Superficial geology

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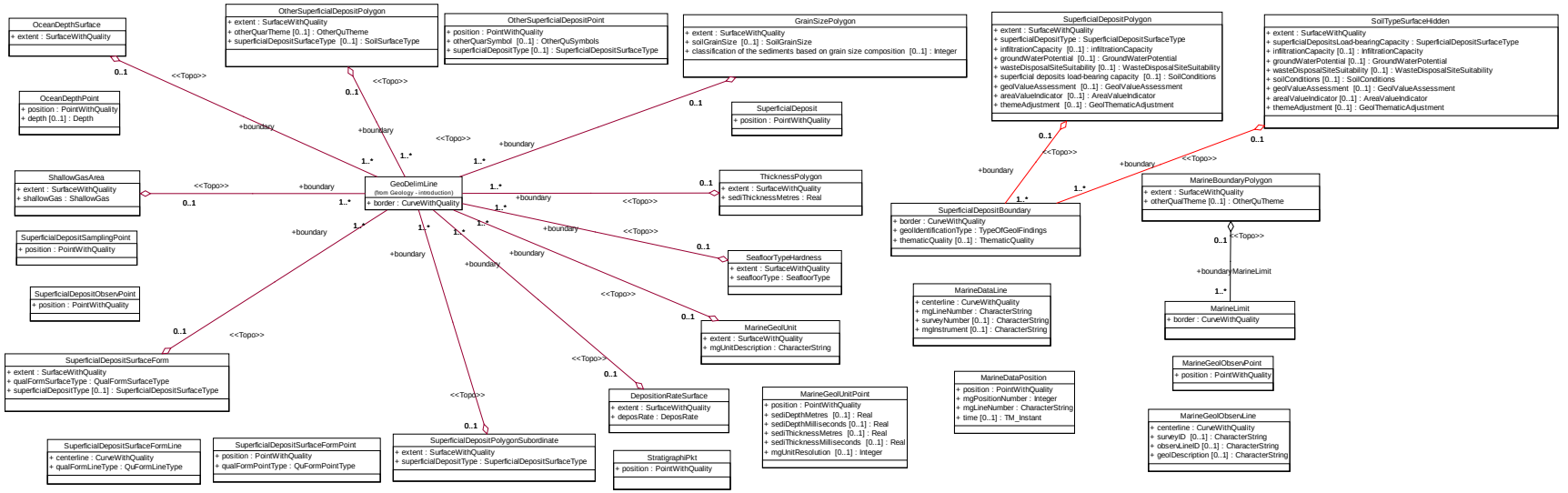
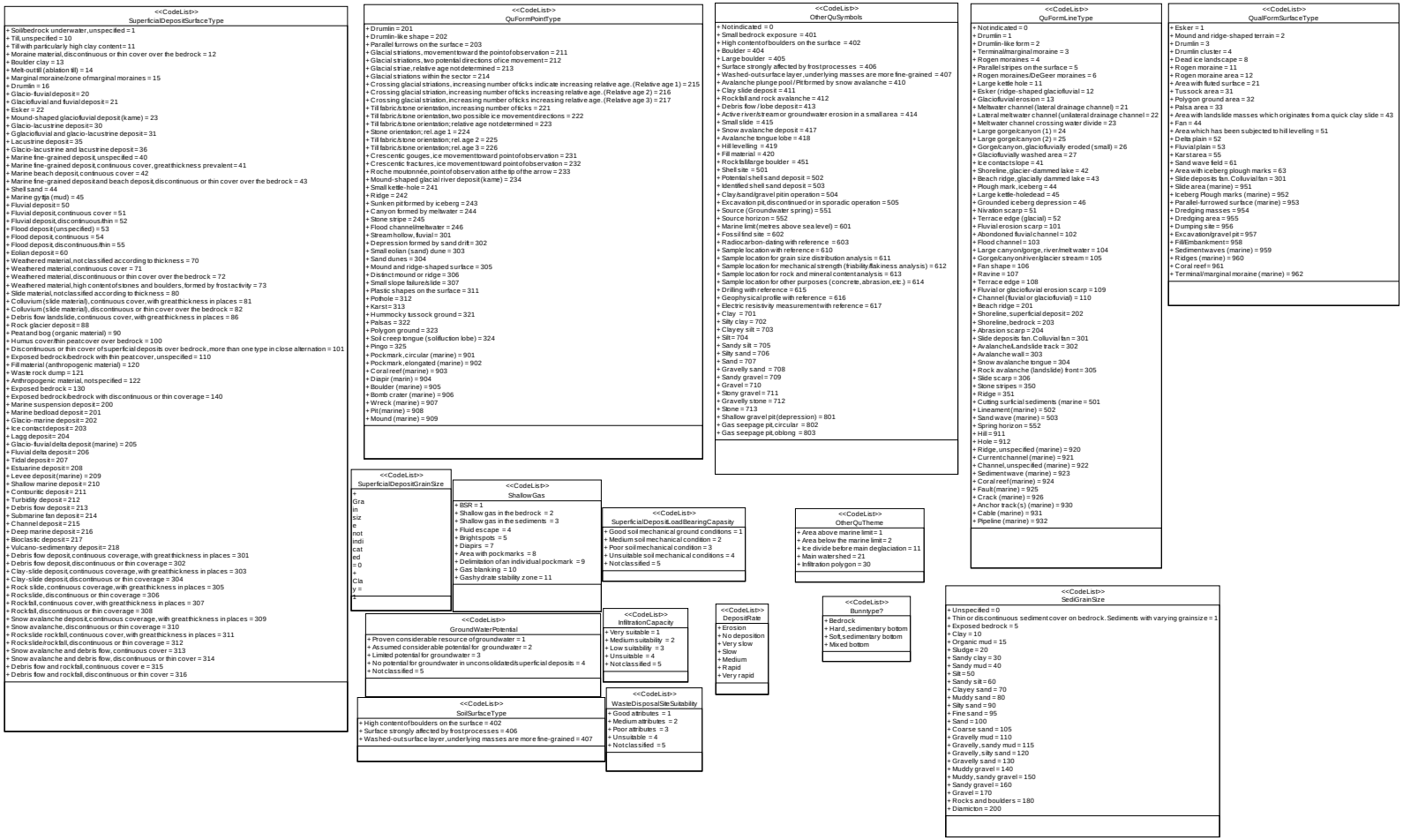
Table of contents

1.1 Application schema




<<CodeList>>
SuperficialDepositSurfaceType
+ Soil/bedrock underwater, unspecified = 1
+ Till, unspecified = 10
+ Till with particularly high clay content = 11
+ Moraine material, discontinuous or thin cover over the bedrock = 12
+ Boulder clay = 13
+ Melt-out till (ablation till) = 14
+ Marginal moraine/zone of marginal moraines = 15
+ Drumlin = 16
+ Glacio- fluvial deposit = 20
+ Glaciofluvial and fluvial deposit = 21
+ Esker = 22
+ Mound-shaped glaciofluvial deposit (kame) = 23
+ Glacio-lacustrine deposit= 30
+ Glaciofluvial and glacio-lacustrine deposit = 31
+ Lacustrine deposit = 35
+ Glacio-lacustrine and lacustrine deposit = 36
+ Marine fine-grained deposit, unspecified = 40
+ Marine fine-grained deposit, continuous cover, great thickness prevalent = 41
+ Marine beach deposit, continuous cover = 42
+ Marine fine-grained deposit and beach deposit, discontinuous or thin cover over the bedrock = 43
+ Shell sand = 44
+ Marine gyttja (mud) = 45
+ Fluvial deposit = 50
+ Fluvial deposit, continuous cover = 51
+ Fluvial deposit, discontinuous,thin = 52
+ Flood deposit (unspecified) = 53
+ Flood deposit, continuous = 54
+ Flood deposit, discontinuous,thin = 55
+ Eolian deposit = 60
+ Weathered material, not classified according to thickness = 70
+ Weathered material, continuous cover = 71
+ Weathered material, discontinuous or thin cover over the bedrock = 72
+ Weathered material, high content of stones and boulders, formed by frost activity = 73
+ Slide material, not classified according to thickness = 80
+ Colluvium (slide material), continuous cover, with great thickness in places = 81
+ Colluvium (slide material), discontinuous or thin cover over the bedrock = 82
+ Debris flow landslide, continuous cover, with great thickness in places = 86
+ Rock glacier deposit = 88
+ Peat and bog (organic material) = 90
+ Humus cover/thin peat cover over bedrock = 100
+ Discontinuous or thin cover of superficial deposits over bedrock, more than one type in close alternation = 101
+ Exposed bedrock:bedrock with thin peat cover, unspecified = 110
+ Fill material (anthropogenic material) = 120
+ Waste rock dump = 121
+ Anthropogenic material, not specified = 122
+ Exposed bedrock = 130
+ Exposed bedrock:bedrock with discontinuous or thin coverage = 140
+ Marine suspension deposit = 200
+ Marine bedload deposit = 201
+ Glacio- marine deposit = 202
+ Ice contact deposit = 203
+ Lagg deposit = 204
+ Glacio- fluvial delta deposit (marine) = 205
+ Fluvial delta deposit = 206
+ Tidal deposit = 207
+ Estuarine deposit = 208
+ Levee deposit (marine) = 209
+ Shallow marine deposit = 210
+ Contourite deposit = 211
+ Turbidity deposit = 212
+ Debris flow deposit = 213
+ Submarine fan deposit = 214
+ Channel deposit = 215
+ Deep marine deposit = 216
+ Bioclastic deposit = 217
+ Vulcano- sedimentary deposit = 218
+ Debris flow deposit, continuous coverage, with great thickness in places = 301
+ Debris flow deposit, discontinuous or thin coverage = 302
+ Clay- slide deposit, continuous coverage, with great thickness in places = 303
+ Clay- slide deposit, discontinuous or thin coverage = 304
+ Rock slide, continuous coverage, with great thickness in places = 305
+ Rockslide, discontinuous or thin coverage = 306
+ Rockfall, continuous cover, with great thickness in places = 307
+ Rockfall, discontinuous or thin coverage = 308
+ Snow avalanche deposit, continuous coverage, with great thickness in places = 309
+ Snow avalanche, discontinuous or thin coverage = 310
+ Rockslide rockfall, continuous cover, with great thickness in places = 311
+ Rockslide/rockfall, discontinuous or thin coverage = 312
+ Snow avalanche and debris flow, continuous cover = 313
+ Snow avalanche and debris flow, discontinuous or thin cover = 314
+ Debris flow and rockfall, continuous cover e = 315
+ Debris flow and rockfall, discontinuous or thin cover = 316
<<CodeList>>
QuFormPointType
+ Drumlin = 201
+ Drumlin-like shape = 202
+ Parallel furrows on the surface = 203
+ Glacial striations, movement toward the point of observation = 211
+ Glacial striations, two potential directions of ice movement = 212
+ Glacial striae, relative age not determined = 213
+ Glacial striations within the sector = 214
+ Crossing glacial striations, increasing number of ticks indicate increasing relative age. (Relative age 1) = 215
+ Crossing glacial striation, increasing number of ticks increasing relative age. (Relative age 2) = 216
+ Crossing glacial striation, increasing number of ticks increasing relative age. (Relative age 3) = 217
+ Till fabric/stone orientation, increasing number of ticks = 221
+ Till fabric/stone orientation, two possible ice movement directions = 222
+ Till fabric/stone orientation; relative age not determined = 223
+ Stone orientation; rel. age 1 = 224
+ Till fabric/stone orientation; rel. age 2 = 225
+ Till fabric/stone orientation; rel. age 3 = 226
+ Crescentic gouges, ice movement toward point of observation = 231
+ Crescentic fractures, ice movement toward point of observation = 232
+ Roche moutonnée, point of observation at the tip of the arrow = 233
+ Mound- shaped glacial river deposit (kame) = 234
+ Small kettle- hole = 241
+ Ridge = 242
+ Sunken pit formed by iceberg = 243
+ Canyon formed by meltwater = 244
+ Stone stripe = 245
+ Flood channel/meltwater = 246
+ Stream hollow, fluvial = 301
+ Depression formed by sand drift = 302
+ Small eolian (sand) dune = 303
+ Sand dunes = 304
+ Mound and ridge- shaped surface = 305
+ Distinct mound or ridge = 306
+ Small slope failure/slide = 307
+ Plastic shapes on the surface = 311
+ Pothole = 312
+ Karst = 313
+ Hummocky tussock ground = 321
+ Palsas = 322
+ Polygon ground = 323
+ Soil creep tongue (solifluction lobe) = 324
+ Pingo = 325
+ Pockmark, circular (marine) = 901
+ Pockmark, elongated (marine) = 902
+ Coral reef (marine) = 903
+ Diapir (marin) = 904
+ Boulder (marine) = 905
+ Bomb crater (marine) = 906
+ Wreck (marine) = 907
+ Pit (marine) = 908
+ Mound (marine) = 909
<<CodeList>>
OtherQuSymbols
+ Not indicated = 0
+ Small bedrock exposure = 401
+ High content of boulders on the surface = 402
+ Boulder = 404
+ Large boulder = 405
+ Surface strongly affected by frost processes = 406
+ Washed- out surface layer, underlying masses are more fine- grained = 407
+ Avalanche plunge pool / Piformed by snow avalanche = 410
+ Clay slide deposit = 411
+ Rockfall and rock avalanche = 412
+ Debris flow / lobe deposit = 413
+ Active river/stream or groundwater erosion in a small area = 414
+ Small slide = 415
+ Snow avalanche deposit = 417
+ Avalanche tongue lobe = 418
+ Hill levelling = 419
+ Fill material = 420
+ Rock fall/large boulder = 451
+ Shell site = 501
+ Potential shell sand deposit = 502
+ Identified shell sand deposit = 503
+ Clay/sand/gravel pit/in operation = 504
+ Excavation pit, discontinued or in sporadic operation = 505
+ Source (Groundwater spring) = 551
+ Source horizon = 552
+ Marine limit (metres above sea level) = 601
+ Fossil find site = 602
+ Radiocarbon- dating with reference = 603
+ Sample location with reference = 610
+ Sample location for grain size distribution analysis = 611
+ Sample location for mechanical strength (friability/brakiness analysis) = 612
+ Sample location for rock and mineral content analysis = 613
+ Sample location for other purposes (concrete, abrasion, etc.) = 614
+ Drilling with reference = 615
+ Geophysical profile with reference = 616
+ Electric resistivity measurement with reference = 617
+ Clay = 701
+ Silty clay = 702
+ Clayey silt = 703
+ Silt = 704
+ Sandy silt = 705
+ Silty sand = 706
+ Sand = 707
+ Gravelly sand = 708
+ Sandy gravel = 709
+ Gravel = 710
+ Stony gravel = 711
+ Gravelly stone = 712
+ Stone = 713
+ Shallow gravel pit (depression) = 801
+ Gas seepage pit, circular = 802
+ Gas seepage pit, oblong = 803
<<CodeList>>
QuFormLineType
+ Not indicated = 0
+ Drumlin = 1
+ Drumlin- like form = 2
+ Terminal/marginal moraine = 3
+ Rogen moraines = 4
+ Parallel stripes on the surface = 5
+ Rogen moraines/DeGeer moraines = 6
+ Large kettle hole = 11
+ Esker (ridge- shaped glaciofluvial = 12
+ Glaciofluvial erosion = 13
+ Meltwater channel (lateral drainage channel) = 21
+ Lateral meltwater channel (unilateral drainage channel = 22
+ Meltwater channel crossing water divide = 23
+ Large gorge/canyon (1) = 24
+ Large gorge/canyon (2) = 25
+ Gorge/canyon, glaciofluvially eroded (small) = 26
+ Glaciofluvially washed area = 27
+ Ice contact slope = 41
+ Shoreline, glacier- dammed lake = 42
+ Beach ridge, glacially dammed lake = 43
+ Plough mark, iceberg = 44
+ Large kettle- hole/dead = 45
+ Grounded iceberg depression = 46
+ Nivation scarp = 51
+ Terrace edge (glacial) = 52
+ Fluvial erosion scarp = 101
+ Abandoned fluvial channel = 102
+ Flood channel = 103
+ Large canyon/gorge, river/meltwater = 104
+ Gorge/canyon/river/glacier stream = 105
+ Fan shape = 106
+ Ravine = 107
+ Terrace edge = 108
+ Fluvial or glaciofluvial erosion scarp = 109
+ Channel (fluvial or glaciofluvial) = 110
+ Beach ridge = 201
+ Shoreline, superficial deposit = 202
+ Shoreline, bedrock = 203
+ Abrasion scarp = 204
+ Slide deposits fan, Colluvial fan = 301
+ Avalanche/Landslide track = 302
+ Avalanche wall = 303
+ Snow avalanche tongue = 304
+ Rock avalanche (landslide) front = 305
+ Slide scarp = 306
+ Stone stripes = 350
+ Ridge = 351
+ Cutting surficial sediments (marine = 501
+ Lineament (marine) = 502
+ Sand wave (marine) = 503
+ Spring horizon = 552
+ Hill = 911
+ Hole = 912
+ Ridge, unspecified (marine) = 920
+ Current channel (marine) = 921
+ Channel, unspecified (marine) = 922
+ Sediment wave (marine) = 923
+ Coral reef (marine) = 924
+ Fault (marine) = 925
+ Crack (marine) = 926
+ Anchor track (s) (marine) = 930
+ Cable (marine) = 931
+ Pipeline (marine) = 932
<<CodeList>>
QualFormSurfaceType
+ Esker = 1
+ Mound and ridge- shaped terrain = 2
+ Drumlin = 3
+ Drumlin cluster = 4
+ Dead ice landscape = 8
+ Rogen moraine = 11
+ Rogen moraine area = 12
+ Area with fluted surface = 21
+ Tussock area = 31
+ Polygon ground area = 32
+ Palsa area = 33
+ Area with landslide masses which originates from a quick clay slide = 43
+ Fan = 44
+ Area which has been subjected to hill levelling = 51
+ Delta plain = 52
+ Fluvial plain = 53
+ Karst area = 55
+ Sand wave field = 61
+ Area with iceberg plough marks = 63
+ Slide deposits fan, Colluvial fan = 301
+ Slide area (marine) = 951
+ Iceberg Plough marks (marine) = 952
+ Parallel- furrowed surface (marine) = 953
+ Dredging masses = 954
+ Dredging area = 955
+ Dumping site = 956
+ Excavation/gravel pit = 957
+ Fill/Embankment = 958
+ Sediment waves (marine) = 959
+ Ridges (marine) = 960
+ Coral reef = 961
+ Terminal/marginal moraine (marine) = 962
<<CodeList>>
SuperficialDepositGrainSize
+ Grain size not indicated = 0
<<CodeList>>
ShallowGas
+ BSR = 1
+ Shallow gas in the bedrock = 2
+ Shallow gas in the sediments = 3
+ Fluid escape = 4
+ Bright spots = 5
+ Diapirs = 7
+ Area with pockmarks = 8
+ Delimitation of an individual pockmark = 9
+ Gas blanking = 10
+ Gashydrate stability zone = 11
<<CodeList>>
SuperficialDepositLoadBearingCapasity
+ Good soil mechanical ground conditions = 1
+ Medium soil mechanical condition = 2
+ Poor soil mechanical condition = 3
+ Unsuitable soil mechanical conditions = 4
+ Not classified = 5
<<CodeList>>
OtherQuTheme
+ Area above marine limit = 1
+ Area below the marine limit = 2
+ Ice divide before e main deglaciation = 11
+ Main watershed = 21
+ Infiltration polygon = 30
<<CodeList>>
SediGrainSize
+ Unspecified = 0
+ Thin or discontinuous sediment cover on bedrock. Sediments with varying grainsize = 1
+ Exposed bedrock = 5
+ Clay = 10
+ Organic mud = 15
+ Sludge = 20
+ Sandy clay = 30
+ Sandy mud = 40
+ Silt = 50
+ Sandy silt = 60
+ Clayey sand = 70
+ Muddy sand = 80
+ Silty sand = 90
+ Fine sand = 95
+ Sand = 100
+ Coarse sand = 105
+ Gravelly mud = 110
+ Gravelly, sandy mud = 115
+ Gravelly, silty sand = 120
+ Gravelly sand = 130
+ Muddy gravel = 140
+ Muddy, sandy gravel = 150
+ Sandy gravel = 160
+ Gravel = 170
+ Rocks and boulders = 180
+ Damicton = 200
<<CodeList>>
GroundWaterPotential
+ Proven considerable resource of groundwater = 1
+ Assumed considerable potential for groundwater = 2
+ Limited potential for groundwater = 3
+ No potential for groundwater in unconsolidated/superficial deposits = 4
+ Not classified = 5
<<CodeList>>
InfiltrationCapacity
+ Very suitable = 1
+ Medium suitability = 2
+ Low suitability = 3
+ Unsuitable = 4
+ Not classified = 5
<<CodeList>>
DepositRate
+ Erosion
+ No deposition
+ Very slow
+ Slow
+ Medium
+ Rapid
+ Very rapid
<<CodeList>>
Bunntype?
+ Bedrock
+ Hard, sedimentary bottom
+ Soft, sedimentary bottom
+ Mixed bottom
<<CodeList>>
SoilSurfaceType
+ High content of boulders on the surface = 402
+ Surface strongly affected by frost processes = 406
+ Washed- out surface layer, underlying masses are more fine- grained = 407
<<CodeList>>
WasteDisposalSiteSuitability
+ Good attributes = 1
+ Medium attributes = 2
+ Poor attributes = 3
+ Unsuitable = 4
+ Not classified = 5

1.2 Description

1.2.1 OtherSuperficialDepositPolygon

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
1	Class OtherSuperficialDepositPolygon	areas related to quaternary geology, but not differentiated by a specified name of object type				
1.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
1.2	otherQuarTheme	other quaternary geological themes For example: Themes, as for the regions/areas above/below the marine boundary, ice divide, main watershed divide, etc. Developed as required.	0	1	OtherQuTheme	
1.3	superficialDepositSurfaceType	the soil surface is affected by secondary processes, for example wind and weather	0	1	SoilSurfaceType	
1.4	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.2 OtherSuperficialDepositPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
2	Class OtherSuperficialDepositPoint	location for indication of superficial depositsoil type, etc., using a symbol where the extent is too small to be registered as a polygon				
2.1	position	location where the object exists	1	1	PointWithQuality	
2.2	otherQuarSymbol	quaternary geological symbols which are not elements of form or line Note: In the statement of grain size, the predominant fraction is indicated as a noun, cf. table in chapter on definitions and abbreviations. If other fractions comprise more than 10%, these are mentioned in adjective form, e.g. sandy gravel (gravel dominate, sand	0	1	OtherQuSymbols	

		amounts to more than 10%, other fractions individually amounts to less than 10%). For unsorted deposits (e.g. till) the grain size is not spesified				
2.3	superficialDepositType		0	1	SuperficialDepositSurfaceType	

1.2.3 SuperficialDepositSurfaceFormLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
3	Class SuperficialDepositSurfaceFormLine	observert overflateform med lineær utstrekning Eksempel: Terrassekant, vifte, haug, rygg				
3.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
3.2	qualFormLineType	quaternary geological linear elements of form	1	1	QuFormLineType	

1.2.4 SuperficialDepositSurfaceFormPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
4	Class SuperficialDepositSurfaceFormPoint	point element of surface form				
4.1	position	location where the object exists	1	1	PointWithQuality	
4.2	qualFormPointType	quaternary geological point elements of form	1	1	QuFormPointType	

1.2.5 SoilTypeSurfaceHidden

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
5	Class SoilTypeSurfaceHidden	polygon which consists of one specifiedsoil type of deposit, but not exposed on the surface				
5.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
5.2	superficialDepositsLoad-bearingCapacity	the attributes of the superficial deposits with respect to load-bearing capacity	1	1	SuperficialDepositSurfaceType	
5.3	infiltrationCapacity	the attributes of the superficial deposits in relation to infiltrating and	0	1	InfiltrationCapacity	

		cleansing waste water				
5.4	groundWaterPotential	the potential of the superficial deposits to contain groundwater resources	0	1	GroundWaterPotential	
5.5	wasteDisposalSiteSuitability	the superficial deposits classified according to how suitable they are as a sealing layer under a filling Note: A waste disposal site	0	1	WasteDisposalSiteSuitability	
5.6	soilConditions	the attributes of the soil with respect to load-bearing capacity	0	1	SoilConditions	
5.7	geolValueAssessment	how important a geological resource or registration is with a view to potential economic utilization now or in the future	0	1	GeolValueAssessment	
5.8	arealValueIndicator	the soils classified according to how suitable they are as a sealing layer under a filling Note: A waste disposal site	0	1	AreaValueIndicator	
5.9	themeAdjustment		0	1	GeolThematicAdjustment	
5.10	Role boundary		1	N	SuperficialDepositBoundary	Aggregration

1.2.6 SuperficialDepositBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
6	Class SuperficialDepositBoundary	delimitation of various types of superficial deposits				
6.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
6.2	geolIdentificationType	hvor sikkert et geologisk objekt er påvist i terrenget, eller hvilken metode som ligger til grunn for å påvisningen/registreringen ..	1	1	TypeOfGeolFindings	
6.3	thematicQuality	kvaliteten på registrering/kartlegging av tema sett i forhold til faktiske forhold i naturen. Ulik tematisk oppløsning/generaliseringsgrad kan være styrt av temaets samfunnsmessige betydning, områdets	0	1	ThematicQuality	

		arealmessige betydning eller prosjektets økonomi. Med nøyaktighet i denne sammenheng menes hvor korrekt registreringen avspeiler objektets posisjon i naturen og presisjonen i valg av tematisk innhold i forhold til generalisering Merknad: Tematisk oppløsning/generaliserings grad kan være styrt av temaets samfunnsmessige betydning, områdets arealmessige betydning eller prosjektets målsetning				
6.4	Role (unnamed) SoilTypeSurface Hidden		0	1	SoilTypeSurfaceHidden	
6.5	Role (unnamed) SuperficialDepositPolygon		0	1	SuperficialDepositPolygon	

1.2.7 SuperficialDeposit

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
7	Class SuperficialDeposit	site where drilling has been carried out in superficial deposits				
7.1	position	location where the object exists	1	1	PointWithQuality	

1.2.8 MarineLimit

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
8	Class MarineLimit	highest sea level after the latest ice age				
8.1	border	course following the transition between different real world phenomena	1	1	CurveWithQuality	
8.2	Role (unnamed) MarineBoundaryPolygon		0	1	MarineBoundaryPolygon	

1.2.9 MarineBoundaryPolygon

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
9	Class MarineBoundaryPolygon	the areas below and above the marine boundary, respectively				
9.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
9.2	otherQualTheme	other quaternary geological themes	0	1	OtherQuTheme	
9.3	Role boundaryMarineLimit		1	N	MarineLimit	Aggregration

1.2.10 ThicknessPolygon

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
10	Class ThicknessPolygon	area which represents the lthickness of various sediment layers (stratigraphic units)				
10.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
10.2	sediThicknessMetres		1	1	Real	
10.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.11 StratigraphiPkt

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
11	Class StratigraphiPkt					
11.1	position	location where the object exists	1	1	PointWithQuality	

1.2.12 SuperficialDepositPolygon

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
12	Class SuperficialDepositPolygon	area consisting of one type of superficial deposit				
12.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
12.2	superficialDepositType	quaternary geological types of superficial deposit	1	1	SuperficialDepositSurfaceType	
12.3	infiltrationCapacity	the attributes of the superficial deposits in relation to infiltrating and cleansing waste water	0	1	infiltrationCapacity	
12.	groundWaterPot	the potential of the	0	1	GroundWaterP	

4	ential	superficial deposits to contain groundwater resources			otential	
12.5	wasteDisposalSiteSuitability	the superficial deposits classified according to how suitable they are as a sealing layer under a filling	0	1	WasteDisposalSiteSuitability	
12.6	superficialdepositsload-bearingcapacity	the attributes of the superficial deposits with respect to load-bearing capacity	0	1	SoilConditions	
12.7	geolValueAssessment	how important a geological resource or registration is with a view to potential economic utilization now or in the future	0	1	GeolValueAssessment	
12.8	areaValueIndicator	indication which shows to what extent one may expect objections if changes to the land-use are made	0	1	AreaValueIndicator	
12.9	themeAdjustment	justering/endring av en automatisk klassifikasjon av geologisk tema	0	1	GeolThematicAdjustment	
12.10	Role boundary		1	N	SuperficialDepositBoundary	Aggregration

1.2.13 SuperficialDepositObservPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
13	Class SuperficialDepositObservPoint	site for observation, measurement, etc. concerning the superficial deposits				
13.1	position	location where the object exists	1	1	PointWithQuality	

1.2.14 DepositionRateSurface

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
14	Class DepositionRateSurface	area with indicated sedimentation rate				
14.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
14.2	deposRate	rate of deposition of sediments in an area	1	1	DeposRate	
14.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.15 SeafloorTypeHardness

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
15	Class SeafloorTypeHardness	area classified according to seafloor hardness				
15.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
15.2	seafloorType	seafloor type with regard to hardness	1	1	SeafloorType	
15.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.16 ShallowGasArea

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
16	Class ShallowGasArea	area with phenomena which indicate natural seepage of shallow gas or fluids from sediments or bedrock				
16.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
16.2	shallowGas	shallow gas-related phenomena in sediments and bedrock	1	1	ShallowGas	
16.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.17 GrainSizePolygon

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
17	Class GrainSizePolygon	area where sediments have the same grain size				
17.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
17.2	soilGrainSize	classification of the soils based on grain size composition. Grain size distribution is based on measured percentage shares of different grain size fractions	0	1	SoilGrainSize	
17.3	classificationofthesedimentsbasedongrainsizecomposition	classification of the sediments based on grain size composition	0	1	Integer	
17.4	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.18 SuperficialDepositSurfaceForm

No	Name/	Description	Obligation/	Maximum	Type	Constraint

	Role name		Condition	Occurrence		
18	Class SuperficialDepositSurfaceForm	polygon with elements of form on the surface				
18.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
18.2	qualFormSurfaceType	area with specific elements of form	1	1	QualFormSurfaceType	
18.3	superficialDepositType	quaternary geological types of superficial deposits	0	1	SuperficialDepositSurfaceType	
18.4	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.19 MarineGeolUnit

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
19	Class MarineGeolUnit	marine geologically interpreted 3D body, where the external delimitation in 2D indicates where there are measurement values/points for the marine geological unit				
19.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
19.2	mgUnitDescription	textual description of marine geological unit	1	1	CharacterString	
19.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.20 OceanDepthSurface

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
20	Class OceanDepthSurface	ocean depth in 3D, where the external delimitation in 2D indicates where measurement values/ocean depth points are found				
20.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
20.2	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.21 SuperficialDepositPolygonSubordinate

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
21	Class	area of subordinate				

	SuperficialDepositPolygonSubordinate	(secondary) soil type				
21.1	extent	area over which an object extends	1	1	SurfaceWithQuality	
21.2	superficialDepositType	quaternary geological types of superficial deposits	1	1	SuperficialDepositSurfaceType	
21.3	Role boundary		1	N	GeoDelimLine	Aggregration

1.2.22 SuperficialDepositSamplingPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
22	Class SuperficialDepositSamplingPoint	location at which a soil sample has been taken				
22.1	position	location where the object exists	1	1	PointWithQuality	

1.2.23 MarineDataLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
23	Class MarineDataLine	madeline/transect along which marine geological measurements have been taken				
23.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
23.2	mgLineNumber	number of marine geological line	1	1	CharacterString	
23.3	surveyNumber	number of marine geological ??mission/voyage survey number	0	1	CharacterString	
23.4	mgInstrument	type of instrument or equipment which was used collecting data	0	1	CharacterString	

1.2.24 MarineDataPosition

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
24	Class MarineDataPosition	position of a point on a marine geological data line				
24.1	position	location where the object exists	1	1	PointWithQuality	
24.2	mgPositionNumber	number of marine geological position	1	1	Integer	
24.3	mgLineNumber	line number of data	1	1	CharacterString	

24.4	time		0	1	TM_Instant	

1.2.25 MarineGeolUnitPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
25	Class MarineGeolUnitPoint	position of a point with measurement value(s) within a marine geological unit				
25.1	position	location where the object exists	1	1	PointWithQuality	
25.2	sediDepthMetres	depth to a specific sediment surface or down to solid bedrock (TWT)	0	1	Real	
25.3	sediDepthMilliseconds	thicknesses (of layers) in a marine geological unit	0	1	Real	
25.4	sediThicknessMetres	sediment thickness in metres	0	1	Real	
25.5	sediThicknessMilliseconds	thickness of geological unit (in a particular point of the unit) in milliseconds	0	1	Real	
25.6	mgUnitResolution	resolution, stated in metres, between points in a grid	0	1	Integer	

1.2.26 OceanDepthPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
26	Class OceanDepthPoint	location with measurement value for ocean depth				
26.1	position	location where the object exists	1	1	PointWithQuality	
26.2	depth	vertical distance from a given reference level down to the seafloor or another object [H]	0	1	Depth	

1.2.27 MarineGeolObservLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
27	Class MarineGeolObservLine	line along which marine geological observations have been carried out				
27.1	centerline	course followed by the central part of the object	1	1	CurveWithQuality	
27.2	surveyID	unique identifier of survey	0	1	CharacterString	
27.3	observLineID	unique identification of observation line	0	1	CharacterString	

27.4	geolDescription	descriptive text field or link (URL) to textual description	0	1	CharacterString	

1.2.28 MarineGeolObservPoint

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
28	Class MarineGeolObservPoint	??MarineBoundary/HighestCoastline				
28.1	position	location where the object exists	1	1	PointWithQuality	

1.2.29 Association <<Topo>> OtherSuperficialDepositPolygon-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
29	Association OtherSuperficialDepositPolygon-GeoDelimLine					
29.1	Role boundary		1	N	GeoDelimLine	Aggregation
29.2	Role (unnamed) OtherSuperficialDepositPolygon		0	1	OtherSuperficialDepositPolygon	

1.2.30 Association <<Topo>> ThicknessPolygon-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
30	Association ThicknessPolygon-GeoDelimLine					
30.1	Role boundary		1	N	GeoDelimLine	Aggregation
30.2	Role (unnamed) ThicknessPolygon		0	1	ThicknessPolygon	

1.2.31 Association <<Topo>> DepositionRateSurface-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
31	Association DepositionRateSurface-GeoDelimLine					
31.1	Role boundary		1	N	GeoDelimLine	Aggregation

31.2	Role (unnamed) DepositionRateSurface		0	1	DepositionRateSurface	

1.2.32 Association <<Topo>> SeafloorTypeHardness -GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
32	Association SeafloorTypeHardness - GeoDelimLine					
32.1	Role boundary		1	N	GeoDelimLine	Aggregation
32.2	Role (unnamed) SeafloorTypeHardness		0	1	SeafloorTypeHardness	

1.2.33 Association <<Topo>> ShallowGasArea -GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
33	Association ShallowGasArea -GeoDelimLine					
33.1	Role boundary		1	N	GeoDelimLine	Aggregation
33.2	Role (unnamed) ShallowGasArea		0	1	ShallowGasArea	

1.2.34 Association <<Topo>> GrainSizePolygon-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
34	Association GrainSizePolygon-GeoDelimLine					
34.1	Role boundary		1	N	GeoDelimLine	Aggregation
34.2	Role (unnamed) GrainSizePolygon		0	1	GrainSizePolygon	

1.2.35 Association <<Topo>> SuperficialDepositSurfaceForm-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
35	Association SuperficialDeposi					

	tSurfaceForm-GeoDelimLine					
35.1	Role boundary		1	N	GeoDelimLine	Aggregation
35.2	Role (unnamed) SuperficialDepositSurfaceForm		0	1	SuperficialDepositSurfaceForm	

1.2.36 Association <<Topo>> MarineGeolUnit-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
36	Association MarineGeolUnit-GeoDelimLine					
36.1	Role boundary		1	N	GeoDelimLine	Aggregation
36.2	Role (unnamed) MarineGeolUnit		0	1	MarineGeolUnit	

1.2.37 Association <<Topo>> OceanDepthSurface -GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
37	Association OceanDepthSurface - GeoDelimLine					
37.1	Role boundary		1	N	GeoDelimLine	Aggregation
37.2	Role (unnamed) OceanDepthSurface		0	1	OceanDepthSurface	

1.2.38 Association <<Topo>> SuperficialDepositPolygonSubordinate-GeoDelimLine

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
38	Association SuperficialDepositPolygonSubordinate-GeoDelimLine					
38.1	Role boundary		1	N	GeoDelimLine	Aggregation
38.2	Role (unnamed) SuperficialDepositPolygonSubordinate		0	1	SuperficialDepositPolygonSubordinate	

1.2.39 Association <<Topo>> SoilTypeSurfaceHidden - SuperficialDepositBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
39	Association SoilTypeSurfaceHidden - SuperficialDepositBoundary					
39.1	Role boundary		1	N	SuperficialDepositBoundary	Aggregation
39.2	Role (unnamed) SoilTypeSurfaceHidden		0	1	SoilTypeSurfaceHidden	

1.2.40 Association <<Topo>> SuperficialDepositPolygon-SuperficialDepositBoundary

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
40	Association SuperficialDepositPolygon-SuperficialDepositBoundary					
40.1	Role boundary		1	N	SuperficialDepositBoundary	Aggregation
40.2	Role (unnamed) SuperficialDepositPolygon		0	1	SuperficialDepositPolygon	

1.2.41 Association <<Topo>> MarineBoundaryPolygon-MarineLimit

No	Name/ Role name	Description	Obligation/ Condition	Maximum Occurrence	Type	Constraint
41	Association MarineBoundaryPolygon-MarineLimit					
41.1	Role boundaryMarineLimit		1	N	MarineLimit	Aggregation
41.2	Role (unnamed) MarineBoundaryPolygon		0	1	MarineBoundaryPolygon	

1.2.41.1 CodeLists

1.2.41.1.1 <<CodeList>> OtherQuSymbols

Nr	Code name	Definition/Description	Code
1	CodeList OtherQuSymbols	quaternary geological symbols which are not elements of form or line elements Note: In the statement of grain size, the predominant (grain size) fraction is indicated as a noun, cf. table in chapter on definitions and abbreviations. If other fractions comprise more than 10%, ??<truncated>	
1.1	Not indicated		0
1.2	Small bedrock exposure		401
1.3	High content of boulders on the surface	FF-Areas where more than approx. 20% of the surface is covered by boulders. The symbol can be used for various types of superficial deposits .	402
1.4	Boulder	Location of a boulder larger than 3 m3.	404
1.5	Large boulder	FF-Location of a boulder greater than approx. 10 m3.	405
1.6	Surface strongly affected by frost processes	FF-The original deposit is to a high degree changed by freezing and thawing.	406
1.7	Washed-out surface layer, underlying masses are more fine-grained	FF-Areas where the surface consists of coarser material than the masses which lie deeper. This is primarily due to wash-out because of meltwater.	407
1.8	Avalanche plunge pool / Pit formed by snow avalanche	pronounced depression in soil, formed where avalanches hit less steep slopes	410
1.9	Clay slide deposit		411
1.10	Rockfall and rock avalanche		412
1.11	Debris flow / lobe deposit	debris flow / Landslide in steep terrain	413
1.12	Active river/stream or groundwater erosion in a small area		414
1.13	Small slide	Small surface slide, in various soils	415
1.14	Snow avalanche deposit		417
1.15	Avalanche tongue lobe		418
1.16	Hill levelling	FF-Areas where levelling of the original surface has been registered	419
1.17	Fill material	FF-Replaced soil or soil that has been strongly reworked	420
1.18	Rockfall/large boulder		451
1.19	Shell site	Shell bank or superficial deposits with high content of shell sand	501
1.20	Potential shell sand deposit		502
1.21	Identified shell sand deposit		503
1.22	Clay/sand/gravel pit in operation	Superficial deposits excavation on a fairly regular basis	504

1.23	Excavation pit, discontinued or in sporadic operation	Superficial deposits excavation, where the operation is sporadic or has stopped	505
1.24	Source (Groundwater spring)	Artesian spring. Used to indicate locations where groundwater springs occur	551
1.25	Source horizon	Horizon with groundwater springs	552
1.26	Marine limit (metres above sea level)	ML, indicates the highest sea level during/after the deglaciation. In places where it can be accurately determined, the altitude is stated in metres above sea level	601
1.27	Fossil find site		602
1.28	Radiocarbon-dating with reference		603
1.29	Sample location with reference	FF-The symbol must indicate exactly where the sample has been taken.	610
1.30	Sample location for grain size distribution analysis		611
1.31	Sample location for mechanical strength (friability/flakiness analysis)		612
1.32	Sample location for rock and mineral content analysis		613
1.33	Sample location for other purposes (concrete, abrasion, etc.)		614
1.34	Drilling with reference		615
1.35	Geophysical profile with reference	FF-(SE=seismics, GR=georadar)	616
1.36	Electric resistivity measurement with reference		617
1.37	Clay	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	701
1.38	Silty clay	FF-Symbols which indicate predominant grain size of sorted superficial deposits	702
1.39	Clayey silt	Symbols which indicate the predominant grain size of sorted superficial deposits	703
1.40	Silt	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	704
1.41	Sandy silt	FF-Symbols which indicate the predominant grain size of sorted superficialdeposits	705
1.42	Silty sand	FF-Symbols which indicate the predominant grain size of sorted superficialdeposits	706
1.43	Sand	FF-Symbols which indicate the predominant grain size of sorted superficialdeposits	707
1.44	Gravelly sand	FF-Symbols which indicate the predominant grain size of sorted superficialdeposits	708
1.45	Sandy gravel	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	709
1.46	Gravel	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	710
1.47	Stony gravel	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	711
1.48	Gravelly stone	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	712
1.49	Stone	FF-Symbols which indicate the predominant grain size of sorted superficial deposits	713
1.50	Shallow gravel pit (depression)		801

1.51	Gas seepage pit, circular		802
1.52	Gas seepage pit, oblong		803

1.2.41.1.2 <<CodeList>> OtherQuTheme

Nr	Code name	Definition/Description	Code
2	CodeList OtherQuTheme	other quaternary geological themes Note: Themes such as for instance the areas above/below the marine boundary, ice divide, main watershed divide, etc. Developed as required	
2.1	Area above marine limit		1
2.2	Area below the marine limit		2
2.3	Ice divide before main deglaciation		11
2.4	Main watershed		21
2.5	Infiltration polygon		30

1.2.41.1.3 <<CodeList>> WasteDisposalSiteSuitability

Nr	Code name	Definition/Description	Code
3	CodeList WasteDisposalSiteSuitability	superficial deposits classified according to how suitable they are as a sealing layer under a filling (a waste disposal site) Note: One should make reservations to the fact that a quaternary geological map do not provide exact data about how thick the deposits are	
3.1	Good attributes		1
3.2	Medium attributes		2
3.3	Poor attributes		3
3.4	Unsuitable		4
3.5	Not classified		5

1.2.41.1.4 <<CodeList>> QuFormLineType

Nr	Code name	Definition/Description	Code
4	CodeList QuFormLineType	quaternary geological linear elements of form Note: Line themes on quaternary geological maps. Show features created during the deglaciation river/stream features, beach features or landslide features, etc. For several of the line symbols, one must take into consideration the direction of digitalization to get the symbol correct	
4.1	Not indicated		0
4.2	Drumlin	moraine ridge formed as a streamlined feature along the direction of the ice movement	1

4.3	Drumlin-like form		2
4.4	Terminal/marginal moraine		3
4.5	Rogen moraines	ridges of till, with orientation perpendicular to the direction of glacier movement	4
4.6	Parallel stripes on the surface	parallel furrows on the surface	5
4.7	Rogen moraines/DeGeer moraines	ridges of till, with orientation perpendicular to the direction of glacier movement	6
4.8	Large kettle hole		11
4.9	Esker (ridge-shaped glaciofluvial	distinct ridge form in soilsuperficial deposits. Indicates that the material has been deposited in tunnels or crevasses in the glacier. If the ridge-shaped glaciofluvial deposit is large enough to form a figure on the map, then the colour for glaciofluvial deposits is used to indicate the extent, and the esker symbol to indicate the ridge shape	12
4.10	Glaciofluvial erosion	Erosion edge formed by glacier stream	13
4.11	Meltwater channel (lateral drainage channel)	Eroded in superficial deposits	21
4.12	Lateral melt water channel (unilateral drainage channel	Formed along the glacier margin	22
4.13	Melt water channel crossing water divide	outlet/Overflow pass	23
4.14	Large gorge/canyon (1)	Formed in solid bedrock	24
4.15	Large gorge/canyon (2)	Formed in solid bedrock	25
4.16	Gorge/canyon, glaciofluvially eroded (small)	Formed in solid bedrock	26
4.17	Glaciofluvially washed area	Rock surface flushed by melt water	27
4.18	Ice contact slope		41
4.19	Shoreline, glacier-dammed lake		42
4.20	Beach ridge, glacially dammed lake		43
4.21	Plough mark, iceberg		44
4.22	Large kettle-holedead	Depression in superficial deposits formed by the melting of buried remains of ice. The symbols are scale-dependent and must be used according to good judgment.	45
4.23	Grounded iceberg depression	depression formed by an iceberg which grounded and remained stationary	46
4.24	Nivation scarp	steep slope by snow-bed	51
4.25	Terrace edge (glacial)		52
4.26	Fluvial erosion scarp		101
4.27	Abondoned fluvial channel		102
4.28	Flood channel		103
4.29	Large canyon/gorge, river/melt water		104

4.30	Gorge/canyon/river/glacier stream		105
4.31	Fan shape		106
4.32	Ravine		107
4.33	Terrace edge		108
4.34	Fluvial or glaciofluvial erosion scarp		109
4.35	Channel (fluvial or glaciofluvial)		110
4.36	Beach ridge		201
4.37	Shoreline, superficial deposit		202
4.38	Shoreline, bedrock		203
4.39	Abrasion scarp		204
4.40	Slide deposits fan. Colluvial fan		301
4.41	Avalanche/Landslide track		302
4.42	Avalanche wall		303
4.43	Snow avalanche tongue		304
4.44	Rock avalanche (landslide) front		305
4.45	Slide scarp		306
4.46	Stone stripes	frost phenomenon on slope	350
4.47	Ridge	distinct ridge shape in superficial deposits	351
4.48	Cutting surficial sediments (marine		501
4.49	Lineament (marine)		502
4.50	Sand wave (marine)		503
4.51	Spring horizon		552
4.52	Hill	Glacial deposit distal to glacially eroded pit	911
4.53	Hole	glacially eroded pit	912
4.54	Ridge, unspecified (marine)		920
4.55	Current channel (marine)		921
4.56	Channel, unspecified (marine)		922
4.57	Sediment wave (marine)		923
4.58	Coral reef (marine)		924
4.59	Fault (marine)		925
4.60	Crack (marine)		926
4.61	Anchor track(s) (marine)		930
4.62	Cable (marine)		931
4.63	Pipeline (marine)		932

1.2.41.1.5 <<CodeList>> QuFormPointType

Nr	Code name	Definition/Description	Code
5	CodeList QuFormPointType	quaternary geological point elements of form Note: Point themes on quaternary geological maps or marine geological charts. Show features created during the deglaciatio, river/stream features, beach features and landslide features, etc. NOTE! The same elements of form may also occur as lines	
5.1	Drumlin	moraine ridge formed along the direction of the ice movement.	201
5.2	Drumlin-like shape		202
5.3	Parallel furrows on the surface	fluted surface. The symbols are drawn in such a way that they indicate the length of the furrow	203
5.4	Glacial striations, movement toward the point of observation	striation on the rock surface which show the direction of the ice movement. Ice movement toward the point of observation.	211
5.5	Glacial striations, two potential directions of ice movement	striation on the rock surface which show two possible directions of ice movement. Ice movement toward the point of observation.	212
5.6	Glacial striae, relative age not determined	relative age not determined. Ice movement toward the point of observation	213
5.7	Glacial striations within the sector	Striations on the rock surface which show the direction of the ice movement within a given sector. Ice movement toward the point of observation.	214
5.8	Crossing glacial striations, increasing number of ticks indicate increasing relative age. (Relative age 1)	Youngest ice movement direction. Ice movement toward the point of observation	215
5.9	Crossing glacial striation, increasing number of ticks increasing relative age. (Relative age 2)	Next youngest ice movement direction. Ice movement toward the point of observation	216
5.10	Crossing glacial striation, increasing number of ticks increasing relative age. (Relative age 3)	Oldest ice movement direction. Ice movement toward the point of observation	217
5.11	Till fabric/stone orientation, increasing number of ticks	determined in till as support information about deposition directions. The measurements were made on a horizontal base and within distinct units. enheter.	221
5.12	Till fabric/stone orientation, two possible ice movement directions	Two possible directions have been determined. The measurements were made on a horizontal base and within distinct units.	222
5.13	Till fabric/stone orientation; relative age not determined	Determined in till as support information about deposition directions.	223
5.14	Stone orientation; rel. age 1	Youngest ice movement direction	224
5.15	Till fabric/stone orientation; rel. age 2	Next youngest ice movement direction	225

5.16	Till fabric/stone orientation; rel. age 3	Oldest ice movement direction	226
5.17	Crescentic gouges, ice movement toward point of observation	used to determine the direction of movement of the ice	231
5.18	Crescentic fractures, ice movement toward point of observation	determined on rock surfaces as support information about ice movement directions. The measurements made on approximately horizontal surfaces	232
5.19	Roche moutonnée, point of observation at the tip of the arrow	Land form in bedrock ("whale backform"). Length direction determined as support information about ice movement directions.	233
5.20	Mound-shaped glacial river deposit (kame)	Material deposited in a glacial cavity. Large deposits are given the colour for glaciofluvial deposits in combination with the symbol for mounds. Grain size and sorting are indicated for such deposits.	234
5.21	Small kettle-hole	small depression in superficial deposits, formed by the melting of buried ice remnants	241
5.22	Ridge	Distinct ridge in superficial deposit	242
5.23	Sunken pit formed by iceberg	Depression formed by an iceberg run aground which remained stationary	243
5.24	Canyon formed by meltwater	Deep cuts in the bedrock where the formation is uncertain or complex	244
5.25	Stone stripe	Frost phenomenon	245
5.26	Flood channel/meltwater		246
5.27	Stream hollow, fluvial	depression formed on fluvial plains in periods of flooding	301
5.28	Depression formed by sand drift	depression up to 3-4 m deep, formed by wind erosion on the surface.	302
5.29	Small eolian (sand) dune	Small dunes in eolian sand areas. Larger dunes may be indicated as "distinct mound or ridge".	303
5.30	Sand dunes		304
5.31	Mound and ridge-shaped surface	areas characterised by small mounds and randomly oriented, short ridges. These are common in areas with melting of stagnant ice	305
5.32	Distinct mound or ridge	iIndicates the delimitation of a single, large mound or ridge	306
5.33	Small slope failure/slide	small surficial slide, frost slide, etc., in various soils	307
5.34	Plastic shapes on the surface	The result of erosion on the surface of plastic ice/water. The symbol is used for large individual features and areas with many lesser features.	311
5.35	Pothole	most often a cylindrical pit hollowed out of solid bedrock by vortices which carry rocks and gravel. The symbol is used for large individual features and areas with many lesser features.	312
5.36	Karst	Areas with distinct pits and caves formed by the dissolution of calcareous rock.	313
5.37	Hummocky tussock ground	frost phenomenon formed on peat-covered ground	321
5.38	Palsas	up to 4 m tall mounds consisting of peat with a core of ice	322
5.39	Polygon ground	Frost phenomenon, diamond or ring-shaped.	323
5.40	Soil creep tongue (solifluction lobe)	frost phenomenon caused by soil creep	324
5.41	Pingo	Frost phenomenon; large cone-shaped mound.	325
5.42	Pockmark, circular (marine)	Circular depression on the seafloor caused by seepage of gas or fluids	901

5.43	Pockmark, elongated (marine)	Elliptic depression on the seafloor caused by seepage of gas or fluids.	902
5.44	Coral reef (marine)	coral reef	903
5.45	Diapir (marin)	A positive topographic element which primarily consists of clay, often in connection with the seepage of gas on the seafloor.	904
5.46	Boulder (marine)		905
5.47	Bomb crater (marine)		906
5.48	Wreck (marine)		907
5.49	Pit (marine)		908
5.50	Mound (marine)		909

1.2.41.1.6 <<CodeList>> SuperficialDepositLoadBearingCapasity

Nr	Code name	Definition/Description	Code
6	CodeList SuperficialDepositLoadBearingCapasity	the attributes of the soil with respect to load-bearing capacity Note: Has significance for settlings/subsidence movements, landslide and avalanche hazard, and frost activity under load, drainage or other building-technical influence	
6.1	Good soil mechanical ground conditions	good load-bearing capacity; low risk of settlement movement, slide and avalanche hazards are low; and there is small ground frost activity	1
6.2	Medium soil mechanical condition	medium load-bearing capacity	2
6.3	Poor soil mechanical condition	poor load-bearing capacity; risk of settlement movement, slide and avalanche hazard; and major ground frost activity	3
6.4	Unsuitable soil mechanical conditions	the ground conditions are unsuitable for building purposes	4
6.5	Not classified		5

1.2.41.1.7 <<CodeList>> GroundWaterPotential

Nr	Code name	Definition/Description	Code
7	CodeList GroundWaterPotential	the potential of the superficial deposits to contain ground water resources Note: Derived theme based on the attributes of the type of superficial deposit	
7.1	Proven considerable resource of groundwater	FF-The groundwater resource has been identified with good results in detailed surveys (test boring).	1
7.2	Assumed considerable potential for groundwater	includes primarily glaciofluvial deposits and fluvial deposits, as well as some thick beach deposits where the groundwater has a connection with a watercourse or lake. Other large glaciofluvial deposits and fluvial deposits with self-replenishing groundwater magazines may also be included	2
7.3	Limited potential for groundwater	Small-scale groundwater tapping may be possible from small glaciofluvial and fluvial deposits which are not connected to watercourses or lakes. Sandy and gravelly moraines, beach and	3

		lake/glacial lake deposits predominantly of sand, as well as landslide deposits, may also be included	
7.4	No potential for groundwater in unconsolidated/superficial deposits	includes primarily fine-grained moraines, marine finegrained deposits or thin, discontinuous/deposits, as well as bare bedrock and marsh/peat	4
7.5	Not classified	the potential for groundwater has not been classified. Registration (mapping of superficial deposits) is not sufficiently differentiated	5

1.2.41.1.8 <<CodeList>> InfiltrationCapacity

Nr	Code name	Definition/Description	Code
8	CodeList InfiltrationCapacity	the attributes of the soil in relation to infiltrating and cleansing waste water	
8.1	Very suitable	the grain size distribution and permeability of the superficial deposits, as well as depth and terrain conditions, indicate good infiltration capability. Sufficient thickness of sand and gravel above the groundwater level. Includes large glacio-fluvial and fluvial deposits, as well as some thick beach deposits and strata bound sorting in marginal moraines	1
8.2	Medium suitability	The grain size distribution and permeability of the soil, as well as soil depth and terrain conditions, indicate moderate infiltration capability. Limited thickness of sand and gravel above the groundwater level, or larger deposits with somewhat reduced infiltration capacity. Includes primarily thick moraines rich in sand and gravel, thick/contiuous cover of weathered material, sandy beach deposits and glacio-lacustrine/lacustrine deposits	2
8.3	Low suitability	the grain size distribution and permeability of the superficial deposits, as well as depth and terrain conditions, indicate poor infiltration capability. Small/thin deposits, partially with some infiltration capacity or thick deposits with low infiltration capacity	3
8.4	Unsuitable	the grain size distribution and permeability of the superficial deposits, as well as depth and terrain conditions, indicate poor or no infiltration capability. Includes impermeable, primarily clayey deposits, coarse boulder and rock material, peat, landfill masses, thins soilsuperficial deposits with low infiltraction capacity, and exposed bedrock	4
8.5	Not classified	FF-The infiltration capability has not been assessed due to a lack of sufficient data.	5

1.2.41.1.9 <<CodeList>> SuperficialDepositSurfaceType

Nr	Code name	Definition/Description	Code
9	CodeList SuperficialDepositSurfaceType	the superficial deposit surface is affected by secondary processes; for example climate	
9.1	Soil/bedrock underwater, unspecified	Used for a deposit where genetic origin has not been proven, it has not been determined whether the sediment is of marine origin.	1

9.2	Till, unspecified	Material picked up, transported and deposited by the glacier. It is usually poorly sorted and may contain anything from clay to rocks and boulders. Thickness and surface morphology may vary.	10
9.3	Till with particularly high clay content	material picked up, transported and deposited by the glacier. It is usually poorly sorted and may contain anything from clay to rocks and boulders. Moraine deposits with thickness ranging from 0.5 m to several tens of metres. There are few or no exposures of bedrock in the area	11
9.4	Moraine material, discontinuous or thin cover over the bedrock	material picked up, transported and deposited by the glacier. It is usually poorly sorted and may contain anything from clay to rocks and boulders. Areas with sparce cover of till and frequent bare patches of bedrock. The thickness of the deposits is normally less than 0.5 m, but may locally be thicker	12
9.5	Boulder clay	till with particularly high clay content	13
9.6	Melt-out till (ablation till)	mounds and ridges with loosely compacted/layered, partially sorted material deposited under stagnating glaciers (dead ice). The terrain is characterized by mounds and ridges with varying orientation	14
9.7	Marginal moraine/zone of marginal moraines	ridges or zones of ridges which have been pushed up in front or laterally to a glacier. The material is unsorted and contains all grain sizes from clay to boulders. In some places till may occur in alternation with somewhat more well-sorted glacio-fluvial material.	15
9.8	Drumlin	moraine ridge formed along the direction of the ice movement	16
9.9	Glacio-fluvial deposit	material transported and deposited by glacial rivers. The sediment consists of sorted, often sloping layers of grain size varying from fine sand to rocks and boulders. Glacio-fluvial deposits often have distinct morphology	20
9.10	Glaciofluvial and fluvial deposit	material transported and deposited by meltwater and other streams The sediments consist of sorted layers of grain size varying from fine sand to gravel and pebbles. No distinction is made between glaciofluvial and fluvial deposits	21
9.11	Esker	a long, narrow, sinous, steep-sided ridge composed of irregularly stratified sand and gravel that was deposited by a subglacial or englacial stream flowing between ice walls or in an ice tunnel when the ice melted.	22
9.12	Mound-shaped glaciofluvial deposit (kame)	material deposited in cavities in the glacier. Large deposits are given the colour for glaciofluvial deposits in combination with the symbol for kame.	23
9.13	Glacio-lacustrine deposit	fine-grained material deposited in glacial lakes or water-filled glacial chambers where the thickness is more than 0.5 m and the coverage area is great enough to form a polygon on the map	30
9.14	Gglaciofluvial and glacio-lacustrine deposit	material deposited by a glacial river or ice-dammed lakes/glacial chamber. No distinction is made between glaciofluvial and glacio-lacustrine/glacial chamber deposits	31
9.15	Lacustrine deposit	Fine-grained material deposited in glacial lakes or water-filled glacial chambers where the	35

		thickness is more than 0.5 m and the coverage area is great enough to form a figure on the map.	
9.16	Glacio-lacustrine and lacustrine deposit	used if one wants to group the two deposit types together. In that case, the specific colours for glacial lake and lake are not used on the same map sheet	36
9.17	Marine fine-grained deposit, unspecified	used in map making at very small scales	40
9.18	Marine fine-grained deposit, continuous cover, great thickness prevalent	fine-grained, marine deposits with thickness ranging from 0.5 m to several tens of metres. This type of deposit also includes slide material from quick clay slides, often denoted by an additional symbol.	41
9.19	Marine beach deposit, continuous cover	Marine beach-washed sediments with thickness greater than 0.5 m. Deposit formed by wave and current activity in the beach zone. The material is often rounded and well-sorted. The grain size varies from sand to boulders, but sand and gravel is the most common. Beach deposits lay as a relatively thin layer over the bedrock or other sediments, locally as beach ridges	42
9.20	Marine fine-grained deposit and beach deposit, discontinuous or thin cover over the bedrock	areas with a thin or discontinuous cover of superficial deposits. No distinction is made between fine-grained and beach deposit.	43
9.21	Shell sand	Deposit which to a large degree consists of crushed shells from calcium-secreting organisms. Is a type of bioclastic material. Grain size varies from nearly whole shells to sand. Large amounts of shell sand may be accumulated in the immediate vicinity of good shell growth areas shells	44
9.22	Marine gyttja (mud)	Deposit which consists of fine-grained material; silt and clay with a high organic content. The primary production of organic material has taken place in the water column. Marine gyttja is found in areas where there is little material transport from the shore.	45
9.23	Fluvial deposit	material which has been transported and deposited by rivers and streams. The most typical forms are fluvial plains, terraces and fans. Sand and gravel dominate, and the material is sorted and rounded.	50
9.24	Fluvial deposit, continuous cover	material which has been transported and deposited by rivers. The most typical forms are plains, terraces and fans. Sand and gravel dominate, and the material is sorted and rounded.	51
9.25	Fluvial deposit, discontinuous/thin	areas with a thin or discontinuous cover of fluvial deposits	52
9.26	Flood deposit (unspecified)	used for special sediments deposited by the sudden drainage of glacial lakes	53
9.27	Flood deposit, continuous	Used for special sediments deposited by the sudden drainage of glacial lakes.	54
9.28	Flood deposit, discontinuous/thin	Used for special sediments deposited by the sudden drainage of glacial lakes.	55
9.29	Eolian deposit	blown sand of thickness greater than 0.5 m	60
9.30	Weathered material, not classified according to thickness	disintegration of the bedrock. . No distinction between continuous and discontinuous or thin cover of this type of deposit.	70

9.31	Weathered material, continuous cover	superficial deposits formed in situ by physical or chemical disintegration of the bedrock. The thickness is more than 0.5 m.	71
9.32	Weathered material, discontinuous or thin cover over the bedrock	area with numerous bare patches of bedrock	72
9.33	Weathered material, high content of stones and boulders, formed by frost activity	boulder field, usually in the high mountains	73
9.34	Slide material, not classified according to thickness	Deposits from rockfall, mountain avalanches, snow and landslides from steep valley slopes.	80
9.35	Colluvium (slide material), continuous cover, with great thickness in places	Slide material, continuous cover, with great thickness in places	81
9.36	Colluvium (slide material), discontinuous or thin cover over the bedrock	areas with deposits from rockfall, mountain avalanches, snow and landslides from steep valley slopes. Symbol shows dominant avalanche/landslide type.	82
9.37	Debris flow landslide, continuous cover, with great thickness in places	slide material formed from superficial deposits, either from a slope failure on land or under the sea. The slide material is actually a mass current deposit that includes all types of landslides.	86
9.38	Rock glacier deposit	scree/rock fall material which contains/has contained ice and which therefore is/has been in movement as an ordinary glacier. The deposit type is formed in permafrost conditions	88
9.39	Peat and bog (organic material)	organic materialo formed by dead plant remains, of thickness greater than 0.5 m. No distinction is made between various types of peat.	90
9.40	Humus cover/thin peat cover over bedrock	Areas where the humus cover lies directly on the bedrock. The thickness of the humus cover is usually less than 0.5 m, but may be thicker in places. Bare patches of bedrock occur frequently within such areas.	100
9.41	Discontinuous or thin cover of superficial deposits over bedrock, more than one type in close alternation	different sediments which form a thin or discontinuous cover over the bedrock. This term is used only when one chooses not to distinguish between various types of superficial deposits	101
9.42	Exposed bedrock/bedrock with thin peat cover, unspecified		110
9.43	Fill material (anthropogenic material)	superficial material added or strongly influenced by human activity	120
9.44	Waste rock dump		121
9.45	Anthropogenic material, not specified		122
9.46	Exposed bedrock	distinguished by its own colour when the area is of sufficient size. The symbol for small bedrock exposure is used for outcroppings which are not large enough to form their own polygons on the map.	130
9.47	Exposed bedrock/bedrock with	both exposed bedrock and areas where the coverage is discontinuous, or of negligible	140

	discontinuous or thin coverage	thickness.	
9.48	Marine suspension deposit	Fine-grained (clay, silt) sediments transported and deposited from suspension. Usually draping underlying sediments or bedrock, and are usually layered.	200
9.49	Marine bedload deposit	sediments which consist of sand and gravel transported and deposited from bottom currents. Covers the bottom of undersea channels formed by bottom currents	201
9.50	Glacio-marine deposit	Primarily fine-grained suspension deposits (silt, clay) deposited near ice/glaciers. May be affected by bottom currents and even out the topography more than draping it. Occur in thick layers in areas on the continental shelf along the coast and in fjords	202
9.51	Ice contact deposit	Sediments deposited in contact with ice. May consist of moraine, glacio-fluvial material, or a mixture of glacially deposited sediments. The grain size alternates between clay and gravel depending on which processes were in play.	203
9.52	Lagg deposit	Sediments consisting of sand, gravel and mineral fragments after the fine fractions have been washed away by waves and current. Makes up a lag with varying grain size covering tills or other sediments.	204
9.53	Glacio-fluvial delta deposit (marine)	sediments transported by glacial streams and deposited in the sea, in lakes or glacial lake	205
9.54	Fluvial delta deposit	sediments deposited at the mouth of a river into a fjord, lake or the sea. Grain size is often in sand sized near the outlet and more fine-grained in deeper water. Typically layered sediments with dip in the direction of the current.	206
9.55	Tidal deposit	deposit formed in coastal area by tidal transport. The sediments are sandy to clayey with typical structures such as sand dunes, ripples, cross-bedding, flaser and lenticular bedding.	207
9.56	Estuarine deposit	sediment deposited in brackish water in an estuary. The sediment is characterised by fine-grained material (silt, clay) of marine and fluvial origin mixed with a high proportion of decomposedr terrestrial organic material.	208
9.57	Levee deposit (marine)	deposit formed as a rise of sediments along one or both sides of a submarine channel (cleft, fan valley or deep sea channel). The deposit may have grain size varying from very fine (clay) to fairly coarse material (sand).	209
9.58	Shallow marine deposit	Sediments deposited in a turbulent, shallow marine environment where the finest material is washed out and transported to deeper water by currents and waves. Consists of sand, gravel and pebbles. In areas with much sand, sand waves may be built with a characteristic crossbedding	210
9.59	Contouritic deposit	Clastic sediments transported and deposited by contour currents along the edge of "Eggakanten" (the edge of the continental shelf). Consists of fine, well-sorted material (silt and clay). The deposits usually have horizontal or cross-layering/bedding and normal or reverse grading.	211
9.60	Turbidity deposit	a sediment from, or inferred to have been deposited from a turbidity current. It is characterized by graded bedding, moderate sorting, and well developed primary structures in the sequence	212

		noted in the Bouma cycle	
9.61	Debris flow deposit	Deposit from a flowingmass of rocks, fragments and mud. It consists of unsorted material where more than half of the particles are larger than sand in size	213
9.62	Submarine fan deposit	a conical or fan-shaped deposit located seaward of large rivers and submarine. Consists primarily of fine sediments (clay, silt). The fan has a finely laid inner structure with layers which slope slightly toward the deep ocean.	214
9.63	Channel deposit	sediments deposited in a channel. The deposits are usually relatively coarse (sand and gravel)	215
9.64	Deep marine deposit	generic term for deep sea sediments. May be both contouritic, hemipelagic, eupelagic, etc. Used for fine-grained sediments settled outside the continental margin. Mainly consist of clay and remants/remains of pelagic organisms	216
9.65	Bioclastic deposit	Sediment which primarily consists of small particles of biological origin (shells, coral). Grain size may vary from sand to whole shells or coral colonies. Located in areas with optimal growth conditions over time and where occurrence of other clastic material is restricted	217
9.66	Vulcano-sedimentary deposit	Deposit which consists of material of volcanic origin. Depending on grain size, the sediments may be divided into volcanic ash, lapilli (2-64 mm) and breccia (>64 mm).	218
9.67	Debris flow deposit, continuous coverage, with great thickness in places	deposit which is formed when superficial deposits in steep terrain slides or falls downward. Often forms characteristic fan or tongue-like shapes/forms.	301
9.68	Debris flow deposit, discontinuous or thin coverage	slides or falls downward. Often forms characteristic fan or tongue-like shapes/forms	302
9.69	Clay-slide deposit, continuous coverage, with great thickness in places	deposit which is formed by slope failure in marine sediments containing clay (quick clay).	303
9.70	Clay-slide deposit, discontinuous or thin coverage	deposit which is formed by slope failure in marine sediments containing clay (quick clay)	304
9.71	Rock slide, continuous coverage, with great thickness in places	Formed when large sections of rock (mountainsides) fall down into valleys and fjords. Consists mostly of jagged boulders.	305
9.72	Rockslide, discontinuous or thin coverage		306
9.73	Rockfall, continuous cover, with great thickness in places	Material which has loosened from solid bedrock and over a period of time accumulated in steep screes at the foot of slopes. The material varies from sand to boulders, with increasing grain size down the slope.	307
9.74	Rockfall, discontinuous or thin coverage		308
9.75	Snow avalanche deposit, continuous	formed in areas with repeated avalanches	309

	coverage, with great thickness in places		
9.76	Snow avalanche, discontinuous or thin coverage		310
9.77	Rockslide rockfall, continuous cover, with great thickness in places	Material consisting of boulders and large parts of rock massif which has fallen down. Consists primarily of unsorted coarse material (rocks and boulders) and is most often found at the foot of steep slopes/mountainsides.	311
9.78	Rockslide/rockfall, discontinuous or thin coverage		312
9.79	Snow avalanche and debris flow, continuous cover		313
9.80	Snow avalanche and debris flow, discontinuous or thin cover		314
9.81	Debris flow and rockfall, continuous cover e		315
9.82	Debris flow and rockfall, discontinuous or thin cover		316

1.2.41.1.10 <<CodeList>> DepositRate

Nr	Code name	Definition/Description	Code
10	CodeList DepositRate	the rate of deposition of sediments in an area	
10.1	Erosion		
10.2	No deposition	FF-0 cm/1000 years	
10.3	Very slow	FF-0-50 cm/1000 years	
10.4	Slow	FF-50-200 cm /1000 years	
10.5	Medium	FF-500-1000 cm/1000 years	
10.6	Rapid	FF-200-500 cm/1000 years	
10.7	Very rapid	FF-1000 cm/1000 years	

1.2.41.1.11 <<CodeList>> Bunntype?

Nr	Code name	Definition/Description	Code
11	CodeList Bunntype?	bunntype med hensyn til hardhet	
11.1	Bedrock	Exposed bedrock	

11.2	Hard, sedimentary bottom	Hard bunn bestående av stein, grus, grov sand i overflata.	
11.3	Soft, sedimentary bottom	Soft seabed with a surface consisting of clay, silt, fine sand.	
11.4	Mixed bottom	Seabed surface varying between soft and hard. Can e.g. consist of clay with rocks.	

1.2.41.1.12 <<CodeList>> ShallowGas

Nr	Code name	Definition/Description	Code
12	CodeList ShallowGas	shallow gas-related phenomena in sediments and bedrock	
12.1	BSR	area with BSR (bottom simulating reflector) localized in seismic data which indicates that there is gas hydrates and gas in the sediments	1
12.2	Shallow gas in the bedrock	FF-Area where shallow gas has been identified in the bedrock.	2
12.3	Shallow gas in the sediments	FF-Area where shallow gas has been identified in the sediments.	3
12.4	Fluid escape	FF-Area with fluid discharge and/or gas emissions from the seafloor	4
12.5	Bright spots	area with abnormally high reflection amplitudes in seismic data, indicatinghydrocarbon deposits	5
12.6	Diapirs	area with diapirs/dome structures formed by the upward migrationof sediments/fluids and protrude through overlying strata	7
12.7	Area with pockmarks	area with regular depressions/craters on the surface of the sediments formed by the expulsion of gas and/or fluids through the sediments	8
12.8	Delimitation of an individual pockmark	regular depression/crater on the surface of the sediments formed by the expulsion of gas and/or fluids through the sediments	9
12.9	Gas blanking	FF-Area with gas blanking, subdued seismic reflectors due to gas.	10
12.10	Gashydrate stability zone	FF-Area which defines a gas hydrate stability zone, an area where gas hydrates may exist.	11

1.2.41.1.13 <<CodeList>> QualFormSurfaceType

Nr	Code name	Definition/Description	Code
13	CodeList QualFormSurfaceType	area with specific elements of form Note: Designed as polygon delineations on quaternary geological maps and marine geological charts. These elements of form may have a natural origin or be man-made. The same elements of form may also occur as point registrations and/or line registrations	
13.1	Esker	Distinct ridge form in soilsuperficial deposits. Indicates that the material has been deposited in tunnels or crevasses in the glacier. If the ridge-shaped glaciofluvial deposit is large enough to form a polygon on the map, the colour for glaciofluvial deposits is used to indicate the extent and the esker symbol to indicate the ridge shape	1
13.2	Mound and ridge-shaped terrain		2

13.3	Drumlin	moraine ridge formed as a streamlined feature along the direction of the ice movement	3
13.4	Drumlin cluster		4
13.5	Dead ice landscape		8
13.6	Rogen moraine		11
13.7	Rogen moraine area		12
13.8	Area with fluted surface	Parallel furrows on the surface	21
13.9	Tussock area		31
13.10	Polygon ground area		32
13.11	Palsa area	peat mounds with a frozen core	33
13.12	Area with landslide masses which originates from a quick clay slide		43
13.13	Fan		44
13.14	Area which has been subjected to hill levelling		51
13.15	Delta plain		52
13.16	Fluvial plain		53
13.17	Karst area		55
13.18	Sand wave field		61
13.19	Area with iceberg plough marks		63
13.20	Slide deposits fan. Colluvial fan		301
13.21	Slide area (marine)		951
13.22	Iceberg Plough marks (marine)		952
13.23	Parallel-furrowed surface (marine)		953
13.24	Dredging masses		954
13.25	Dredging area		955
13.26	Dumping site		956
13.27	Excavation/gravel pit		957
13.28	Fill/Embankment		958
13.29	Sediment waves (marine)		959
13.30	Ridges (marine)		960
13.31	Coral reef		961
13.32	Terminal/ marginal moraine (marine)		962

1.2.41.1.14 <<CodeList>> SuperficialDepositGrainSize

Nr	Code name	Definition/Description	Code

14	CodeList SuperficialDepositGrainSize	indication of areas (on land) with the similar grain size composition, based on field observations Note: See table in chapter on definitions and abbreviations	
14.1	Grain size not indicated	within a surface not indicated	0
14.2	Clay	Predominant grain size within a surface	1
14.3	Clay and silt	Predominant grain size within a surface	2
14.4	Silt	Predominant grain size within a surface	11
14.5	Silt and sand	Predominant grain size within a surface	12
14.6	Sand	Predominant grain size within a surface	21
14.7	Sand and gravel	Predominant grain size within a surface	22
14.8	Gravel	Predominant grain size within a surface	31
14.9	Gravel and stoner	predominant grain size within a surface	32
14.10	Stone	predominant grain size within a surface	41
14.11	Rocks and boulders	Predominant grain size within a surface	42
14.12	Boulders	Predominant grain size within a surface	51
14.13	Highly variable grain size	Predominant grain size within a surface	99

1.2.41.1.15 <<CodeList>> SoilSurfaceType

Nr	Code name	Definition/Description	Code
15	CodeList SoilSurfaceType	the soil surface is affected by secondary processes; for example wind and weather	
15.1	High content of boulders on the surface		402
15.2	Surface strongly affected by frost processes		406
15.3	Washed-out surface layer, underlying masses are more fine-grained		407

1.2.41.1.16 <<CodeList>> SediGrainSize

Nr	Code name	Definition/Description	Code
16	CodeList SediGrainSize	the grain size composition of the sediments	
16.1	Unspecified	grain size is not specified	0
16.2	Thin or discontinuous sediment cover on bedrock. Sediments with varying grainsize	lateral variation ofbetween small sediment basins with sediments, exposed bedrock and/or bedrock with thin/discontinuous sediment cover. Sediments in the small basins may have various grainsize.	1

16.3	Exposed bedrock	Used for areas without sediment cover	5
16.4	Clay	Clay:Silt > 2:1 and clay+silt content >90%, Sand < 10%, gravel content<2%	10
16.5	Organic mud	Clay:silt = from 1:2 to 2:1 and clay+silt content >90%, sand < 10%, gravel content<2%, High content of organic material	15
16.6	Sludge	Clay:silt = from 1:2 to 2:1 and clay+silt content >90%, sand < 10%, gravel content<2%	20
16.7	Sandy clay	Clay:silt > 2:1 and clay+silt content >50%, sand < 50%, gravel content<2%	30
16.8	Sandy mud	Clay:silt = from 1:2 to 2:1 and clay+silt content >50%, Sand < 50%, gravel content<2%	40
16.9	Silt	Clay: silt < 1:2 and clay+silt content > 90%, Sand < 10%, gravel content<2%	50
16.10	Sandy silt	Silt:clay>2:1 and clay+silt content >50%, sand < 50%, gravel content<2%	60
16.11	Clayey sand	Sand >50%, gravel content<2%, clay:silt >2:1 and clay+silt content <50%	70
16.12	Muddy sand	Sand >50%, gravel content<2%, clay:silt = from 1:2 to 2:1 and clay+silt content <50%	80
16.13	Silty sand	Sand >50%, gravel content<2%, Silt:clay>2:1 and clay+silt content <50%	90
16.14	Fine sand	Sand>90%, Includes fine and very fine sand (Udden & Wentwort)	95
16.15	Sand	Sand>90%, clay+silt content<10%, gravel content <2 %	100
16.16	Coarse sand	sand>90%, includes medium, coarse and very coarse sand (Udden & Wentwort)	105
16.17	Gravelly mud	Sand : silt+clay < 1:9, gravel 2-30%	110
16.18	Gravelly, sandy mud	Sand : silt+clay <> 1:9, and sand : silt+clay < 1:1, gravel 2-30%	115
16.19	Gravelly, silty sand	Sand : silt+clay >1:1, gravel< 30%	120
16.20	Gravelly sand	Sand : silt+clay > 9:1, gravel< 30%	130
16.21	Muddy gravel	Silt+clay : sand > 1:1, gravel 30-80%	140
16.22	Muddy, sandy gravel	Silt+clay : sand < 1:1, gravel 30-80%	150
16.23	Sandy gravel	Sand : silt+clay > 9:1, gravel 30-80%	160
16.24	Gravel	Gravel content > 80%	170
16.25	Rocks and boulders	Dominance of rocks and boulders	180
16.26	Diamicton	Indicates a sediment type which contains all grain sizes without the different grain-size fractions being specified.	200