wS-bPo, Good construction sites C - colluvial r - ridged h - hummocky g - gravel mediate between terraces associated with Ap and Gp terrace silt; textures vary out integrated drainage gravel, sand, and silt of Orthic Eutric Brunisol (W) tA-wB, bPo, tA in with the dominant terraces, up to 30 m zones 4, 5, 6N, and where material is E - eolian m - rolling k - thermokarst material indicated first or Gt; level to slightly thick, in zone 2. Not 6S; wS-wB, bS-bPo, Brunisolic Turbic Cryosol (W) coarse sloping surfaces; some observed elsewhere tA-bS in zone 2 si - silt L - lacustrine t - terraced e - eroded interrupted by shallow channels and low terraces Gleyed Eutric Brunisol (I) G - glaciofluvial bPo-wS, wS-bPo, wB, Wi, tA, c - clay x - complex f - fan Wi, tA-wS in zones 4, 5, 6N, M - morainal s - striated v - veneer p - bog Brunisolic Turbic Cryosol (I) and 6S; bS-bPo, (i.e., flutings) S - slump f - fen wS-bPo in zone 2 thick) Rego Gleysol (P) bS-Fm, bS-Fm-Er, Number Superscript bS-sphagnum in 1 - gentle slope $(2^{\circ}-5^{\circ})$; 2 - steep slope $(5^{\circ}-15^{\circ})$ zones 4, 5, 6N. Gleysolic Turbic Cryosol (P) - slope is up to 200 in Cx units Er in zone 2 Complex Units Gently to moderately sloping One or more shifting streams commonly present; Alluvial Mostly gravel, 3-25 m None observed Cumulic Regosol (W) - 6 6 - 6 Mainly wB, tA, Wi, Wi, Al, wB Generally offer well a dash (-) means "with 16-49%" of the following unit (e.g., tMp-p0, p0 constitutes 16-49% of some sand drained building sites, the area)
- a slash (/) signifies that the following unit comprises 5-15% of the total area within the bound-- - 2 2 - 2 3, 4, 5, 6N, and 6S but sudden channel Gleyed Cumulic Regosol (I) poorly defined runs shifting may cause aries of that complex unit damage; good source Rego Gleysol (P) a plus (+) indicates the presence of an unknown percentage of a second unit; less than 5% of a of aggregate second unit is ignored Gleysolic Turbic Cryosol (P) fractionated units indicate a veneer of one unit over a thicker zone of another unit: (e.g., s.silpv a flat-surfaced veneer of sandy, silty lacustrine material over till) Gently to steeply sloping irregular surfaces; Cx1 <50, Cx2 50-200 Colluvial Colluvium derived | 1-6 m Silty clayey colluvium Orthic Regosol (W) contains disseminated ice crystals to seams complex from entire range Orthic Eutric Brunisol (W) elevations and and slope instability brackets () separate groups of units (e.g., (p0-f0)-tMp means p0 containing 16-49% f0, and 16-49% of the total area is tMp of surficial stunted Alpine fi present major problems 1 m thick in zones 2 for any type of construc Gleyed Regosol (I) and 6N at high elevation texture prefix included i Gleyed Eutric Brunisol (W) Colluvium over Variable map unit if known N.B. - one textural modifier signifies the dominant material bedrock (see note 6 at low elevations and Er, lichen at - commas used between textural modifiers for distinct lithologies: e.g., g,s,siAp - floodplain consisting predominantly of gravel and sand with minor silt shown as a fractionated symbol, e.g., cryoturbated sur-faces are unvege-Si. Sh; dominant tated in zones 2 NOTE 2 lithology indicated first INDEX MAP OF CLIMATICALLY SIGNIFICANT ECOLOGICAL ZONES (Compiled by C. Tarnocai) Rego Gleysol (P) Sphagnum, Er Sphagnum, bS-Gleysolic Turbic Cryosol (P) sEr, dune ridges, usually Mainly subsurface None observed, probably SP-SW Eluviated Eutric Brunisol (W) P. tA-wB in Subject to wind erosion fine to mdeium parallel to subparallel; sEh, no ice present when vegetation mat is zones 5 and 6S grained irregularly shaped dunes, no apparent pattern Gleyed Eluviated Eutric Brunisol (I tA-bS-Wi in zones 5 and 6S bS-Fm. bS-Rego Gleysol (P) zones 5 and 6S Gleysolic Turbic Cryosol (P) Commonly 10-50% segregated | CL-ML si,sLp | Glaciolacustrine | Mainly silt and | si,sLp 1.5-50 m | Flat to gently sloping Surface seepage through organic-filled depressions Brunisolic Grey Luvisol (W) wS, wS-tA in Failure common along fine sand; locally si,sLpv 0.5-1.5 m zones 5 and 6S; | scarps; generally wS-tA, bS-wB-tA in zone 6N includes gravel (g and downslope seepage seams parallel with bedding, unsuitable for location Orthic Grey Luvisol (W) in shallow subparalle segregated ice in a reti of structures because dominant material of poor bearing capacity by volume, and thick tabular bodies in zones 2 indicated first and drainage character-Gleyed Grey Luvisol (I) bS-wB-tA, bS-Wi-Al in zones zones of segregated ice as seams, reticulated net 5, 6S, and 6N NORTHWEST Luvisolic Turbic Cryosol (I) works, and tabular bodies (up to 3 m thick) in bS-Fm-Er, bS-Rego Gleysol (P) northern part of zone tL-wB in zones 6S; no ice recorded in 5, 6S, and 6N southern part of zone 69 Gleysolic Turbic Cryosol (P) except below p0 si,sLh Hummocky Mainly silt and Low hummocks up to 2 m; None observed wS, wS-tA in Failure common along Brunisolic Grey Luvisol (W) glaciolacustrine fine sand deposits individual hummocks up to 5 m relief; slopes to 200 zones 5 and 6S: unsuitable for location wS-tA. bS-wB-Orthic Grey Luvisol (W) of structures because tA in zone 6N TERRITORY of poor bearing capacit and drainage character Gleyed Grey Luvisol (I) Wi, Al, wB 5, 6S, and 6N Luvisolic Turbic Cryosol (I) Rego Gleysol (P) bS-Fm-Er,bS-tL-6S, and 6N Gleysolic Turbic Cryosol (P) Zone boundary ... Zone number g,sLpbx Glaciolacustrine Mainly gravel g,sLpbx 1.5-2 m g,sLpbx and g,sLpbxv, parallel Drainage mainly subsurface None observed Eluviated Eutric Brunisol (W) P. P-wB-tA P, tA, wB Good construction sites ,sLpbxv beaches with minor sand; g,sLpbxv 0.5-1.5 m | to subparallel beach ridges and aggregate source Orthic Eutric Brunisol (W) locally include , sLpbv g,sLpbv 0.5-1.5 m | arranged in belts; up to 60 where material is slopes; g,sLpbv, beach materia Gleyed Eutric Brunisol (I) P-wB-Wi, bS-P, tA, Wi, wB coarse; beaches at 800 NOTE 3 material indicated wB-Wi, tA-bS-Wi belts up to 6+ km wide elevations offer the (by C. Tarnocai) best potential Rego Gleysol (P) bS-Fm-Er N.B. - all Gleysols have a peaty surface layer and *Drainage characteristics of soils g,s,siGp | Glaciofluvial Gravel, sand and g,s,siGp Flat to gently sloping Frozen groundwater in Eluviated Eutric Brunisol (W Good construction sites are associated with a small amount of organic silt; textures vary | 1-30+ m gravel, sand, and silt in Orthic Eutric Brunisol (W) zones 6S and 6N and aggregate source W = wellwith the dominant | g,s,siGpv zone 2. Not observed where material is coarse - soils developed on bedrock areas have the material indicated | 0.5-1.5 m elsewhere. Where Gleyed Eutric Brunisol (I) bS-wB-Wi,P-wB-P, tA, Wi, wB I = imperfect g,s,siGt Glaciofluvial overlying bog is more than 1.5 m thick permag,s,siGt 1-30+ m mineral surface terrace zones 6S and 6N P = poor frost may be present Rego Gleysol (P) bS-Fm-Er in zones | Wi VP = very poor 6S and 6N Gleysolic Turbic Cryosol (P) Example of Soil Classification Mainly gravel 1-10 m Hummocks with local relief Drainage mainly subsurface | No segregated ice in Eluviated Eutric Brunisol (W) tA-bS-wB, P, P, tA, wB Good construction sites up to 10 m well drained sites, but Orthic Eutric Brunisol (W) and aggregate segregated ice may be In climatic zone 6S, 50% of soil cover is either Rego Gleysol or Cryic Rego Gleysol, Ridged present in association Gleyed Eutric Brunisol (I) bS-tA-wB 20% Gleyed Grey Luvisol, and 30% Brunisolic Grey Luvisol tA, wB glaciofluvia up to 30 m high with silt layers beneath In climatic zones 4, 3, and 2, there are either no exposures of si,sLh, or not depressions in zones 2, enough mappable exposures to warrant generalisations about the soil type includes 3, and 6N Gleysolic Turbic Cryosol (P) eskers and esker complexe NOTE 4 Flat to uniformly sloping; tMp¹, Downslope seepage in tMv¹: slope 20- 50 tMp², tMv²: subparallel runs Moraine Moderately to tMp 1.5-50 m Locally 5-40% segre-Brunisolic Grey Luvisol (W) wS-tA-wB, tAtA, P, wB Failure common along VEGETATION gated ice as thin (1 mm-P-wB in zones 4 scarps; poor source of (by C. Tarnocai) tMpc 1.5-50 m slope 50 - 150; map symbol may glacial till. Downslope seepage in 2 cm) horizontal layers aggregate; up to 10% Orthic Grey Luvisol (W) be suffixed by one or more r. or in a reticulated net-work in zones 2, 3, and typically clay shallow channels wS-wB, bS-wB in unmapped pO and/or fO Vegetation: species abbreviation m, s, d, or h (see below) because of drainage by numerous subparallel zones 2 and 3 Brunisolic Turbic Cryosol (W) sand with 5% indicating the mapped area in 6N; presence controlled bS - black spruce (Picea mariana) part consists of one or more by exposure, elevation, drainage, and/or organic pebbles and boulders; preof these landform units normal to slope directio wS - white spruce (Picea glauca) Cottongrass - Eriophorum Sp. fixes g, s, si, or c, indicate Gleyed Grey Luvisol (I) wS-tA-wB, wStA, wB, Wi, to avoid impoundment of wB - white birch (Betula neoalaskana, Lichen - Cladonia Sp., Cetraria Sp. tA-Wi in zones 4, 5, 6S, and 6N; lenses of gravel, surface water; slopes sand, silt, or Gleyed Brunisolic Grey Luvisol (susceptible to soil Bi - dwarf birch (Betula glandulosa) Sphagnum - Sphagnum Sp. creep and channelling in zones 2 and 3 Brunisolic Turbic Cryosol (I) tL - tamarack (Larix laricina) Er - Ericaceae (Ledum, Chamaedaphne, Kalmia, etc..) thin (tMv), the Downslope seepage in subparallel runs Wi - willow (Salix Sp.) Fm - feathermosses underlying bedrock is shown Al - alder (Alnus Sp.) P - pine (Pinus banksiana and Pinus contorta var. latifolia) symbol (Note 6 gives bedrock tA - trembling aspen (Populus tremuloides) Rego Gleysol (P) bS-Fm-Er in zone Wi, Al Fireweed - Epilobium Angustifolium bPo - balsam poplar (Populus balsamifera) 5 4 5 5 4 Er in zones 4, 5 Gleysolic Turbic Cryosol (P) dominant lith-Eq - horsetails (Equisefum Sp.) and 6N; bS-licher ology indicated Er in zones 2 and 3 NOTE 5 Moderately to Area consisting largely of Trellis pattern or Segregated ice may be Brunisolic Grey Luvisol (W) P-tA, tA-P-wB, Poor source of aggre-Flutings and parallel drumlins and/or deranged drainage in strongly calcareous present in some drum-WS-tA-wB in gate except where UNIFIED SOIL CLASSIFICATION flutings zones 4, 5, and Orthic Grey Luvisol (W) gravel is present; some Flutings fixes g, s indicate seepage or streams in zones 2, 3, and 6N, drumlins and most flutlenses of gravel or although none has been wB-Wi in zones ings are bedrock cored Brunisolic Turbic Cryosol (W) Classification criteria for sand within the til crests of drumlins and Typical Names divisions coarse grained soils depressions in the same zones likely contain segregated depressions poorly $C_u = D_{60}/D_{10} > 4$ Gleyed Grey Luvisol (I) wS-tA-wB, wSmixtures, little or no fines $C_r = 1 < D^2 30/D_{10} \times D_{60} < 3$ Gleyed Brunic Grey Luvisol (I) and/or organic cover wB in zones 2 and 3 Brunisolic Turbic Cryosol (I) Poorly graded gravels, gravel-sand Not meeting all gradation mixtures, little or no fines Rego Gleysol (P) bS-Fm-Fr in zone | Wi Al GM | Silty gravels, gravel-sand-silt Er in zones 4 and below A line Glevsolic Turbic Cryosol (P) mixtures Above A line with or $1_p < 4$ $4 < 11_{\rm p} < 7$ are zones 2 and 3 requiring use of Atterberg limits Crevasse fillings or Individual, parallel to sub- Integrated, weakly None observed, probably t,g,sMr 1-10 m Moderately to Brunisolic Grey Luvisol (W) P-tA, tA-P-wB, Crests of prominent Clayey gravels, gravel-sanddual symbols above A line parallel, straight to sinuous | developed drainage strongly cal no ice present WS-tA-wB in ridges offer restricted silt mixtures with $l_p > 7$ ridges within a moraine plain; 0.5-5 m relief; slopes 50-300 zones 4, 5, and Orthic Grey Luvisol (W) but good construction till, gravel, and sand; textures moraine zones 2 and 3 Brunisolic Turbic Cryosol (W) $C_u = D_{60}/D_{10} > 6$ vary with the Well graded sands, gravelly dominant mate- $C_r = 1 < D^2 30/D_{10} \times D_{60} < 3$ sands, little or no fines rial indicated Rego Gleysol (P) bS-Fm-Er in zone | Wi, Al Poorly graded sands, gravelly Not meeting all gradation 4 | Er in zones 4 and Gleysolic Turbic Cryosol (P) sands, little or no fines requirements for SW zones 2 and 3 Atterberg limits t,g,sMh Hummocky Silty sands, sand-silt 1-20 m Moderately to Individual to coalescent Deranged Crests of prominent Brunisolic Grey Luvisol (W) P-tA, tA-P-wB, tA, P, wB Crests of prominent Limits plotting i below A line hummocks well drained hummocks; slopes to 200 moraine hatched zone strongly cal wS-tA-wB in hummocks offer or 1p < 4and ice free; lower Orthic Grey Luvisol (W) restricted but good till, gravel, and slopes and depression 6S; wS-wB, bSare borderline commonly have 5-40% sand; textures wB in zones 2 cases requirin Brunisolic Turbic Cryosol (W) Atterberg limits vary with the use of dual Clayey sands, sand-clay above A line dominant mate-rial indicated thin (1 mm-2 cm) with $1_p > 7$ horizontal layers or in a recticulated Rego Gleysol (P) bS-Fm-Er in network in zones 2. Inorganic silts and very fine zone 6S; bS-Fm-3, and 6N; presence sands, rock flour, silty or lichen-Er in zones 4 and 5; bS-lichencontrolled by exposure, Gleysolic Turbic Cryosol (P) clayey fine sands, or clayey elevation, drainage, silts with slight plasticity Er in zones 2 and 3 and/or organic cover Inorganic clays of low to medium Brunisolic Grey Luvisol (W) Subdued Moderately to 5-30 m Subdued hummocks and rolling | Deranged Well drained sites ice P-tA, tA-P-wB. Summits of broad humtA, P, wB plasticity, gravelly clays, sandy terrain; slopes 50-300 free; lower slopes and mocks typically well clays, silty clays, lean clays and rolling careous glacial depressions commonly zones 4, 5, and drained and offer Orthic Grey Luvisol (W) 6S; wS-wB, bSmoraine restricted but good ice as thin (1 mm-2 cm) wB in zones 2 construction sites Brunisolic Turbic Cryosol (W) horizontal layers or in Organic silts and organic silty clays of low plasticity in zones 2, 3, and 6N; presence controlled by exposure, elevation, Rego Gleysol (P) bS-Fm-Er in Inorganic silts, micaceous or drainage, and/or organic zone 6S; bS-Fmdiatomaceous fine sandy or silty lichen-Er in zones 4 and 5; bS-lichen-Gleysolic Turbic Cryosol (P) soils, elastic silts Er in zones 2 and 3 Inorganic clays of high plasticity, Material derived Variable Debris avalanches commonly Fine grained material Cumulic Regosol (W) - 4 - 4 4 bS-wB-Wi-fireweed Firewood, Wi Debris Shale bedrock commonly ,g,s,S, may contain segregated ice in zones 2, 3, 6N, mainly from glacio occur as thin narrow tongues fails as debris avalanches lacustrine silts earthflows and mudflows as in mountainous regions; Gleyed Cumulic Regosol (I) zones 2, 3, and 5 and northern part of bulbous masses; and slump mudflow, large-scale failures are 6S; presence controlled by exposure, elevation, Material derived deposits as blocks common along major river Rego Gleysol (P) & slump Organic clays of medium to high drainage, and/or organic glacial deposits and in shale bedrock plasticity, organic silts deposits shale bedrock Gleysolic Turbic Cryosol (P) Wi. bS-Wi in zones 2, 3, and 5 NOTE 6 BEDROCK AND MOUNTAIN TERRAIN MAP SYMBOL DESIGNATION DESCRIPTION OF MAP UNITS FOR BEDROCK AND MOUNTAIN TERRAIN TOPOGRAPHIC SYMBOL BEDROCK MORPHOLOGIC MODIFIER M Mountain: local relief greater than 450 m TOPOGRAPHY PRINCIPAL BEDROCK UNITS** SURFICIAL DEPOSITS MICRORELIEF SOILS AND VEGETATION *** MAP SYMBOL NAME ENGINEERING COMMENTS D Dolomite 1 < 50 d dissected ① Plateau surface 2 5-150 Limestone L Low Hill: local relief 30-150 m Sandstone Mountains developed Mountains up to includes Headless, Landry, and Bare rock with discontinuous | GP-GC | Well developed stone Steep slopes: no soil development; Steep slopes and high relief Siltstone Nahanni formations in Mackenzie 1500 m with sharp patches of limestone and polygons, stripes, and present serious difficulties to n carbonate rocks lichen on bare surfaces. Base of Mu Mudstone Mountains and Flett Formation, nets on flat to sloping | slopes: Orthic Eutric Brunisol or ridge crests and ground. Numerous small Brunisolic Turbic Cryosol; above solifluction lobes in timberline Brunisolic Turbic dolomite with minor steep slopes. Ram in Silent Hills and Liard colluvium with a matrix of pipeline, and related construction; fines and sand and/or reworked Plateau area forms limestone and dolomite are highly Cg Conglomerate includes Arnica, Manetoe, resistant and could be used for Texture - see NOTE 5 plants above timberline; white spruce, trembling aspen below dissected by deep and Sombre formations in slopes; variable thicknesses Franklin Mountains construction material; coarse Mackenzie Mountains of bedrock rubble and colluvium deposits of rubble make suitable canyons EXAMPLE and/or reworked till at base includes Whittaker and construction sites and sources of of slopes; discontinuous veneer of till on plateau areas Eutric Brunisol, Brunisolic Turbic Cryosol, or Orthic (Texture - surficial) GC-GP (Bedrock) This describes a dissected area of mountainous relief where Mackenzie Mountains D, L the dolomite and limestone bedrock is covered by a discontinuous residual or colluvial veneer of clayey gravels, includes Delorme Formation in Mackenzie Mountains and plants, some white spruce gravel-sand-silt mixtures, and poorly graded gravels, with slopes generally 150-350, in places >350, but locally 50-150 Camsell Formation in Camsell 3,4,2 (Slope angle in includes Funeral Formation order of abundance) in Mackenzie Mountains includes Mount Clark Formation Bare rock with discontinuous GP-GC Stone polygons, stripes, Steep slopes: no soil development; Mountains up to Mountains developed Steep slopes and high relief in Franklin Range and an unnamed | patches of sandstone, and present serious difficulties to on sandstone with shale, siltstone, summits, long Proterozoic sandstone in Moose limestone rubble, bedrock flat to sloping ground | slopes: Orthic Eutric Brunisol, engineering activities such as Prairie area colluvium with a matrix of Brunisolic or Regosolic Turbic or limestone combinations | moderately steep road, pipeline, and related con-Mattson Formation fines and sand and/or rewor includes Trout River and Redknife till on crests and steep Cryosol, Orthic Regosol; above slopes, and extensive struction; sandstone and limestone debris mantles timberline Brunisolic Turbic are stable and resistant and could formations on Mackenzie Plain | slopes; variable thicknesses be used for construction materials of bedrock rubble and colluvium plants above timberline, white shale is unstable and is subject to and/or reworked till at base spruce, trembling aspen below of slopes rotational slumping commonly occur when organic cover and/or vegetation are removed or altered; fine grained High hills Rounded summits and | S,Sh Mattson Formation Discontinuous patches of GC-GP Stone polygons on flat Orthic Eutric Brunisol, Brunisolic Shale is highly unstable and is S,Si,Sh includes Trout River and Redknife | clayey, silty, sandy developed on sandstone | moderately steep surfaces. Terracettes or Regosolic Turbic Cryosol; subject to mass wasting; detachment and shale with minor slopes off the lower formations on Mackenzie Plain colluvium, sandstone and and poorly developed trembling aspen, white birch, slides and rotational slumping comlimestone rubble, reworked areas of the main stripes on slopes white spruce limestone member monly occur when organic cover and/or mountain ranges till, and/or bare rock on slopes and summit areas; grained colluvium contains ice; sandstone and limestone rubble could be bedrock rubble and colluvium source of aggregate and/or reworked till at base Sh, Si, S Fort Simpson Formation h,Si,S High hills developed Discontinuous patches of CL-ML Stone polygons on flat Brunisolic or Regosolic Turbic Shale is highly unstable and is subject includes Horn River and Klassen clayey, silty, sandy surfaces. Terracettes to mass wasting; detachment slides and and siltstone members moderate slopes, colluvium, sandstone, and poorly developed birch, white spruce rotational slumping commonly occur Fort St. John Formation and forming much of the Sh,S and limestone rubble, stripes on slopes when organic cover and/or vegetation lower areas between Cretaceous shale and siltstone reworked till and/or bare are removed or altered; fine grained of the Interior Plains Franklin Mountains rock on slopes of summit colluvium probably contains ice; sandand Front Ranges of Sh,S,Cg Buckinghorse Formation areas; variable thicknesses sitone and limestone rubble could be Mackenzie Mountains Sh,L,Si Upper Devonian shale, limestone, of bedrock rubble and source of aggregate to the west and siltstone of the Interior colluvium, and/or reworked till at base of slopes Low hills developed Moderate to gentle S,Si,Sh includes Trout River Formation Veneer of clayey, silty, Orthic Eutric Brunisol, Brunisolic | Shale is highly unstable and is or Regosolic Cryosol, Orthic Regosol; trembling aspen, white on sandstone and slopes and rounded sandy colluvium; some siubject to mass wasting; detachment with till and/or rubble shale with a small summits containing silides and rotational slumping little or no glacial commonly occur when organic cover drift indicate bedrock control of aind/or vegetation are removed or alltered; fine grained colluvium may contain ice in northern areas or at topography in formerly glaciated higher elevation areas * Lithologic information from G.S.C. Papers 58-11, 59-11, 60-19, 61-13, and Bulletin 63 ** Even though principal bedrock formations are listed, other bedrock units with the *** In poorly drained areas Cryic Rego Glleysols with ericaceous plants and black same lithologies may occur within these areas. Also describes complex units too small spruce are present below timberline, and ericaceous plants and lichen are present

LEGEND

LEGEND AND NOTES TO ACCOMPANY SURFICIAL GEOLOGY AND GEOMORPHOLOGY MAPS, SOUTHERN MACKENZIE VALLEY, NORTHWEST TERRITORIES

above timberline

to be mapped separately