				Surficia	al Data Model version 2.4.0 Open File 8236 Appendix 4 - GEOMORPHOLO									
Group Feature Class **~Control **~Feature Type **~Subset **~Status **~Status **~Sense or Erosional **~Location **~True Group	nd **Date of Occurrence **Direction or azimuth Relation **Geological **~Symbol Symbol Representation	Legend Symbol Short Description Notes	Group Feature Class **~Control **~Feature Type **~Subset	**~Sense or **~Depositional or **~]	-Location **~True Ground **Date of Occurrence	ection or Relation **Geological **~Symbol	Legend Symbol Representation Symbol Short Description	Notes	Feature Class **~Control **~Feature	'yne **_Subset	**~Sense or **~Depositional or **~Location	n **~True Ground Arbaic of Occurrence **Direction or Relation **Geological **~Symbol	Symbol Representation Legend Symbo	
Anthropogenic features GEM_POLYS 4541002 Pit (all) 454 *Pit 117 Granular aggregate 245 Gravel 291 Active 292 Inactive 291 Active	Occurrence Example azimuth Between Features Event Example Symbol Representation Year of significant change Not applicable Not applicable 3.03.01.009 *Pit (all) Image: Comparison of the presentation	Representation Pit / large, active; inactive	Glacial and ice- contact features GEM_POLYS 1631002 Recently deglaciated area (all) 163 *Recently deglaciated area 164 Lichen-free 166 Oxidation zone	293 *Not applicable	Not applicable	Between Features Event Example Symbol Not applicable e.g. 1910 moraine 3.06.01.014 *Recently deglaciated (all)	Representation	This symbol is a white pattern over colour of geological Mass-wasting Induction Internet Inte	GEM_LINES 1791002 Avalanche track (all) 179 *Avalanche track	ck 260 *Not applicable	Orientation Environment Confidence 291 Active 299 *Known 310 *Not applicable 287 *Defined 292 Inactive 299 *Known 310 *Not applicable 287 *Defined	e Length Example azimuth Between Features Event Example Summer of the summer	Representation	Avalanche track / large Line digitized using right-side rule.
551 Sand 297 *Unspecified 281 Till 283 *Unspecified			Glacial and ice- GEM_POLYS 4431002 Kettle (all) 443 *Kettle 260 *Not applicable	293 *Not applicable	Not applicable	Not applicable Not applicable 3.06.01.013 *Kettle (all)	Kettle / large	Polygon outline digitized with right-side rule. Centroid Mass-wasting	GEM_POINTS 1811002 Avalanche track (all) 181 *Avalanche track	ck 260 *Not applicable	297 *Unspecified 291 Active 299 *Known 310 *Not applicable 292 Jactive 299 *Known	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) e.g. 1992 3.09.01.001 *Avalanche track (all)		Avalanche track / small, Avalanche track / small,
Anthropogenic GEM_POINTS 4261057 Pit (status inactive or 426 *Pit 117 Granular aggregate 292 Inactive 300 *Not applicable 310 *Not applicable	Year of significant Not applicable Not applicable Not applicable 3.03.01.003 *Pit (status inactive or	Pit / small, inactive Feature too small to draw to scale.Point of observation is	contact features Glacial and ice- GEM_POINTS 4181002 Kettle (all) 418 *Kettle 260 *Not applicable				K K K K K K K K K K K K K K K K K K K	marker 3.06.01.002 must be added with CartoRep. Ornamentations point into depression.			292 Inactive302 Unknown297 *Unspecified304 Unspecified	change earthquake	Ť	direction unknown and known and rotation (0 = North) are based at midpoint of symbol. The arrow points downhill. For unknown direction the symbol is pointing up.
features unspecified) 245 Gravel 257 *Unspecified 551 Sand 281 Till	change unspecified)	based at midpoint of symbol.	Glacial and ice- contact features GEM_POINTS 4181002 Kettle (all) 418 *Kettle 260 *Not applicable Glacial and ice- GEM_POINTS 4161002 Ice-contact delta (all) 416 *Ice-contact delta 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 293 *Not applicable 299 *Known 306 Glaciolacustrine		plicable Not applicable Not applicable 3.06.01.001 *Kettle (all) 9 degrees Not applicable e.g. X Glaciation 3.07.01.001 *Ice-contact delta (all)	Image: Second	Feature too small to draw to scale.Point of observation is based at midpoint of symbol. This symbol is not orientated. The symbol is not mass-wasting features	GEM_LINES 1801002 Debris-flow track (all) 180 *Debris-flow t	ack 260 *Not applicable	291 Active 299 *Known 310 *Not applicable 287 *Defined 292 Inactive	315 *Accurate Year of significant change 1 to 5 (1=oldest) e.g. 1992 3.09.01.009 *Debris-flow track (all)	Я ¹	Debris-flow track / large Line digitized using right-side rule.
Anthropogenic gEM_POINTS 4261056 Pit (status active) 426 *Pit 426 *Pit 426 *Pit 426 *Gravel 551 Sand 426 *Pit 551 Sand	Year of significant Not applicable Not applicable Not applicable 3.03.01.002 *Pit (status active)	Pit / small, active Feature too small to draw to scale.Point of observation is based at midpoint of symbol.	contact features	302 Unknown307 Glaciomarine304 Unspecified314 *Unspecified				and rotation (0 = North) are based at midpoint of symbol. Triangle opens in direction of progradation. For unknown direction the symbol is pointing up.	GEM_POINTS 1821002 Debris-flow track (all) 182 *Debris-flow t	ack 260 *Not applicable	297 *Unspecified 310 *Not applicable	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) e.g. 1992 3.09.01.002 *Debris-flow track (all)		Debris-flow track / small, Feature too small to draw to scale.Point of observation
Anthropogenic GEM_POLYS 4451002 Mine tailing (all) 445 *Mine tailing 260 *Not applicable 291 Active	Year of significant Not applicable Not applicable 3.03.01.007 *Mine tailing (all)	Mine tailing	Glacial and ice- contact features GEM_LINES 4991092 Other moraine ridge (minor) 499 *Other moraine ridge 239 De Geer (minor) 681 Minor moraine ridge	293 *Not applicable 300 *Not applicable 310 *Not applicable 285 App 287 *De	proximate 315 *Accurate Not applicable efined 211 Approximate	Not applicable e.g. X Glaciation 3.06.01.012 *Other moraine ridge (minor)	1///	Multiple lines must be digitized individually. The legend symbol 3.15.01.015 is a set of crevasse-fill ridges.			292 Inactive 302 Unknown 297 *Unspecified 304 Unspecified			direction unknown and known and rotation (0 = North) are based at midpoint of symbol. The arrow points downhill. For unknown direction the symbol is pointing up.
features 292 Inactive 297 *Unspecified Anthropogenic GEM_POLYS 4441002 Made ground (fill) (all) 444 *Made ground (fill) 260 *Not applicable 291 Active	cnange Not applicable Not applicable 3.03.01.006 *Made ground (fill) (all)	Made ground (fill)	176 Other transverse 683 Push moraine 267 Recessional					Mass-wasting features	GEM_LINES 5071002 Tension fracture (all) 507 *Tension fract	re 260 *Not applicable	291 Active 300 *Not applicable 310 *Not applicable 287 *Defined 292 Inactive	315 *Accurate Year of significant change Not applicable Not applicable 3.09.01.010 *Tension fracture (all)		Tension fracture
features features 292 Inactive 297 *Unspecified 297 *Unspecified Anthropogenic GEM_POLYS 456 1002 Quarry (all) 456 *Quarry 269 *Rock 291 Active 291 Active		Quarry / large, active; inactive Centroid marker 3.03.01.004 (active) or 3.03.01.005	Glacial and ice- GEM_POINTS 6021074 Minor moraine 602 *Minor moraine 260 *Not applicable	293 *Not applicable 302 Unknown 310 *Not applicable	Not applicable 0 to 359 o	9 degrees Not applicable e.g. X Glaciation 3.06.01.017 *Minor moraine	Moraine ridge / small, mino	or, Feature too small to draw to scale.Point of observation is features	GEM_POINTS 4251002 Piping depression (all) 425 *Piping depres	ion 260 *Not applicable	297 *Unspecified 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable Stapplicable Stapp	•	Piping depression Feature too small to draw to scale.Point of observation is based at midpoint of symbol. This symbol is not
features 237 *Unspecified 297 *Unspecified	Year of significant change Not applicable Not applicable 3.03.01.010 *Quarry (all)	(inactive) must be added with CartoRep.	contact features (orientation unknown or unspecified) Glacial and ice- contact features GEM_POINTS; 602*Minor moraine 602*Minor moraine 602*Minor moraine 260*Not applicable	304 *Unspecified 293 *Not applicable 299 *Known 310 *Not applicable	Not applicable 0 to 359 o	9 degrees Not applicable e.g. X Glaciation 3.06.01.015 *Minor moraine (orientation known)	Moraine ridge / small; field	based at midpoint of symbol. This symbol is not orientated. Feature too small to draw to scale and/or field ation observation.Point of observation and rotation (0 = North)	GEM_LINES 4901057 Landslide escarpment (status inactive or unspecified) 490 *Landslide esc	rpment 260 *Not applicable	292 Inactive 299 *Known 310 *Not applicable 287 *Defined 297 *Unspecified 297 *Compared 287 *Defined 287 *Defined	315 *Accurate Year of significant change 1 to 5 (1=oldest) e.g. 1992 earthquake 3.09.01.007 *Landslide escarpment (status inactive or unspecified)	Em / Em	Landslide escarpment / large, inactive Line digitized using right-side rule. The legend symbol 3.15.01.005 shows a curved line. Downslope to the right.
						3.06.01.015 Minor moraine measurement location (orientation known)	known	are based at midpoint of symbol. Mass-wasting	GEM_LINES 4901056 Landslide escarpment 490 *Landslide esc (status active)	rpment 260 *Not applicable	291 *Active 299 *Known 310 *Not applicable 287 *Defined	315 *Accurate Year of significant change 1 to 5 (1=oldest) e.g. 1992 earthquake 3.09.01.006 *Landslide escarpment (status active)		Landslide escarpment / large, active Line digitized using right-side rule. The legend symbol 3.15.01.004 shows a curved line. Downslope to the right.
Anthropogenic features GEM_POINTS 4281057 Quarry (status inactive or unspecified) 428 * Quarry 269 * Rock 292 Inactive 297 * Unspecified 300 * Not applicable 310 * Not applicable 400 * Rock Anthropogenic GEM_POINTS 4281056 Quarry (status active) 428 * Quarry 269 * Rock 291 * Active 300 * Not applicable 310 * Not applicable 100 * Not ap	Year of significant Not applicable change Not applicable Not applicable 3.03.01.005 *Quarry (status inactive or unspecified) Year of significant Not applicable Not applicable Not applicable 3.03.01.004 *Quarry (status active)	based at midpoint of symbol.	Glacial and ice- contact features GEM_LINES 4981040 Major moraine ridge (lateral or laterofrontal) 498 *Major moraine ridge 533 Laterofrontal 253 *Lateral 533 Laterofrontal	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.06.01.006 * Major moraine ridge (lateral or laterofrontal)	Moraine ridge / large, majo lateral or laterofrontal	or Line digitized using right-side rule. Ornamentations on glacier side. Mass-wasting features	GEM_POINTS 1831002 Landslide scar (all) 183 *Landslide sca		291 Active 299 *Known 310 *Not applicable 292 Inactive 302 Unknown	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) e.g. 1992 earthquake 3.09.01.003 *Landslide scar (all)	\$	Landslide scar / small, direction Feature too small to draw to scale.Point of observation unknown; direction known and rotation (0 = North) are based at midpoint of symbol.
features Features <td< td=""><td>change Not applicable Not applicable 3.03.01.008 *Peat-bog mining (all)</td><td>based at midpoint of symbol. Peat-bog mining</td><td>Glacial and ice- GEM_LINES 4981047 Major moraine ridge 498 *Major moraine ridge 256 *Medial (medial)</td><td>293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *De</td><td></td><td>Not applicable e.g. X Glaciation 3.06.01.008 *Major moraine ridge (medial)</td><td>Moraine ridge / large, majo medial</td><td></td><td></td><td></td><td>297 *Unspecified 304 Unspecified 201 Active 200 *Keever 210 *Net configuration</td><td></td><td>প্র</td><td>The arrow points downhill. For unknown direction the symbol is pointing up. Retrogressive thaw flow / small. Feature too small to draw to scale.Point of observation</td></td<>	change Not applicable Not applicable 3.03.01.008 *Peat-bog mining (all)	based at midpoint of symbol. Peat-bog mining	Glacial and ice- GEM_LINES 4981047 Major moraine ridge 498 *Major moraine ridge 256 *Medial (medial)	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *De		Not applicable e.g. X Glaciation 3.06.01.008 *Major moraine ridge (medial)	Moraine ridge / large, majo medial				297 *Unspecified 304 Unspecified 201 Active 200 *Keever 210 *Net configuration		প্র	The arrow points downhill. For unknown direction the symbol is pointing up. Retrogressive thaw flow / small. Feature too small to draw to scale.Point of observation
features 292 Inactive Anthropogenic GEM_POINTS 4131002 Drillhole location (all) 413 *Drillhole location 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 3.03.01.001 *Drillhole location (all)		Glacial and ice- contact features GEM_LINES 4981027 Major moraine ridge (end, interlobate, or unspecified) 498 *Major moraine ridge 240 End 249 Interlobate 283 *Unspecified	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable		Moraine ridge / large, majo end, interlobate, or unspeci	or, features	GEM_POINTS 1841002 Retrogressive thaw flow 184 *Retrogressive flow flow		292 Inactive 302 Unknown 297 *Unspecified 304 Unspecified	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) e.g. 1992 3.09.01.004 *Retrogressive thaw flow earthquake (all)	♪ ∅	direction unknown; direction known known known direction unknown; direction known direction unknown; direction known direction unknown; direction direction unknown; direction known direction direction known direction
features Bedrock features GEM_POINTS 4371002 Tor (all) 437 *Tor 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 3.04.01.003 *Tor (all) +		Glacial and ice- contact features GEM_LINES 4981039 Major moraine ridge (lateral ice-cored or laterofrontal ice-cored) 498 *Major moraine ridge 571 *Lateral ice-cored 572 Laterofrontal ice-core		efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.06.01.007 *Major moraine ridge (lateral ice-cored or laterofrontal ic cored)	e- Good Good Good Good Good Good Good Goo	- Intrass washing	GEM_POINTS 1851002 Unspecified slope- movement (all) 185 * Unspecified smovement		292 Inactive 302 Unknown	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) e.g. 1992 change 0 to 359 degrees 2 to 5 (1=oldest) e.g. 1992 earthquake movement (all)	Ŷ	Unspecified slope movement / Feature too small to draw to scale.Point of observation and rotation (0 = North) are based at midpoint of symbol.
Bedrock features GEM_POLYS 4591002 Area of sinkholes (all) 459 * Area of sinkholes 260 * Not applicable 293 * Not applicable 293 * Not applicable	Not applicable Not applicable Not applicable 3.04.01.007 *Area of sinkholes (all)		Glacial and ice- contact features GEM_LINES 4981048 Major moraine ridge 498 *Major moraine ridge 573 *Medial ice-cored (medial ice-cored)	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.06.01.009 *Major moraine ridge (medial ice-cored)					297 *Unspecified 304 Unspecified		Я	direction known The arrow points downhill. For unknown direction the symbol is pointing up.
Bedrock features GEM_POINTS 4331002 Sinkhole (all) 433 *Sinkhole 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable S		Glacial and ice- contact features GEM_LINES 4981026 Major moraine ridge (end ice-cored, interlobate ice- cored, or unspecified ice-cored) 568 End ice-cored 569 Interlobate ice- cored, or unspecified ice-cored 570 *Unspecified ice-core		efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.06.01.011 *Major moraine ridge ice-cored, interlobate ice-cored, or unspecified ice-cored)		or, features	GEM_POINTS 4091002 Alluvial fan (all) 409 *Alluvial fan	260 *Not applicable	293 *Not applicable 299 Known 305 *Fluvial 302 Unknown 304 *Unspecified	Not applicable 0 to 359 degrees Not applicable Not applicable 3.10.01.001 *Alluvial fan (all)	V	Alluvial fan / paleocurrent Feature too small to draw to scale.Point of observation direction unknown; and rotation (0 = North) are based at midpoint of symbol. paleocurrent direction known Triangle opens in direction of progradation. For unknown direction the symbol is pointing up. Between the symbol is pointing up.
A constraint A constraint <th< td=""><td>Not applicable Not applicable Not applicable Not applicable 3.04.01.005 *Bedrock scarp (all)</td><td>orientated. Bedrock scarp Line digitized using right-side rule. Ornamentations on downslope.</td><td>Glacial and ice- contact features GEM_LINES 4611002 Ice-contact scarp (all) 461 *Ice-contact scarp 260 *Not applicable</td><td>293 *Not applicable 299 *Known 310 *Not applicable 287 *De</td><td>efined 315 *Accurate Not applicable</td><td>Not applicable e.g. X Glaciation 3.07.01.007 *lce-contact scarp (all)</td><td>Ice-contact scarp</td><td>Line digitized using right-side rule. Ornamentations point downscarp. Paleodrainage features</td><td>GEM_LINES 5061055 Spillway central axis 506 *Spillway cent (direction unknown or</td><td></td><td>293 *Not applicable 302 Unknown 304 *Unspecified 310 *Not applicable 287 *Defined</td><td>315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.017 *Spillway central axis (direction unknown or unspecified)</td><td></td><td>Spillway / paleocurrent direction unknown</td></th<>	Not applicable Not applicable Not applicable Not applicable 3.04.01.005 *Bedrock scarp (all)	orientated. Bedrock scarp Line digitized using right-side rule. Ornamentations on downslope.	Glacial and ice- contact features GEM_LINES 4611002 Ice-contact scarp (all) 461 *Ice-contact scarp 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.007 *lce-contact scarp (all)	Ice-contact scarp	Line digitized using right-side rule. Ornamentations point downscarp. Paleodrainage features	GEM_LINES 5061055 Spillway central axis 506 *Spillway cent (direction unknown or		293 *Not applicable 302 Unknown 304 *Unspecified 310 *Not applicable 287 *Defined	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.017 *Spillway central axis (direction unknown or unspecified)		Spillway / paleocurrent direction unknown
Bedrock features GEM_LINES 4941002 Lineament or lineation in 494 *Lineament or lineation 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *Defined 315 *Accurate		Lineament or lineation in Linear features that have been determined from aerial	Glacial and ice- contact features GEM_LINES 1101002 Ice-pushed ridge (all) 110 *Ice-pushed ridge 260 *Not applicable	291 Active 299 *Known 305 Fluvial 287 *De 292 Inactive 308 Lacustrine 297 *Unspecified 309 Marine	efined 315 *Accurate Not applicable	Not applicable Not applicable 3.07.01.008 *Ice-pushed ridge (all)	Ice-pushed ridge	Seasonal or drift-ice.Line digitized using right-side rule. Ornamentations point basinward. Paleodrainage	GEM_LINES 5061053 Spillway central axis (direction known)	113 Subglacial 283 *Unspecified al axis 114 Ice-marginal 111 Overflow	293 *Not applicable 299 *Known 310 *Not applicable 287 *Defined		~~~~~	Spillway / paleocurrent Line digitized using right-side rule. Arrow points in direction known
bedrock (all) in bedrock Bedrock features GEM_POINTS 1901002 Mineral occurrence (all) 190 *Mineral occurrence 613 Deposit 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable Not applicable 3.04.01.008 *Mineral occurrence (all)	identified on the ground	Glacial and ice- contact features GEM_LINES 4891002 Ice-thrust ridge (all) 489 *Ice-thrust ridge 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.009 *Ice-thrust ridge (all)	Ice-thrust ridge	Line digitized using right-side rule. Ornamentations on up-ice side. Paleodrainage		113 Subglacial 283 *Unspecified	293 *Not applicable 112 Inferred 310 *Not applicable 288 *Not applicable	able 316 *Not applicable Not applicable e.g. X Glaciation 3.10.01.010 *Paleodrainage direction		Paleodrainage direction / large Line digitized using right-side rule. Arrow points in
612 Developed prospect 615 Past production 614 Production 611 Prospect		Annotation is added using text symbol 2.03.01.003.	Glacial and ice- contact features GEM_POINTS 4171002 Kame (all) 417 *Kame 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not appli	plicable Not applicable e.g. X Glaciation 3.07.01.002 *Kame (all)	* Kame	Feature too small to draw to scale.Point of observation is based at midpoint of symbol. Paleodrainage	(all) F_PFLOW 5151052 Paleocurrent 515 *Paleocurrent	590 Clast imbrications	293 *Not applicable 299 *Known 116 Glaciofluvial	(all) Not applicable 0 to 359 degrees 1 to 5 (1=oldest) Not applicable 3.10.01.003 Paleocurrent		Paleocurrent direction / field Field observation.Point of observation and rotation (0 =
Bedreck features CEM_POINTS 4211003 Small exteres (ell) 421 #Empli exteres 202 #Not explicable 200 #Not explicable 210 #Not explicable	Net englischie Net englischie Net englischie 2.04.01.002 *5 meil euteren (ell)		Glacial and ice- contact features GEM_LINES 4671055 Buried esker ridge (direction unknown or unspecified) 467 *Buried esker ridge 260 *Not applicable	293 *Not applicable 302 Unknown 310 *Not applicable 287 *De 304 *Unspecified	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.004 *Buried esker ridge (direction unknown or unspecified)	Esker ridge / buried, paleocurrent direction unknown	features	measurement location measurement loca (sediments)	ion 243 Crossbeds 158 *Depositional unspecified 593 Flute cast	313 Subglacial 314 *Unspecified	measurement location (sediments)	✓	observation (sediments) North) are based at midpoint of symbol. The arrow points down paleocurrent.
Bedrock features GEM_POINTS 4211002 Small outcrop (all) 421 *Small outcrop 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable Eolian features F_PFLOW 5161002 Paleowind 516 *Paleowind 129 Dune foresets 293 *Not applicable 299 *Known 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 3.04.01.002 *Small outcrop (all) Not applicable 0 to 359 degrees 1 to 5 (1=oldest) Not applicable 3.05.01.002 Paleowind measurements	Paleowind direction / field Field observation, measurement from dune foresets or	Glacial and ice- contact features GEM_LINES 4671054 Buried esker ridge (direction known or inferred) 467 *Buried esker ridge 260 *Not applicable		efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.003 *Buried esker ridge (direction known or inferred)		Line digitized using right-side rule. Chevrons point in direction of flow.		593 Flute Cast 584 Grooves 162 Longitudinal gravel bar 591 Planar crossbedding 594 Ripole azimuth				
Eolian features GEM_POINTS 4111055 Deflation landform 411 * Deflation landform 207 Blowout 291 Active 302 Unknown 118 * Eolian	Year of significant Not applicable Not applicable 3.05.01.007 *Deflation landform		Glacial and ice- contact features GEM_LINES 4811055 Esker ridge (direction unknown or unspecified) 481 *Esker ridge 260 *Not applicable	293 *Not applicable 302 Unknown 310 *Not applicable 287 *De 304 *Unspecified	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.006 *Esker ridge (direction unknown or unspecified)	<><>><><> Esker ridge / paleocurrent direction unknown			594 Rupple azimuth 595 Ripple crest 139 Ripple laminations 592 Trough crossbedding				
Image: Section unknown or unspecified) (direction unknown or unspecified) 208 Deflation hollow 238 *Unspecified 292 Inactive 297 *Unspecified 304 *Unspecified Eolian features GEM_POINTS 411053 Deflation landform 411 *Deflation landform 207 Blowout 291 Active 299 *Known 118 *Eolian	change (direction unknown or unspecified) Year of significant 0 to 359 degrees Not applicable Not applicable 3.05.01.001 *Deflation landform	direction unknown based at midpoint of symbol. Deflation landform / paleowind Feature too small to draw to scale.Point of observation	Glacial and ice- GEM_LINES 4811054 Esker ridge (direction 481 *Esker ridge 260 *Not applicable	293 *Not applicable 112 Inferred 310 *Not applicable 287 *De 299 *Known	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.005 *Esker ridge (direction known or inferred)		Line digitized using right-side rule. Chevrons point in direction of flow.	GEM_LINES 4971064 Minor meltwater channel 497 *Minor meltw central axis (marginal, overflow, channel central ax subglacial, supraglacial or	111 Overflow	291 Active 302 Unknown 312 Proglacial 287 *Defined 292 Inactive 304 *Unspecified 314 *Unspecified	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.009 *Minor meltwater channel central axis (marginal, overflow, subglacial, supraglacial or unspecified;		Meltwater channel / minor, paleocurrent direction unknown
(direction known) 208 Deflation hollow 283 *Unspecified 292 Inactive 297 *Unspecified Eolian features GEM_POLYS 4421002 Active dune field (all) 442 *Active dune field 260 *Not applicable 291 *Active	change (direction known) Not applicable Not applicable Not applicable Not applicable	direction known and rotation (0 = North) are based at midpoint of		293 *Not applicable 302 Unknown 304 *Unspecified 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.011 *Esker ridge (with bearidges/strandlines; direction unkno or unspecified)			unspecified; direction unknown or unspecified) GEM_LINES 4971081 Minor meltwater channel 497 *Minor meltw	682 Supraglacial 283 *Unspecified ter 255 Marginal	291 Active 299 *Known 312 Proglacial 287 *Defined	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.008 *Minor meltwater channel		Meltwater channel / minor, Line digitized using right-side rule. Arrow points in
Eolian features GEM_LINES 4781002 Dune crest (all) 478 *Dune crest 254 Longitudinal 291 Active 300 *Not applicable 310 *Not applicable 287 *Defined 315 *Accurate		Dune / dune crest Paleowind direction can be indicated with an additional	Glacial and ice- contact features GEM_LINES 4811076 Esker ridge (with beach ridges/strandlines; direction 481 *Esker ridge 675 *With beach ridges/strandlines	293 *Not applicable 112 Inferred 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.07.01.010 *Esker ridge (with bear ridges/strandlines; direction known inferred)	ch and a characteristic characterist	lge, Line digitized using right-side rule. Chevrons point in direction of flow.	central axis (marginal, overflow, channel central ax subglacial, supraglacial or unspecified; direction known)	111 Overflow 113 Subglacial 682 Supraglacial 283 *Unspecified	292 Inactive 314 *Unspecified 297 *Unspecified	central axis (marginal, overflow, subglacial, supraglacial or unspecified; direction known)	D -	paleocurrent direction known direction of flow.
Eolian features GEM_POINTS; 4141055 Dune (direction 414 * Dune 254 Longitudinal 291 Active 302 Unknown 310 *Not applicable	Year of significant 0 to 359 degrees Not applicable 3.05.01.009 *Dune (direction unknown	Sediment transport direction line.Multiple lines must be digitized individually. The legend symbol 3.15.01.002 is a	Glacial and ice- contact features GEM_LINES 4731002 Crevasse-fill ridge (all) 473 *Crevasse-fill ridge 113 Subglacial 682 Supraglacial	293 *Not applicable 300 *Not applicable 319 Glacial 287 *De 320 Ice-contact	efined 315 *Accurate Not applicable	Not applicable Not applicable 3.06.01.005 *Crevasse-fill ridge (all	or interred	Multiple lines must be digitized individually. The legend features symbol 3.15.01.003 is a set of moraine ridges.	GEM_LINES 4971041 Minor meltwater channel 497 *Minor meltw central axis (lateral uphill left) channel central ax		291 Active299 *Known312 Proglacial287 *Defined292 Inactive314 *Unspecified287 *Defined	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.006 *Minor meltwater channel central axis (lateral uphill left)		Meltwater channel / minor, lateral uphill left Ornamentations point uphill. The legend symbol 3.10.01.007 is used to represent both sides.
F_PFLOW unknown or unspecified) 262 Parabolic 292 Inactive 304 *Unspecified 283 *Unspecified 297 *Unspecified 90 * Unspecified	change or unspecified) C and the second seco	paleowind direction unknown observation.Point of observation is based at midpoint of symbol. This symbol is not orientated.	Glacial and ice- contact features GEM_LINES 4691002 Cirque headwall (all) 469 *Cirque headwall 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.06.01.004 *Cirque headwall (all)	Cirque headwall		GEM_LINES 4971042 Minor meltwater channel 497 *Minor meltw central axis (lateral uphill right) channel central ax		291 Active 292 Inactive 297 *Unspecified299 *Known 299 *Known312 Proglacial 314 *Unspecified287 *Defined	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.007 *Minor meltwater channel central axis (lateral uphill right)		Meltwater channel / minor, lateral uphill right Line digitized using right-side rule. Ornamentations point uphill.
Eolian features GEM_POINTS; 4141053 Dune (direction known) 414 *Dune 254 Longitudinal 291 Active 299 *Known 310 *Not applicable F_PFLOW 283 *Unspecified 297 *Unspecified 297 *Unspecified 201 Active 200 *Known 310 *Not applicable	Year of significant 0 to 359 degrees 1 to 5 (1=oldest) Not applicable 3.05.01.008 *Dune (direction known) 3.05.01.008 Dune observation location (direction known)	downslope.		293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable Not applicable 3.06.01.003 *Arête (all)	Arête	Paleodrainage	GEM_LINES 4961002 Major meltwater channel 496 *Major meltw scarp (all) channel scarp		291 Active 299 *Known 312 Proglacial 287 *Defined 292 Inactive 297 *Unspecified	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.005 *Major meltwater channel scarp (all)		Meltwater channel / major, paleocurrent not indicated; with additional paleocurrent direction known direction with additional paleocurrent direction with additional paleocurrent direction with additional paleocurrent direction with a direction with a manual the logistized in other
Eolian features GEM_POLYS 1501022 Eolian lag deposit (deflation surface) 150 * Eolian lag deposit 100 * Deflation surface 293 * Not applicable Image: Comparison of the surface Image:	Not applicable Not applicable Not applicable 3.05.01.006 *Eolian lag deposit (deflation surface)	Eolian lag deposit (deflation Deflation surface. surface)	lce-movement GEM_LINES 5621002 Buried drumlinoid ridge 562 *Buried drumlinoid ridge 566 Submerged (all) 283 *Unspecified	293 *Not applicable 302 *Unknown 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.08.01.015 *Buried drumlinoid rid (all)	lge Drumlinoid ridge / large, bu		GEM POINTS. 2631002 Meltivator procisional and the li	113 Subglacial 283 *Unspecified	293 *Not applicable 300 *Not applicable 116 *Classefinited	Not applicable Not applicable Not applicable or V Closicity 2 10 21 010 th the second state		direction known direction using same symbol. The legend symbol 3.15.01.007 shows the 2 sides of the channel. Ornamentations p Meltwater erosional depression Feature too small to draw to scale and/or field
Map-unit boundaries S091091 Geological boundary (confidence arbitrary) 509 *Geological boundary (confidence arbitrary (confidence arbitrary) 509 *Geological boundary (confidence arbitrary (confidence arbitrary) 509 *Geological boundary (confidence arbitrary (confidence	Ible Not applicable Not applicable Not applicable 2.01.01.011 *Geological boundary (confidence arbitrary)	Geological boundary / confidence arbitrary	indicators (all) 283 *Unspecified Ice-movement GEM_POINTS 5451002 Buried drumlinoid (all) 545 *Buried drumlinoid 260 *Not applicable indicators S451002 Buried drumlinoid (all) 545 *Buried drumlinoid 260 *Not applicable	293 *Not applicable 302 *Unknown 310 *Not applicable	Not applicable 0 to 359 c	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.002 *Buried drumlinoid (al		uried Feature too small to draw to scale.Point of observation and rotation (0 = North) are based at midpoint of	GEM_POINTS, 2631002 Meltwater erosional 263 *Meltwater erosional depression (all) depression			Not applicable Not applicable Not applicable e.g. X Glaciation 3.10.01.018 *Meltwater erosional depression (all)3.10.01.018 Meltwater erosional depression (all)3.10.01.018 Meltwater erosional depression observation location (all)	\oplus	Meltwater erosional depression Feature too small to draw to scale and/or field observation.Point of observation is based at midpoint of symbol.
Map-unit boundaries GEO_BOUND 5091014 Geological boundary (confidence defined) 509 *Geological boundary (confidenc	ble Not applicable Not applicable Not applicable Not applicable 3.02.01.001 *Geological boundary (confidence defined)	Geological boundary / confidence defined	Ice-movement GEM_LINES 5631002 Drumlinoid ridge (all) 563 *Drumlinoid ridge 260 *Not applicable	293 *Not applicable 302 *Unknown 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.08.01.018 *Drumlinoid ridge (all)	Drumlinoid ridge / large	symbol. Label optional: use generation field with text symbol 2.03.01.005.	GEM_LINES 1861006 Subglacial meltwater 186 *Subglacial me corridor margin (confidence corridor margin approximate)	twater 113 *Subglacial	293 *Not applicable 299 *Known 310 *Not applicable 285 *Approxima			Subglacial meltwater corridor Paleoflow direction can be indicated with an additional margin / confidence Paelodrainage direction line.Line digitized using right-side approximate rule. Opposite sides of channel must be digitized in other direction using same symbol. The legend symbol
Map-unit boundaries 6E0_BOUND 5091006 Geological boundary (confidence approximate) 509 *Geological boundary (confidence approximate) 509 *Geologic	Ible Not applicable Not applicable Not applicable 3.02.01.002 *Geological boundary (confidence approximate)	Geological boundary / Confidence approximate	Indicators Ice-movement GEM POINTS 5461002 Drumlinoid (all) 546 *Drumlinoid 260 *Not applicable	293 *Not applicable 302 *Unknown 310 *Not applicable	Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.005 *Drumlinoid (all)	Drumlinoid ridge / small	Feature too small to draw to scale.Point of observation Paleodrainage	GEM_LINES 1861014 Subglacial meltwater 186 *Subglacial me	twater 113 *Subglacial	293 *Not applicable 299 *Known 310 *Not applicable 287 *Defined	315 *Accurate Not applicable Not applicable e.g. X Glaciation 3.10.01.015 *Subglacial meltwater		3.15.01.013 shows the 2 sides of the channel. Ornamentations p Subglacial meltwater corridor Paleoflow direction can be indicated with an additional
Map-unit boundaries 5091019 Geological boundary (confidence inferred) 509 *Geological boundary (confidence inferred) 509 *Geological boundary 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 104 *Inferred 316 *Not applicable 310 *Not applicable 104 *Inferred 316 *Not applicable 310 *Not applica	ble Not applicable Not applicable Not applicable Not applicable S.02.01.003 *Geological boundary (confidence inferred)	Geological boundary / Confidence inferred	indicators					and rotation (0 = North) are based at midpoint of symbol. Label optional: use generation field with text symbol 2.03.01.005.	corridor margin (confidence corridor margin defined)			corridor margin (confidence defined)		margin / confidence defined Paelodrainage direction line.Line digitized using right-side rule. Opposite sides of channel must be digitized in other direction using same symbol. The legend symbol 3.15.01.012 shows the 2 sides of the channel.
Map-unit boundaries 5091012 Geological boundary (confidence concealed) 509 *Geological boundary (confidence concealed) 509 *Ge	Ible Not applicable Not applicable Not applicable Not applicable Not applicable 3.02.01.004 *Geological boundary (confidence concealed)	Geological boundary / Confidence concealed	Ice-movement GEM_LINES 1021002 Buried drumlin ridge (all) 102 *Buried drumlin ridge 566 Submerged indicators 283 *Unspecified			Not applicable e.g. X Glaciation 3.08.01.014 *Buried drumlin ridge		features	GEM_LINES 4661002 Partly buried channel 466 *Partly buried channel scarp (all)	hannel 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 287 *Defined	corr (all)		Ornamentations p Partly buried channel scarp Paleoflow direction can be indicated with an additional Paelodrainage direction line.Line digitized using right-side rule. Opposite sides of channel must be digitized in other
Map-unit boundaries GEO_BOUND 5101045 Limit of mapping (limit of 510 *Limit of mapping apping) 510 *Limit of mapping 161 *Limit of mapping 293 *Not applicable 300 *Not applicable 310 *Not applicable 310 *Not applicable 316 *No	ble Not applicable Not applicable Not applicable Not applicable Site Site Site Site Site Site Site Sit	Limit of mapping Use when extent of mapping does not correspond to boundary of map (e.g. watershed area).	Ice-movement GEM_POINTS 1231002 Buried drumlin (all) 123 *Buried drumlin 260 *Not applicable Indicators Ice-movement GEM_LINES 4761002 Drumlin ridge (all) 476 *Drumlin ridge 317 Bedrock	293 *Not applicable 299 *Known 310 *Not applicable 287 *De		9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.001 *Buried drumlin (all) Not applicable e.g. X Glaciation 3.08.01.017 *Drumlin ridge (all)	Drumlin ridge /large	Feature too small to draw to scale.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points in direction of flow. Line digitized using right-side rule. Arc points in direction						direction using same symbol. The legend symbol 3.15.01.008 shows the 2 sides of the channel. Ornamentations p
Map-unit boundaries GEO_BOUND 5341002 Geological boundary coincident with other line feature f	coincident with other line feature	Geological boundary coincident Use when geological boundary coincides with another with a linear feature / linear feature. This symbol will not be shown on the map		293 *Not applicable 299 *Known 310 *Not applicable	Not applicable 0 to 250 /	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.004 *Drumlin (all)	Drumlin / small	Feature too small to draw to scale Point of observation	(direction unknown or axis unspecified)		293 *Not applicable 302 Unknown 310 *Not applicable 285 Approximate 287 Defined 290 *Unspecified	drainage, (direction unknown or unspecified) Tertiary drainage		Buried valley central axis / This symbol shows the central axis of the buried valley, paleodrainage direction unknown
Map-unit boundaries GEO_BOUND 5341002 Geological boundary coincident with other line feature coincident with other line f	coincident with other line feature	Geological boundary coincident Use when geological boundary coincides with another	indicators Izo1002 Brainin (an) Izo1002 Brainin (an			Not applicable e.g. X Glaciation 3.08.01.044 *Buried crag-and-tail r		and rotation (0 = North) are based at midpoint of symbol. The arrow points in direction of flow. Line digitized using right-side rule. Arrow points in	GEM_LINES 6431053 Buried valley central axis 643 *Buried valley (direction known) axis	entral 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 285 Approximate 287 Defined 290 *Unspecified	drainage, (direction known)	- b - b - b - b	Buried valley central axis / paleodrainage direction known point in direction of flow.
(all) feature Map-unit GEO_BOUND 5341002 Geological boundary 534 *Geological boundary 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 104 Inferred 316 *Not applicable boundaries Coincident with other line feature Coincident with other line Coincident with other line 260 *Not applicable 293 *Not applicable 300 *Not applicable 104 Inferred 316 *Not applicable	coincident with other line feature		indicators (all) ridge lce-movement GEM_POINTS 2151002 Buried crag-and-tail (all) 215 *Buried crag-and-tail 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable	Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.045 *Buried crag-and-tail (all)	direction of flow. Paleodrainage features d Feature too small to draw to scale; see striations for field	F_PFLOW 5151004 Paleocurrent 515 *Paleocurrent measurement location (bedrock measurement loca erosional forms)		293 *Not applicable 299 *Known 310 *Not applicable	Not applicable 0 to 359 degrees 1 to 5 (1=oldest) Not applicable 3.10.01.004 Paleocurrent measurement location (bedrock erosional forms)	57	Paleocurrent direction / field Field observation.Point of observation and rotation (0 = observation (bedrock) North) are based at midpoint of symbol. The arrow points down paleocurrent.
Map-unit boundaries GEO_BOUND 5341002 Geological boundary coincident with other line feature 534 *Geological boundary coincident with other line 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 286 Concealed 316 *Not applicable	coincident with other line feature	confidence inferred legend. Geological boundary coincident Use when geological boundary coincides with another with a linear feature / linear feature / linear feature. This symbol will not be shown on the map	Indicators Ice-movement GEM_LINES 4721002 Crag-and-tail ridge (all) 472 *Crag-and-tail ridge 260 *Not applicable	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.08.01.016 *Crag-and-tail ridge (a	II) Crag-and-tail ridge / large	observations.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points in direction of flow. Line digitized using right-side rule. Arrow points in		155 Furrows 151 Muschelbruchen 152 Sichelwannen 154 Spindle flutes				
Map-unit boundaries GEO_BOUND 5101049 Limit of mapping (neatline) 510 * Limit of mapping mapping 103 * Neatline 293 * Not applicable 293 * Not applicable 310 * Not applicable 288 * Not applicable 316 * Not applicable	ble Not applicable Not applicable Not applicable 3.02.01.006 *Limit of mapping (neatline)	Limit of mapping / neatline NTS neatline.This symbol should not be shown if coincides with map border	Indicators Ice-movement GEM_POINTS 1191002 Crag-and-tail (all) 119 *Crag-and-tail 260 *Not applicable			9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.003 *Crag-and-tail (all)	Crag-and-tail / small	direction of flow. Paleogeography features Feature too small to draw to scale; see striations for field	GEM_LINES 4931010 Limit of submergence 493 *Limit of submergence (confidence approximate; environment lacustrine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 308 *Lacustrine 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable Not applicable e.g. maximum 3.11.01.012 *Limit of submergence (confidence approximate; environment lacustrine)		Limit of submergence / lacustrine, confidenceLine digitized using right-side rule. Ornamentations point basinward or downslope.approximate
Miscellaneous features F_STATION 1051002 Spring observation location (all) 105 *Spring observation location 137 Cold spring 109 Hot spring 209 Inactive 291 Active 292 Inactive 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 3.14.01.012 Spring observation location (all)	Spring / field observation Field observation.Point of observation is based at midpoint of symbol. This symbol is not orientated.	indicators Indicators lce-movement GEM_LINES 4071002 Pre-crag ridge (all) 407 *Pre-crag ridge 260 *Not applicable	202 *Not applicable 200 *Known 210 *Not applicable 297 *Do	ofined 215 *Accurate Not applicable	Not applicable e.g. X Glaciation 3.08.01.040 *Pre-crag ridge (all)	Pre-crag ridge / large	observations.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points in direction of flow. Line digitized using right-side rule. Arrow points in	GEM_LINES 4931017 Limit of submergence 493 *Limit of submergence (confidence defined; environment lacustrine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 308 *Lacustrine 287 *Defined	316 *Not applicable Not applicable Not applicable e.g. maximum 3.11.01.011 *Limit of submergence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence Iconfidence	- 	Limit of submergence / Line digitized using right-side rule. Ornamentations point lacustrine, confidence defined basinward or downslope.
And Comparison And Comparison Annular depression (all) 101*Annular depression 260*Not applicable 293*Not applicable	Not applicable Not applicable Not applicable Not applicable 3.14.01.023 *Annular depression (all)	Annular depression / large	Indicators Ice-movement GEM_POINTS; 4081002 Pre-crag (all) 408 *Pre-crag 260 *Not applicable			9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.039 *Pre-crag (all)	►>		GEM_LINES 4931011 Limit of submergence 493 *Limit of submergence (confidence approximate; environment marine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 309 *Marine 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable Not applicable e.g. maximum 3.11.01.014 *Limit of submergence (confidence approximate; environment marine)		Limit of submergence / marine, confidence approximate Line digitized using right-side rule. Ornamentations point basinward or downslope.
Miscellaneous GEM_POINTS 4101002 Annular depression (all) 410 *Annular depression 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 3.14.01.024 *Annular depression (all)		Indicators F_STATION			3.08.01.039 Pre-crag observation location (all)	observation		GEM_LINES 4931018 Limit of submergence 493 *Limit of submergence (confidence defined; environment marine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 309 *Marine 287 *Defined	316 *Not applicable Not applicable Not applicable e.g. maximum 3.11.01.013 *Limit of submergence Iconfidence defined; environment Sea marine)	- <u>n m n n n n</u>	Limit of submergence / marine, confidence defined Line digitized using right-side rule. Ornamentations point basinward or downslope.
Miscellaneous GEM_POLYS 6421002 Evaporites (all) 642 *Evaporites 660 Salt flats 283 *Unspecified 283 *Unspecified	Year of significant change Not applicable Not applicable 3.14.01.017 *Evaporites (all)	Evaporites Use to identify salt precipitates (evaporite sensu lato) from groundwater flow at the surface of a variety of sediments, but dominantly in lacustrine sediments.	Ice-movement GEM_LINES 4841055 Large groove central long 484 *Large groove central axis (direction unknown or unspecified) 260 *Not applicable	304 *Unspecified		Not applicable e.g. X Glaciation 3.08.01.022 *Large groove central axis (direction unknown or unspeci	fied) (Paleogeography features	GEM_LINES 4931008 Limit of submergence 493 *Limit of submergence (confidence approximate; environment glaciolacustrine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 306 *Glaciolacustrine 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable Not applicable e.g. maximum 3.11.01.008 *Limit of submergence (confidence approximate; environment glaciolacustrine)		Limit of submergence / glaciolacustrine, confidence approximateLine digitized using right-side rule. Ornamentations point basinward or downslope.
Miscellaneous GEM_POINTS; 4381002 Hummock (all) 438 *Hummock 260 *Not applicable 293 *Not applicable 300 *	Not applicable Not applicable Not applicable Not applicable 3.14.01.019 *Hummock (all) 3.14.01.019 Hummock observation location (all) 0.00000000000000000000000000000000000	Hummock / small; field Feature too small to draw to scale and/or field observation observation.Point of observation is based at midpoint of symbol. This symbol is not orientated.				Not applicable e.g. X Glaciation 3.08.01.021 *Large groove central axis (direction known)	direction known	features	GEM_LINES 4931015 Limit of submergence 493 *Limit of submergence (confidence defined; environment glaciolacustrine)	ergence 260 *Not applicable	293 *Not applicable 299 *Known 306 *Glaciolacustrine 287 *Defined	316 *Not applicable Not applicable Not applicable e.g. maximum 3.11.01.007 *Limit of submergence level of X Lake or glaciolacustrine)		Limit of submergence / Line digitized using right-side rule. Ornamentations point glaciolacustrine, confidence defined
Miscellaneous GEM_POLYS 6041002 Extensive gullied terrain 604 *Extensive gullied terrain 260 *Not applicable 291 Active 292 Inactive 297 *Unspecified	Not applicable Not applicable Not applicable 3.14.01.005 *Extensive gullied terrain (all)	Extensive gullied terrain	Ice-movement GEM_LINES 5431070 Fluted bedrock or drift, central long axis (poorly defined; direction unknown or unspecified) 543 *Fluted bedrock or drift, central long axis 317 Bedrock indicators direction unknown or unspecified) central long axis 552 Unconsolidated sediments 283 *Unspecified 283 *Unspecified 283 *Unspecified	295 *Poorly defined 302 Unknown 310 *Not applicable 287 *De 304 *Unspecified	erined 315 "Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.034 *Fluted bedrock or dri central long axis (poorly defined; direction unknown or unspecified)		ined, Paleogeography	GEM_LINES 4861006 Ice-stream margin 486 *Ice-stream m (confidence approximate)	rgin 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable Not applicable e.g. X Glaciation 3.11.01.004 *Ice-stream margin (confidence approximate)		Ice-stream margin / confidence Line digitized using right-side rule. Opposite sides of approximate channel must be digitized in other direction using same symbol. The fine dotted line on the ice-stream side.
Miscellaneous GEM_LINES 1061002 Alluvial bar or levee ridge (all) 106 Alluvial bar or levee ridge (all) 106 Alluvial bar or levee ridge 292 Inactive 292 Inactive 292 Inactive 292 Inactive 297 *Unspecified 297 *	Not applicable Not applicable e.g. flood of 1986 3.14.01.009 *Alluvial bar or levee ridge (all)		Ice-movement GEM_POINTS; 5441070 Fluted bedrock or drift 544 *Fluted bedrock or drift 317 Bedrock indicators F_PFLOW (poorly defined; direction unknown or unspecified) 552 Unconsolidated sediments 283 *Unspecified	295 *Poorly defined 302 Unknown 310 *Not applicable 304 *Unspecified	Not applicable 0 to 359 d	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.030 *Fluted bedrock or dri (poorly defined; direction unknown unspecified) 3.08.01.030 Fluted bedrock or drift	n or field observation, poorly defined, ice-flow direction	hall; Feature too small to draw to scale and/or field observation.Point of observation and rotation (0 = North) are based at midpoint of symbol. Label optional: use generation field with text symbol 2.03.01.005.	GEM_LINES 4861014 Ice-stream margin 486 *Ice-stream m (confidence defined)	rgin 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *Defined	316 *Not applicable Not applicable Not applicable e.g. X Glaciation 3.11.01.003 *Ice-stream margin (confidence defined)		Ice-stream margin / confidenceLine digitized using right-side rule. Opposite sides of channel must be digitized in other direction using same symbol. The fine dotted line on the ice-stream side.
Miscellaneous GEM_POLYS 4631002 Lag deposits (all) 463 *Lag deposits 564 Boulder lag 672 Gravel lag 283 *Unspecified	Not applicable Not applicable Not applicable 3.14.01.013 *Lag deposits (all)	Lag deposits (boulder lag, gravel Washed scoured lag. lag)	Ice-movement GEM_LINES 5431069 Fluted bedrock or drift, central long axis (poorly defined; central long axis 543 *Fluted bedrock or drift, central long axis 587 Roche moutonnée	295 *Poorly defined 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.033 *Fluted bedrock or dricentral long axis (poorly defined;	ft, Fluted bedrock or drift, cent	tral Line digitized using right-side rule. Arrow points in	GEM_LINES 4851006 Ice divide (confidence 485 *Ice divide approximate)	260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable e.g. X Glaciation 3.11.01.002 *Ice divide (confidence approximate)		Ice divide / confidence approximate
Miscellaneous features 6481002 Reworked sediments (all) 608 *Reworked sediments 674 Reworked by meltwater 673 Reworked by waves and current 293 *Not applicable 673 Reworked by waves and current 200 *Not applicable 673 Reworked by waves and current 200 *Not applicable 673 Reworked by waves and current 200 *Not applicable 673 Reworked by waves and 200 *Not applicable 673 Reworked 673 Rew	Not applicable Not applicable Not applicable 3.14.01.014 *Reworked sediments (all)	Reworked sediments (reworked Features reworked by waves, currents, or meltwater. by waves and current or meltwater)	direction known) 552 Unconsolidated sediments 283 *Unspecified			direction known)	ice-flow direction known		GEM_LINES 4851014 Ice divide (confidence 485 *Ice divide defined)	260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *Defined	defined	·	Ice divide / confidence defined
Miscellaneous GEM_POLYS 4401002 Surface-boulder 440 *Surface-boulder 669 Deposited by ice 293 *Not applicable features concentration (all) concentration 670 Deposited by meltwater 671 Deposited by slope	Not applicable Not applicable Not applicable Not applicable 3.14.01.015 *Surface-boulder concentration (all)		Ice-movement GEM_POINTS; 5441069 Fluted bedrock or drift 544 *Fluted bedrock or drift 587 Roche moutonnée indicators F_PFLOW (poorly defined; direction known) 544 *Fluted bedrock or drift 588 Stoss and lee	295 *Poorly defined 299 *Known 310 *Not applicable	Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.029 *Fluted bedrock or dri (poorly defined; direction known) 3.08.01.029 Fluted bedrock or drift	field observation, poorly	Paleogeography feature too small to draw to scale and/or field observation.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points in	GEM_LINES 4911006 Limit of glaciation 491 *Limit of glaciation (confidence approximate)	tion 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 285 *Approxima	ate 316 *Not applicable Not applicable Not applicable Not applicable e.g. X Glaciation (confidence approximate)		Limit of glaciation / confidence Line digitized using right-side rule. The fine dotted line on glacier side.
Miscellaneous GEM_LINES 5361002 Ravine scarp (all) 536 *Ravine scarp 317 Bedrock 293 *Not applicable 299 *Known 310 *Not applicable 287 *Defined 315 *Accurate	Not applicable Not applicable Not applicable 3.14.01.011 *Ravine scarp (all)	Ravine scarps Line digitized using right-side rule. Opposite sides of	sediments 283 *Unspecified 209 Whaleback			measurement location (poorly defi direction known)	ned; known	direction of flow. Label optional: use generation field with text symbol 2.03.01.005.	GEM_LINES 4911014 Limit of glaciation 491 *Limit of glaciation (confidence defined)	tion 260 *Not applicable	293 *Not applicable 300 *Not applicable 310 *Not applicable 287 *Defined	316 *Not applicable Not applicable Not applicable Not applicable e.g. X Glaciation 3.11.01.005 *Limit of glaciation (confidence defined)		Limit of glaciation / confidence Line digitized using right-side rule. The fine dotted line on defined glacier side.
features features 552 Unconsolidated sediments 283*Unspecified where the sediments 283*Unspecified Miscellaneous GEM_LINES 1671002 Erosional crest (all) 167 *Erosional crest 248 *In unconsolidated 248 *In unconsolidated 300 *Not applicable 306 Glaciolacustrine 287 *Defined 315 *Accurate			unspecified; direction unknown or sediments unspecified) 283 *Unspecified			1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.020 *Fluted bedrock or dri central long axis (well defined or unspecified; direction unknown or unspecified)	Iong axis / large, well define ice-flow direction unknown	ed, Permafrost and periglacial feature	GEM_POLYS 1681002 Nivation hollow (all) 168 *Nivation holl	w 260 *Not applicable	293 *Not applicable	Not applicable Not applicable Not applicable 3.12.01.020 *Nivation hollow (all)		Nivation hollow Polygon outline digitized with right-side rule. Centroid marker 3.12.01.021 must be added with CartoRep. Ornamentations point into depression.
features material 307 Glacoustrine 307 Glacoustrine 308 June 308 June 308 June 309 J			Ice-movement GEM_LINES 5431071 Fluted bedrock or drift, central long axis (well defined or unspecified; direction known) 543 *Fluted bedrock or drift, central long axis 587 Roche moutonnée Statistica 587 Roche moutonnée 588 Stoss and lee 582 Unconsolidated	297 *Unspecified 299 *Known 310 *Not applicable 287 *De 298 Well defined	efined 315 *Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.019 *Fluted bedrock or dri central long axis (well defined or unspecified; direction known)		tral Line digitized using right-side rule. Arrow points in ed, direction of flow. Permafrost and periglacial feature	GEM_LINES 4741002 Cryoplanation terrace 474 *Cryoplanation scarp (all)		291 Active 299 *Known 310 *Not applicable 287 *Defined 292 Inactive 115 Relict		T.T.T.T.T	Cryoplanation terrace scarp Includes ice-cast pseudomorph.Line digitized using right- side rule. Ornamentations on downslope.
Miscellaneous GEM_LINES 4871002 Iceberg scour central axis 487 *Iceberg scour central axis 260 *Not applicable axis 260 *	Not applicable Not applicable Not applicable e.g. X proglacial 3.14.01.010 *Iceberg scour central axis (all) Image: Comparison of the second sec			297 *Unspecified 302 Unknown 310 *Not applicable	Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.007 *Fluted bedrock or dri		hall; Feature too small to draw to scale and/or field [periglacial feature	GEM_LINES 4921002 Limit of permafrost (all) 492 *Limit of perm	frost 260 *Not applicable	287 Defined	te 316 *Not applicable Not applicable Not applicable Not applicable 3.12.01.015 *Limit of permafrost (all)		Limit of permafrost
Miscellaneous 6EM_POINTS 2061002 Iceberg scour (all) 206 *Iceberg scour (all) 206 *Iceberg scour (all) 260 *Not applicable 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable 400 * Not applic	Not applicable 0 to 359 degrees Not applicable e.g. X proglacial 3.14.01.001 *Iceberg scour (all) Lake or Sea			298 Well defined 304 *Unspecified		(well defined or unspecified; direct unknown or unspecified) 3.08.01.007 Fluted bedrock or drift measurement location (well define	ion field observation, well defin ice-flow direction unknown d or	ned, observation.Point of observation and rotation (0 = North) are based at midpoint of symbol. Label optional: use generation field with text symbol 2.03.01.005. Permafrost and periglacial feature	GEM_POLYS 4621002 Thermokarst depression 462 *Thermokarst		290 *Unspecified	ed Not applicable Not applicable Not applicable 3.12.01.017 *Thermokarst depression (all)		Thermokarst depression / large Polygon outline digitized with right-side rule. Centroid marker 3.12.01.006 must be added with CartoRep.
Miscellaneous features 5031055 Sediment transport direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direction (direction unknown or unspecified) 503 *Sediment transport direction direc	ble Not applicable Not applicable Not applicable Not applicable 3.14.01.022 *Sediment transport direction (direction unknown or unspecified)	Sediment transport direction / paleoflow direction unknown	lce-movement GEM_POINTS; 5441071 Fluted bedrock or drift 544 *Fluted bedrock or drift 587 Roche moutonnée indicators F PELOW (well defined or unspecified: 588 Stoss and lee		Not applicable 0 to 359 of	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.006 *Fluted bedrock or dri	ft 7 Fluted bedrock or drift / sm	nall; Feature too small to draw to scale and/or field Permafrost and	GEM_POINTS; 4361002 Thermokarst depression 436 *Thermokarst	260 *Not applicable	297 *Unspecified 291 Active 300 *Not applicable 310 *Not applicable	Year of significant Not applicable Not applicable Not applicable (all)	K	Ornamentations point into depression. Thermokarst depression / small; Feature too small to draw to scale and/or field
Miscellaneous GEM_LINES 5031053 Sediment transport direction (direction known) directi	ble Not applicable Not applicable Not applicable Not applicable Not applicable	Sediment transport direction / Line digitized using right-side rule. Arrow indicates paleoflow direction known direction of transport.	direction known) 552 Unconsolidated sediments 283 *Unspecified	298 Well defined		(well defined or unspecified; direct known) 3.08.01.006 Fluted bedrock or drift measurement location (well define	ice-flow direction known	ned, observation.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points in direction of flow. Label optional: use generation field with text symbol 2.03.01.005. periglacial feature		und 246 Ice-wedge polygons		change (all) 3.12.01.006 Thermokarst-depression observation location (all) Not applicable Not applicable Not applicable Not applicable	STATION	field observation observation.Point of observation is based at midpoint of symbol. Patterned ground / large
Miscellaneous F_EARTHMAT 5111002 Erratic observation 511 *Erratic observation 260 *Not applicable 293 *Not applicable 310 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Stapplicable Stappli		Ice-movement indicators GEM_LINES (direction unknown or unspecified) 172 1055 Ice-flow direction (direction unknown or unspecified) 172 *Ice-flow direction 172 *Ice-flow direction 174 Ice cap 173 Ice sheet	293 *Not applicable 302 Unknown 310 *Not applicable 287 *De 104 Infe	efined 316 *Not applicable Not applicable erred	unspecified; direction known) Not applicable e.g. X Glaciation 3.08.01.025 *Ice-flow direction (direction unknown or unspecified)	Ice-flow direction / direction	periglacial feature		234 Non sorted circles 258 Non sorted nets 264 Non sorted polygons 278 Non sorted stripes	292 Inactive			
features Iocation (all) Iocation	Not applicable Not applicable Not applicable Not applicable Not applicable 3.14.01.004 Gossan observation	midpoint of symbol. Gossan / field observation Field observation.Point of observation is based at	Ice-movement GEM_LINES 1721053 Ice-flow direction 172 *Ice-flow direction 175 Alpine glacier	293 *Not applicable 299 *Known 310 *Not applicable 287 *De 104 Infe	efined 316 *Not applicable Not applicable erred	Not applicable e.g. X Glaciation 3.08.01.024 *lce-flow direction (direction known)		Drn Line digitized using right-side rule. Arrow points in direction of flow.		606 Sand-wedge polygons 235 Sorted circles 259 Sorted nets 265 Sorted polygons				
features location (all) location Miscellaneous F_EARTHMAT 5121002 Fossil observation 512 *Fossil observation 260 *Not applicable 293 *Not applicable 300 *Not applicable 305 Fluvial Geatures Incation (all) Incation 260 *Not applicable 293 *Not applicable 300 *Not applicable 308 Lacustrine August Incation Incation Incation 260 *Not applicable 293 *Not applicable 300 *Not applicable 308 Lacustrine	Not applicable Not applicable Not applicable Not applicable Not applicable 3.14.01.003 Fossil observation location (all)		Ice-movement GEM_LINES 1491093 Dispersal train margin 149 *Dispersal train margin 149 *Left side indicators (confidence approximate; left 149 *Dispersal train margin 187 *Left side	293 *Not applicable 299 *Known 310 *Not applicable 285 *Ap	pproximate 315 *Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.043 *Dispersal train margin (confidence approximate; left side)	Dispersal train margin / confidence approximate (let	Line digitized using right-side rule. The legend symbol 3.15.01.011 shows the 2 sides of the dispersal train.	GEM_POINTS; 4231002 Patterned ground (all) 423 *Patterned ground (all)	279 Sorted stripes 283 *Unspecified 246 Ice-wedge polygons	291 Active 300 *Not applicable 310 *Not applicable	Year of significant Not applicable Not applicable Not applicable 3.12.01.002 *Patterned ground (all)	#	Patterned ground / small; field Feature too small to draw to scale and/or field
Miscellaneous F_STATION 5191050 Station location (remote 519 *Station location 133 *Remote observation 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable 3.14.01.008 Station location (remote	Station location / remote Field observation.Point of observation is at the midpoint	Ice-movement GEM_LINES 1491094 Dispersal train margin 149 *Dispersal train margin 188 *Right side	293 *Not applicable 299 *Known 310 *Not applicable 285 *Ap	pproximate 315 *Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.044 *Dispersal train margin	n Dispersal train margin /	 Structure and the second of the dispersal train. Ornamentations point toward dispersal train axis, steep side of teeth face down ice. Line digitized using right-side rule. The legend symbol Structure dispersal train. 	5 F_ENVIRION	258 Non sorted nets 264 Non sorted polygons 278 Non sorted stripes	292 Inactive 297 *Unspecified	change 3.12.01.002 Patterned-ground observation location (all)	Т	observation observation.Point of observation is based at midpoint of symbol.
featuresobservation, waypoint, or unspecified)283 Unspecified 135 Waypointhhh	Not applicable Not applicable Not applicable Not applicable Not applicable 3.14.01.007 Station location (ground	observation of symbol. Optional station ID annotation is added using station name field with text symbol 2.03.01.007. Station location / ground Field observation.Point of observation is at the midpoint	side)	293 *Not applicable 299 *Known 310 *Not applicable 287 *De	efined 315 *Accurate Not applicable	1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.041 *Dispersal train margin	e) confidence approximate (rig side of margin) Dispersal train margin /	ght 3.15.01.011 shows the 2 sides of the dispersal train. Ornamentations point toward dispersal train axis, steep side of teeth face down ice. Line digitized using right-side rule. The legend symbol		606 Sand-wedge polygons 235 Sorted circles 259 Sorted nets 265 Sorted polygons				
features observation or stratigraphic section) 134 Stratigraphic section Miscellaneous features F_SAMPLE 6071075 Sample analysis results (dating) 607 *Sample analysis results 607 665 Dating: Cosmogenic 667 Dating: Fission track 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable Not applicable Not applicable 142	Sample location / dated Lab results / dating.Point of observation is a the midpoint of symbol. The dating information can appear	indicators (confidence defined; left side)			(confidence defined; left side) 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.042 *Dispersal train margin	confidence defined (left side margin)	le of 3.15.01.010 shows the 2 sides of the dispersal train. Ornamentations point toward dispersal train axis, steep	GEM_POLYS 4391002 Felsenmeer (all) 439 *Felsenmeer	265 Sorted polygons 279 Sorted stripes 283 *Unspecified 260 *Not applicable	293 *Not applicable	Not applicable Not applicable Not applicable 3.12.01.023 *Felsenmeer (all)		Felsenmeer / large
664 Dating: Optically stimulated luminescence 666 Dating: Paleomagnetic 662 Dating: Radiocarbon		in a table in the map margin. Sample ID annotation is added using sample name field with text symbol 2.03.01.010.	indicators (confidence defined; right side)			(confidence defined; right side)	confidence defined (right signature) of margin)	periglacial feature 3.15.01.010 shows the 2 sides of the dispersal train. Ornamentations point toward dispersal train axis, steep side of teeth face down ice.	GEM_POINTS; 5351002 Felsenmeer (all) 535 *Felsenmeer			Not applicable Not applicable Not applicable Not applicable 3.12.01.024 *Felsenmeer (all)		Felsenmeer / small; field Feature too small to draw to scale and/or field
663 Dating: Thermoluminescence 680 *Dating: Unspecified			Ice-movement indicators F_PFLOW 6001055 Till fabric measurement location (direction unknown or unspecified) 600 *Till fabric measurement location 131 *Till fabric location Ice-movement F_PFLOW 6001053 Till fabric measurement 6001053 Till fabric measurement 600 *Till fabric measurement 600 *Till fabric measurement 131 *Till fabric	304 *Unspecified		9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.026 Till fabric measurement location (direction unknown or unspecified) 9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.012 Till fabric measurement	ice-flow direction unknown	n, Field observation.Point of observation and rotation (0 = North) are based at midpoint of symbol.	F_ENVIRON GEM_POINTS 4221002 Palsa or lithalsa (all) 422 *Palsa or lithalsa (all)	a 170 Lithalsa	291 Active 300 *Not applicable 310 *Not applicable	Year of significant Not applicable Not applicable Not applicable Not applicable 3.12.01.024 Felsenmeer observation location (all)	۸ ۲	observation observation.Point of observation is based at midpoint of symbol. This symbol is not orientated. Palsa or lithalsa Feature too small to draw to scale.Point of observation is
Miscellaneous F_SAMPLE 5181002 Sample location (all) 518 *Sample location 260 *Not applicable 293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable Not applicable Not applicable Not applicable Not applicable 3.14.01.006 Sample location (all)	Sample location Point of observation is at the midpoint of symbol. Optional sample ID is added using the sample name field with text symbol 2.03.01.007.	Indicators Iocation (direction known) Iocation Ice-movement F_PFLOW 5991070 Striation measurement 599 *Striation measurement 171 Boulder-pavement	295 *Poorly defined 302 Unknown 310 *Not applicable		9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.009 Striation measuremen	t 3 Striation / field observation,	North) are based at midpoint of observation and rotation (0 – North) are based at midpoint of symbol. The arrow points down ice flow. Permafrost and periglacial feature Permafrost and periglacial feature	GEM_POINTS; 4241002 Pingo (all) 424 *Pingo	169 Palsa 283 *Unspecified	292 Inactive 297 *Unspecified 291 Active 300 *Not applicable 310 *Not applicable	change Year of significant Not applicable Not applicable Not applicable 3.12.01.003 *Pingo (all) 3.12.01.003 Pingo observation location	©	Pingo / small; field observation Feature too small to draw to scale and/or field observation.Point of observation is based at midpoint of
Miscellaneous features GEM_POLYS 5541002 Overlay polygon feature 554 *Overlay polygon feature to be defined (all) 554 *Overlay polygon feature to be defined feature to be defined (all) 260 *Not applicable 293 *Not applicable	Not applicable Not applicable Not applicable 2.01.01.009 *Overlay polygon feature to be defined (all)		Ice-movement F_PFLOW 5991069 Striation measurement 599 *Striation measurement 171 Boulder-pavement	295 *Poorly defined 299 *Known 310 *Not applicable	Not applicable 0 to 359 of	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.008 Striation measuremen	t Ø Striation / field observation	use generation field with text symbol 2.03.01.005. Permafrost and periglacial feature	GEM_POINTS; 1261002 Gelifluction-lobe or solifluction-lobe (all) 126 *Gelifluction-lobe	283 *Unspecified be or 128 Gelifluction lobe 127 Solifluction lobe	297 *Unspecified 291 Active 299 *Known 310 *Not applicable	Year of significant change 0 to 359 degrees 1 to 5 (1=oldest) Not applicable Not applicable 3.12.01.022 *Gelifluction-lobe or solifluction-lobe (all) 3.12.01.022 *Gelifluction-lobe or 3.12.01.022 *Gelifluction-lobe or	<u></u>	Symbol. Gelifluction or solifluction lobe / Feature too small to draw to scale and/or field observation. Point of observation and rotation (0 = North) direction unknown or known
Miscellaneous GEM_LINES 5551002 Line feature to be defined (all) 555 *Line feature to be defined (all) 555 *Line feature to be defined (all) 555 *Line feature to be defined be	ble Not applicable Not applicable Not applicable Not applicable	Feature to be defined / linear feature feature be defined / linear feature fea	indicators location (poorly defined; direction location striations			location (poorly defined; direction known)	poorly defined, ice-flow	North) are based at midpoint of symbol. The arrow points down ice flow. Label optional: use generation field with text symbol 2.03.01.005.		200 Unspecified		3.12.01.022 Gelifluction-lobe or solifluction-lobe observation location (all)	3	direction unknown or known are based at midpoint of symbol. The symbol points downslope. For unknown direction the symbol is pointing up.
Miscellaneous features GEM_POINTS 5561002 Point feature to be defined (all) 556 *Point feature to be defined (all) 556 *Point feature to be defined (all) 556 *Point feature to be defined with the second se	Not applicable Not applicable Not applicable 2.01.01.006 *Point feature to be defined (all) ?	Feature to be defined / point feature is not clear. This symbol will not be shown on the legend.	Ice-movement F_PFLOW 5991072 Striation measurement 599 *Striation measurement 171 Boulder-pavement		Not applicable 0 to 359 of	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.011 Striation measuremen		n, Field observation.Point of observation and rotation (0 =	GEM_POINTS; 4311002 Rock glacier (all) 431 *Rock glacier F_ENVIRON		291 Active299 *Known310 *Not applicable292 Inactive302 Unknown297 *Unspecified304 Unspecified	Year of significant of to 359 degrees Not applicable Not applicable 3.12.01.004 *Rock glacier (all) 3.12.01.004 Rock-glacier observation location (all)	A	Rock glacier / small; field Feature too small to draw to scale and/or field observation, direction observation.Point of observation and rotation (0 = North) unknown; direction known are based at midpoint of symbol. The symbol points
Miscellaneous featuresF_STATION5571002 Field observation feature to be defined (all)557 *Field observation feature to be defined260 *Not applicable293 *Not applicable300 *Not applicable310 *Not applicable	Not applicable Not applicable Not applicable Not applicable 2.01.01.007 Field observation feature to be defined (all) 7	Feature to be defined / field observation Begend. Feature to be defined / field feature is not clear. This symbol will not be shown on the legend.	Image: Inspecified; direction unknown or unspecified) 584 Grooves 277 *Striations Ice-movement F_PFLOW 5991071 Striation measurement 599 *Striation measurement 171 Boulder-pavement	298 Well defined 304 *Unspecified 297 *Unspecified 299 *Known 310 *Not applicable	Not applicable 0 to 250 c	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.010 Striation measuremen	t Striation / field observation	tion North) are based at midpoint of symbol. Label optional: use generation field with text symbol 2.03.01.005.					P	downhill. For unknown direction the symbol is pointing up.
			indicators location (well defined or location (well defined or unspecified; direction known) 581 Chattermarks 584 Grooves 210 Mini crag-and-tail	298 Well defined		location (well defined or unspecifie direction known)	ed; 🎢 well defined, ice-flow direct	North) are based at midpoint of symbol. The arrow points down ice flow. Label optional: use generation field with text symbol 2.03.01.005.	GEM_POINTS; 4321002 Rock pingo (all) 432 *Rock pingo F_ENVIRON 1441002 Rock-blister observation 144 *Rock-blister			Not applicable Not applicable Not applicable Not applicable Not applicable 3.12.01.005 *Rock pingo (all) Not applicable Not applicable Not applicable Not applicable Not applicable 3.12.01.005 *Rock pingo (all) Not applicable Not applicable Not applicable Not applicable Not applicable 3.12.01.012 Rock-bitser observation	۵	Rock pingo / small; field Feature too small to draw to scale and/or field observation observation.Point of observation is based at midpoint of symbol. This symbol is not orientated. Rock blister / field observation Field observation.Point of observation is based at
			Ice-movement F_PFLOW 6091070 Striation measurement 609 *Striation measurement 171 Boulder-pavement		Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.036 Striation measuremen		periglacial feature pacy Field observation compiled from legacy data.Point of Permafrost and	Instant Instant Instant F_ENVIRON 1451002 Rock-burst observation 145 *Rock-burst ob	1		Not applicable Not app	• · · · · · · · · · · · · · · · · · · ·	midpoint of symbol. This symbol is not orientated. Rock burst / field observation Field observation.Point of observation is based at
			indicators Iocation from legacy data (poorly defined; direction unknown or unspecified) Ice-movement F_PFLOW 6091069 Striation measurement 609 *Striation measurement 171 Boulder-pavement	304 *Unspecified		9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.035 Striation measuremen	data / poorly defined, ice-flu direction unknown	ow observation and rotation (0 = North) are based at periglacial feature	GEM_POINTS; 1891002 Ground ice (all) location	142 Glacier Ice 141 Segregated ice	293 *Not applicable 300 *Not applicable 310 *Not applicable	Not applicable State	 ©	Ground ice / small; field observation Ground ice.Point of observation is based at midpoint of symbol. This symbol is not orientated.
			indicators location from legacy data (poorly location from legacy data striations defined; direction known) 581 Chattermarks 584 Grooves	310 "Not applicable	ivot applicable 0 to 359 c	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.035 Striation measuremen location from legacy data (poorly defined; direction known)	data / poorly defined, ice-fit	low observation and rotation (0 = North) are based at midpoint of symbol. The arrow points down ice flow. Label optional: use generation field with text symbol	GEM_LINES 5371002 Pre-existing coastline (all) 537 *Pre-existing of	283 *Unspecified	293 *Not applicable 300 *Not applicable 308 Lacustrine 287 *Defined 309 Marine 314 *Unspecified	location (all)		Pre-existing coastline The nature of the pre-existing coastline (pre- development, natural coastal migration, or other) will
			Ice-movement F_PFLOW 6091072 Striation measurement 609 *Striation measurement 171 Boulder-pavement	297 *Unspecified 302 Unknown 310 *Not applicable	Not applicable 0 to 350 c	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.038 Striation measuremen		2.03.01.005.		276 Strandline 282 Tombolo 283 *Unspecified				appear in the remark field and will be shown in the map legend.
			indicators location from legacy data (well defined or unspecified; direction unknown or unspecified) 277 *Striations	298 Well defined 304 *Unspecified		location from legacy data (well def or unspecified; direction unknown unspecified)	ined or data / well defined, ice-flow direction unknown	 v observation and rotation (0 = North) are based at midpoint of symbol. Label optional: use generation field with text symbol 2.03.01.005. 	ын_LINES 5081002 Terrace scarp (all) 508 *Terrace scarp	260 *Not applicable	293 *Not applicable 299 *Known 305 Fluvial 287 *Defined 116 Glaciofluvial 306 Glaciolacustrine 307 Glaciomarine	315 *Accurate Not applicable Not applicable e.g. maximum 3.13.01.004 *Terrace scarp (all) level of X Lake or Sea		Terrace scarp Line digitized using right-side rule. Ornamentations point offshore or downslope.
			Ice-movement indicators F_PFLOW 6091071 Striation measurement location from legacy data (well defined or unspecified; direction known) 609 *Striation measurement location from legacy data striations 581 Chattermarks 584 Grooves		Not applicable 0 to 359 o	9 degrees 1 to 5 (1=oldest) e.g. X Glaciation 3.08.01.037 Striation measuremen location from legacy data (well def or unspecified; direction known)	ined // data / well defined, ice-flow	 Field observation compiled from legacy data.Point of observation and rotation (0 = North) are based at midpoint of symbol. The arrow points down ice flow. Label optional: use generation field with text symbol 	GEM LINES ACCORD D. L. L. L.	102.5	308 Lacustrine 309 Marine 314 *Unspecified	315 *Accurate Not applicable vice vice		Rock crock
			Ice-movement F_PFLOW				Crossed striations		GEM_LINES 4651002 Beach crest (all) 465 *Beach crest	233 Berm 274 Shoreline 276 Strandline	293 *Not applicable 300 *Not applicable 306 Glaciolacustrine 307 Glaciomarine 308 Lacustrine 309 Marine	315 *Accurate Not applicable Not applicable e.g. maximum 3.13.01.002 *Beach crest (all) level of X Lake or Sea	5555	Beach crests Multiple lines must be digitized individually. The legend symbol 3.15.01.009 is a set of 3 beach crests.
			indicators				'\ [∞]	indicate relative age, 1 being the oldest.	GEM_POINTS 4121055 Delta (direction unknown 412 *Delta or unspecified)	282 Tombolo 283 *Unspecified 260 *Not applicable	293 *Not applicable 302 Unknown 306 Glaciolacustrine 304 *Unspecified 307 Glaciomarine	Not applicable Not applicable Not applicable Not applicable e.g. maximum 3.13.01.010 *Delta (direction unknown level of X Lake or or unspecified)	Ŷ	Delta / paleocurrent direction Feature too small to draw to scale.Point of observation is based at midpoint of symbol. This symbol is not
								Charaling foot	GEM_POINTS 4121053 Delta (direction known) 412 *Delta	260 *Not applicable	293 *Not applicable 299 *Known 306 Glaciolacustrine	Not applicable 0 to 359 degrees Not applicable e.g. maximum 3.13.01.001 *Delta (direction known)		Oelta / paleocurrent direction Feature too small to draw to scale.Point of observation
									GEM_POINTS 4121053 Delta (direction known) 412 *Delta		293 *Not applicable 299 *Known 306 Glaciolacustrine 307 Glaciomarine 308 Lacustrine 309 Marine 314 *Unspecified	Not applicable 0 to 359 degrees Not applicable e.g. maximum 3.13.01.001 *Delta (direction known) level of X Lake or Sea		Delta / paleocurrent direction known Triangle opens in direction of progradation.
** Data recorded in the geodatabase (e.g. "297 *Unspecified"; where 297 = code value, * = default value; Unsprecified = code description)									!				. <u>.</u>	

** Data recorded in the geodatabase (e.g. "297 *Unspecified"; where 297 = code value, * = default value; Unsprecified = code description) ~ Mandatory field

Surficial Data Model version 2.4.0 (draft 2019-04-29)