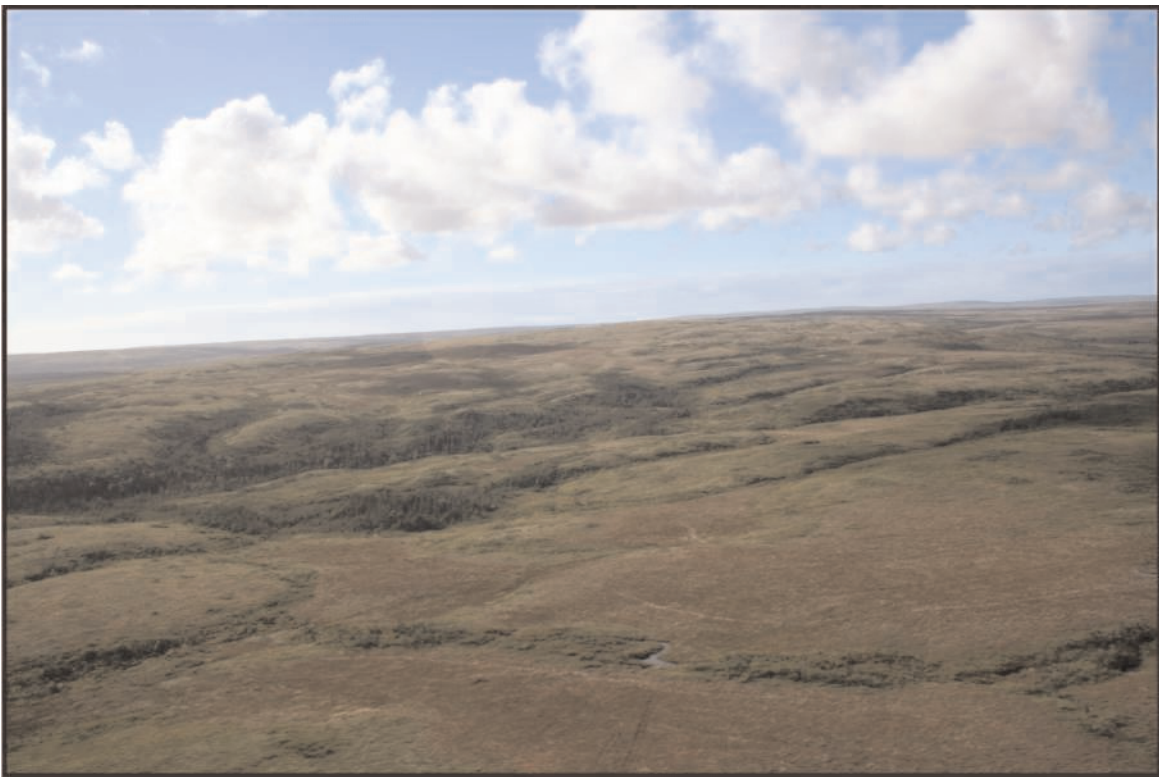




Natural Resources

Mines Branch

**TILL GEOCHEMISTRY OF THE
CAPE ST. MARY'S PENINSULA,
SOUTHEASTERN NEWFOUNDLAND
(NTS MAP AREAS 1K/13, 1L/16, 1M/1, 1N/3 and 1N/4)**



M.J. Batterson and D.M. Taylor

Open File NFLD/3026

**St. John's, Newfoundland
January, 2009**

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Cover photo: View of the interior of the Cape St. Mary’s Peninsula. The area is characterized by extensive bog cover, dissected till blankets and occasional bedrock outcrop.



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ABSTRACT

This report provides the results of a till-geochemistry survey on the Cape St. Mary's Peninsula. Geochemical data of 53 elements from 469 BC- or C-horizon till samples are presented and include analyses by ICP-ES for aluminum, arsenic, barium, beryllium, cadmium, calcium, cerium, chromium, cobalt, copper, dysprosium, iron, lanthanum, lead, lithium, magnesium, manganese, molybdenum, nickel, niobium, phosphorus, potassium, scandium, sodium, strontium, titanium, vanadium, yttrium, zinc and zirconium; by INAA for antimony, arsenic, barium, bromine, calcium, cerium, cesium, chromium, cobalt, europium, gold, iron, hafnium, iridium, lanthanum, lutetium, mercury, molybdenum, nickel, neodymium, rubidium, scandium, samarium, selenium, silver, sodium, strontium, tantalum, tin, terbium, thorium, tungsten, uranium, ytterbium, zinc and zirconium. A complete data listing, field duplicates plots, and individual element maps on a bedrock geology base map are also provided.

The till geochemistry of samples collected over the Cape St. Mary's Peninsula highlights the distinct differences in bedrock geology across the area. Tills overlying rocks of the Cambrian Harcourt and Adeyton groups and associated Silurian sills are relatively enriched in arsenic, cobalt, copper, iron, lithium, molybdenum, magnesium, nickel, rubidium, thorium, and zinc compared to the remainder of the peninsula. Few other clusters of elevated elemental values were noted, although the niobium-tantalum concentrations in the northeast corner of the study area over parts of areas mapped as Hadrynian Conception and St. John's group rocks are worthy of further examination. The till geochemistry of collected samples indicates that regional and local ice flow had limited influence on dispersal patterns.

INTRODUCTION

This report describes the till geochemistry of the Cape St. Mary's Peninsula, and supplements the report of Batterson and Taylor (2008). It is the most recent addition to open-file releases as part of the eastern Newfoundland regional mapping and till-geochemistry project that started on the Bonavista Peninsula (Batterson and Taylor, 2001a, b) and continued onto the western Avalon Peninsula and Isthmus (Batterson and Taylor, 2003a, b), and central Avalon–Bay de Verde peninsulas (Batterson and Taylor, 2004a, b). Similar projects have been completed in the Grand Falls–Mount Peyton (Batterson *et al.*, 1998), Hodges Hill (Liverman *et al.*, 2000), Roberts Arm (Liverman *et al.*, 1996), and southern and central Labrador (McCuaig, 2002, 2005) areas. Open-file releases of till geochemistry from these projects have been successful in generating exploration activity, with over 5000 claims staked directly following the release of the data.

These projects combine surficial mapping (a combination of air-photo analysis and field verification), palaeo ice-flow mapping and sampling of till to be analyzed for geochemistry. The latter two components are complete for this project, although further surficial geology mapping is required.

STUDY AREA

Sampling on the Avalon Peninsula continued in 2007 (NTS map areas 1K/13, 1L/16, 1M/1, 1N/3, 1N/4; Figure 1) to the south of areas sampled in 2002 (Batterson and Taylor, 2003a, b). A total of 490 samples (duplicates included) were collected on the Cape St. Mary's Peninsula (defined as the area south of the Colinet to Placentia road) by a combination of road traverses and helicopter-supported sampling.

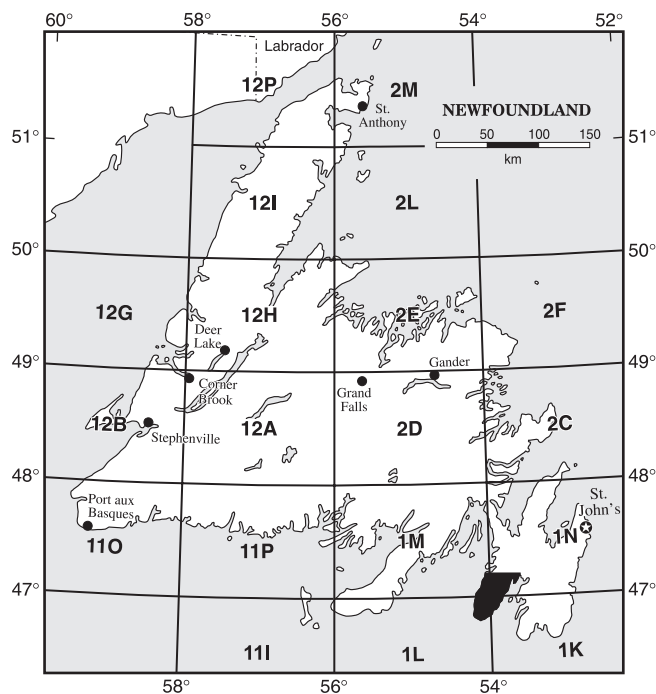


Figure 1. Index map showing location of study area.

LOCATION AND ACCESS

The central part of the Cape St. Mary's Peninsula is a broad plateau reaching elevations of about 275 m asl. The area has a thin sediment cover, extensive areas of thin (<1 m) bog and few bedrock outcrops. There are few large ponds on the peninsula, Great Gull Pond and Skin Cabin Pond being the largest, but there are numerous small ponds dotted throughout the area. Coastal areas show considerable contrast between the western and eastern side, partly a reflection of their exposure to the ocean. The Placentia Bay side of the peninsula is characterized by steep bedrock coastal cliffs and deeply incised valleys hosting Little Barachois River and Cuslett Brook, and un-named rivers flowing into Patrick's Cove, Gooseberry Cove, Ship Cove, and Great Barasway. In contrast, the St. Mary's Bay side of the peninsula generally has gentler gradients, and normally graded river valleys.

Access to the margins of the study area is good along a paved road that roughly follows the coast, with side roads to the community of Point Lance and Cape St. Mary's Ecological Reserve. Access into the interior of the peninsula is generally poor, and restricted to ATV trails, most of which are not provincially approved.

BEDROCK GEOLOGY

The study area lies entirely within the Avalon (tectonostratigraphic) Zone. The bedrock consists of late Precambrian volcanic and sedimentary rocks overlain by Paleozoic shallow-marine and terrestrial sedimentary and minor volcanic rocks (O'Brien *et al.*, 1983; King, 1988; O'Brien and King, 2002; Fletcher, 2006; Figure 2). Rocks are folded into several anticlines–synclines, including the Cape St. Mary's anticline, which extends along the west side of the peninsula, and the Branch anticline along the east side, separated by the Point Lance syncline (King, 1988).

The oldest rocks in the area are sedimentary and volcanic rocks of the Hadrynian Conception Group (Drook Formation and Mistaken Point Formation), which outcrop in the eastern part of the study area. These are overlain by sediments of the St. John's Group (Fermeuse Formation), and sediments and associated volcanic rocks of the Signal Hill Group (Gibbett Hill Formation). These rocks are roughly equivalent in age to rocks of the Musgravetown Group, which underlie most of the Cape St. Mary's Peninsula. The base of the Musgravetown Group are felsic to mafic volcanic flows and associated clastic sedimentary rocks of the Bull Arm Formation. These are overlain by sandstone, siltstone, conglomerate and shale of the Maturin Ponds, Heart's Content, Heart's Desire, Trinny Cove and Crown Hill formations. Exposed along the Placentia Bay and St. Mary's Bay coast and in the southern part of the Placentia sub-peninsula, the Musgravetown Group rocks are unconformably overlain by orthoquartzite of the Early Cambrian Random Formation, which, in turn, is unconformably overlain by the Early Cambrian Adeyton Group. This group consists of mostly shale and slate, and limestone of the Smith Point Formation (not seen on Figure 2). The Adeyton Group is overlain by Upper Cambrian Harcourt Group shale and minor siltstone. The Harcourt Group is intruded by Silurian gabbro, diabase and diorite that are well exposed in the southern part of the peninsula.

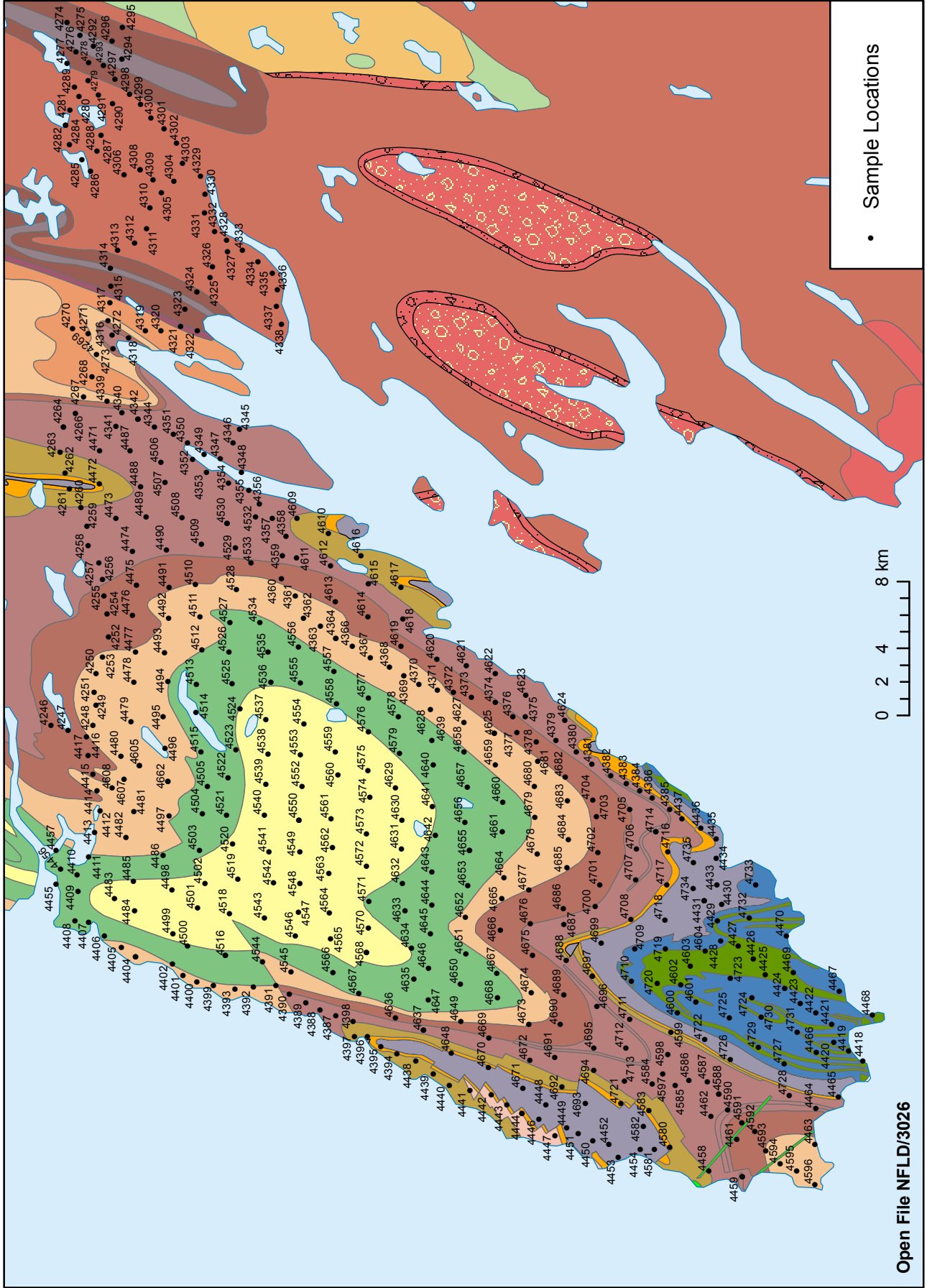
The Cape St. Mary's Peninsula contains numerous mineral showings, mostly around the coast of Placentia and St. Mary's bays. There are relatively few showings in the interior of the peninsula in similar rock types to those exposed along the coast, perhaps being an indication of the lack of mineral exploration in this area. Barium showings are found at Cross Point (near St. Bride's), North Branch Head and Branch, all within rocks of the Adeyton Group; and at Cuslett Cove and Cape St. Mary's within the Musgravetown Group. Rocks of the Musgravetown Group also host several base-metal showings. Copper and lead were found along the river that flows into Point Verde within rocks of the Bull Arm Formation, and a lead showing was identified at Black Point within the Big Head Formation. A short-lived copper mine existed at Stoney House on Placentia Bay within the Hearts Desire Formation (King, 1988). The mine operated in 1860 and only managed to produce 25 tons of ore before the adit was abandoned (Martin, 1983).

REGIONAL TILL-GEOCHEMISTRY PROGRAM

Sediment sampling was on a rough grid of 1 sample per 1 km² where access was good and a spacing of 1 sample per 4 km² where helicopter support was required (Figure 2). Sampling in parts of the Cape

53°17'
47°17'

54°18'
47°16'




46°47'
53°16'


46°46'
54°17'

Figure 2. Sample locations on the Cape St. Mary's sub-Peninsula overlain on a regional bedrock geology map (after King, 1988).

Legend (for Figure 2)


DEVONIAN/SILURIAN

 *Diabase and diorite dykes containing euhedral plagioclase phenocrysts*


 *Diabase, diorite and gabbro sills*


MIDDLE CAMBRIAN TO LOWER ORDOVICIAN

HARCOURT GROUP

 *Grey, green to black, silty, micaceous shale, slate and siltstone; limestone concretions*


ADEYTON GROUP

 *Red, pink and green shale or slate and thin limestone beds; basal conglomerate where formation rests directly on Precambrian rocks*

 *Random Formation: white orthoquartzite interbedded with green, grey and red arkose and siltstone; local basal conglomerate*

HADRYNIAN


MUSGRAVETOWN GROUP (not listed in stratigraphic order)


 *Crown Hill Formation: red pebble conglomerate and sandstone; locally, red siltstone at base; minor green conglomerate*

 *Heart's Desire Formation: olive-green sandstone*

 *Heart's Content Formation: grey to black shale containing wispy sandstone laminae*


 *Bellevue Beach Member: grey pebble conglomerate*

 *Maturin Ponds Formation: red sandstone and mudstone exhibiting distinctive wavy bedding; minor conglomerate*


 *Big Head Formation: wavy bedded, grey to green tuffaceous siltstone and arkose*

BULL ARM FORMATION


 *Felsic flows and tuffs, and clastic sedimentary rocks*

 *Mafic flows; includes minor felsic flows and clastic sedimentary rocks*

 *Predominantly crystal and lithic tuffs, commonly reworked*


 *Mafic to felsic variegated flows, and pyroclastic and clastic sedimentary rocks*


SIGNAL HILL GROUP


 *Gibbit Hill Formation: Thickly bedded, light-grey sandstone; locally thinly bedded, greenish-grey to red sandstone, siltstone, tuff and conglomerate*

HADRYNIAN


ST. JOHN'S GROUP


 *Renews Head Formation: Thin, lenticular bedded, dark-grey sandstone and minor shale*

 *Fermeuse Formation: Grey to black shale containing thin lenses of buff-weathering sandstone and siltstone; mainly light-grey, thinly bedded, contorted shale and sandstone near base*

 *Trepassey Formation: medium to thinly bedded, graded, grey sandstone and shale; minor tuffaceous rocks*

CONCEPTION GROUP


 *Mistaken Point Formation (Upper part): red and green tuffaceous siltstone and sandstone (Lower part): medium bedded, grey to pink sandstone and green to purple and red shale; minor thin tuff horizons; fossiliferous near top*

 *Briscol Formation: Thickly bedded, coarse grained, grey sandstone, olive to grey argillite, red arkosic sandstone; local units of thinly bedded grey siltstone and shale*

DROOK FORMATION (not listed in stratigraphic order)


 *Green siliceous siltstone and sandstone; silicified tuff*

 *Peter's River Member: grey, coarse grained sandstone*


 *Cape English Member: grey to pale-red, thickly bedded sandstone*


 *Broad Cove River Member: thickly bedded chert and sandstone*


 *Gaskiers Formation: Grey mixtite (tillite); red mixtite overlain by red mudstone at top*

 *Mall Bay Formation: Green siliceous siltstone, argillite and tuff; thickly bedded quartzose sandstone*

HARBOUR MAIN GROUP (not listed in stratigraphic order)

 *Red sandstone, conglomerate, slate; green tuffaceous siltstone and sandstone; includes minor felsic and mafic volcanic rocks*

 *Pink to grey felsic tuff and agglomerate; pink to red rhyolite and welded tuff; includes minor mafic volcanic and clastic sedimentary rocks*

 *Green to purple basaltic flows and pyroclastic rocks; includes minor felsic volcanic rocks, clastic sedimentary rocks and gabbro*

St. Mary's Peninsula, particularly the southern portion, was hampered by thick bog cover. Samples were usually taken of the BC- or C-soil horizon, at a depth of about 0.5 m from hand-dug test pits or 0.5 to 1.0 m in roadcuts, quarries, and natural exposures along coasts or rivers. Sediment matrix samples (~1 kg) were collected in kraft-paper bags and submitted to the Geological Survey laboratory for geochemical analysis, including a suite of elements determined from AA and ICP techniques. Samples will be sent for external analysis for other elements, including gold, by INAA techniques. A total of 490 samples (including duplicates) were collected during this initial phase using a combination of road (truck and ATV) and helicopter-supported sampling. Results from this analyses will be released when they become available.

QUATERNARY HISTORY OVERVIEW

Much of the early work on the glaciation of the Avalon Peninsula suggested that the area was covered by eastward-flowing ice from the main part of the Island (Murray, 1883; Coleman, 1926; MacClintock and Twenhofel, 1940). However, the erosional evidence, mainly derived from striations (Taylor, 2001), suggests that the Avalon Peninsula maintained an independent ice cap during the late Wisconsinan (Chamberlin, 1895; Vhay, 1937; Summers, 1949; Jenness, 1963; Henderson, 1972; Catto, 1998). The main ice dome was likely at the head of St. Mary's Bay (Henderson, 1972; Catto, 1998), with ice flowing radially into Placentia Bay in the west, southward down St. Mary's Bay, eastward across the Trepassey sub-peninsula, and northward over the low cols into the Trinity and Conception bays' watersheds (Catto, 1998). Rogen moraines found north of St. Mary's Bay formed during this northward ice flow (Marich *et al.*, 2005). The radial flow from St. Mary's Bay had little effect on outlying peninsulas, which likely maintained their own ice caps (Summers, 1949; Catto, 1998). This is supported by striations and the provenance of clasts in till (Catto, 1998).

Ice flow on the Cape St. Mary's Peninsula was described by Catto (1998) based on the orientation of striations and streamlined glacial landforms. Catto (1998) suggested that the area maintained an ice centre in the northern part of the peninsula, which he termed the 'Castle Ridge' ice centre (Figure 3). Ice flow was radial from this centre, being drawn into Placentia and St. Mary's bays. On the northeastern side of the peninsula southward ice flow was recorded from the 'White Hearts Pond' ice centre (Figure 3). During the late Wisconsinan maximum, the St. Mary's Bay ice centre developed west of Great Colinet Island in central St. Mary's Bay. Ice flow was radial from this centre, directed northwestward in the northern part of the Cape St. Mary's Peninsula and southwestward in the southern part. During deglaciation, the collapse of the St. Mary's Bay ice centre led to the development of a series of smaller remnant ice centres, and large areas of stagnant ice. On the Cape St. Mary's Peninsula, small ice centres existed near Branch in the south from which eastward ice flow was recorded (Catto, 1998), and at Little Salmonier River in the north, where southward flow was recorded (Catto, 1998). The remainder of the area was covered by stagnant ice.

ICE-FLOW PATTERNS

STRIATION RECORD

Ice-flow indicators (mostly striations) were recorded from bedrock outcrops. These data supplemented previous measurements in the area, and indicate that the area was affected by two major ice-flow directions, both of which are tentatively assigned a late Wisconsinan age based on their fresh, unweathered appearance. The earliest flow was generally southward along the axis of St. Mary's Bay from a source north of the bay (White Hills Pond ice centre?), and along the east side of Placentia Bay. The source of the Placentia Bay ice is uncertain, but may have been from a source on the Isthmus of Avalon or from the White Hills Pond ice centre (Catto, 1998). There are few striated bedrock outcrops in the central part of the Cape St. Mary's Peninsula and none were found to confirm the radial flow from the Castle Ridge ice centre. The early ice flow was followed by a regional westward to southwestward ice flow that crossed the entire peninsula into Placentia Bay. This flow pattern is consistent with ice flow from the St. Mary's Bay ice centre (Catto, 1998). The regional ice flow was confluent with southward-flowing ice, in Placentia Bay, from the main Newfoundland ice centre (Brushett *et al.*, 2007).

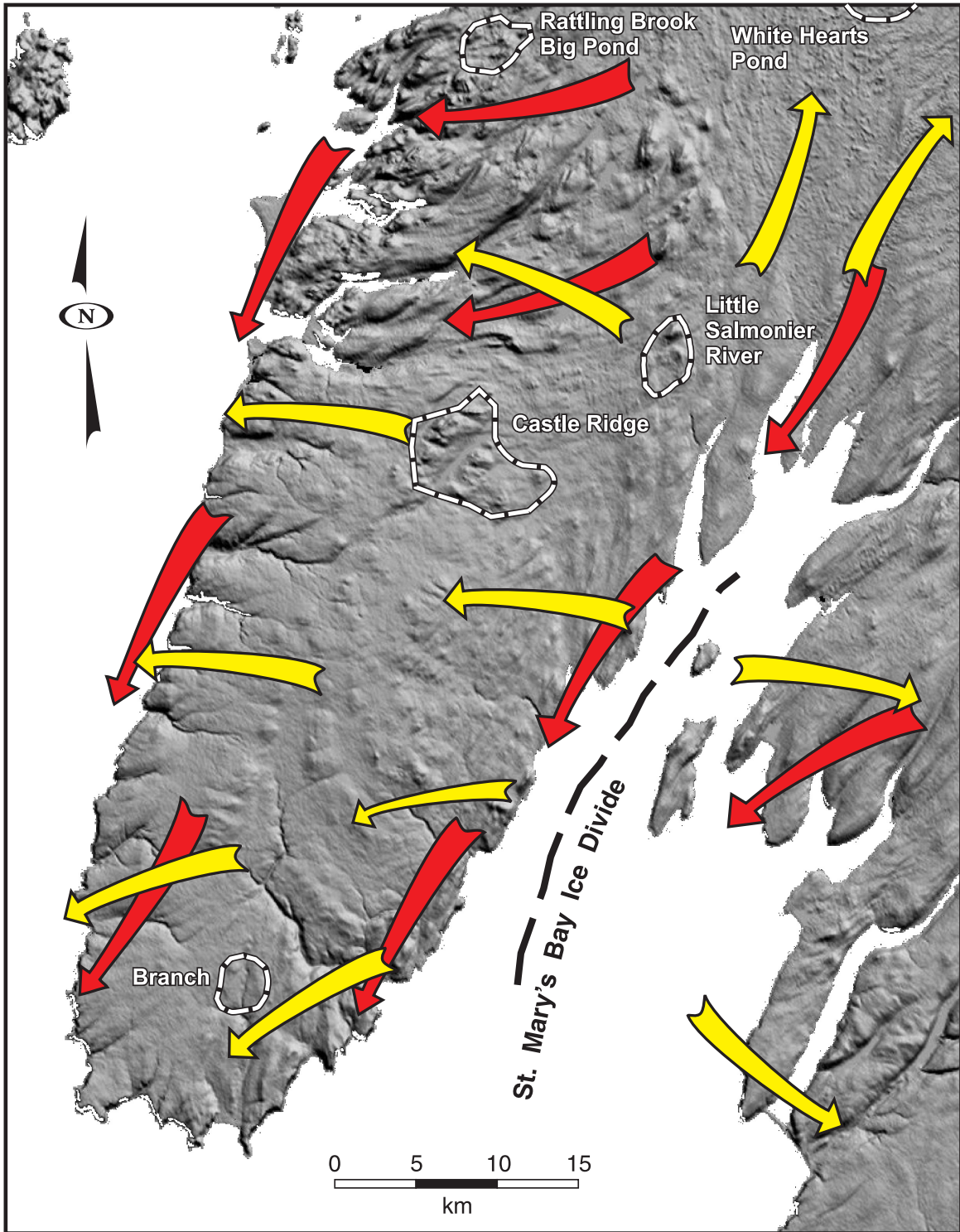


Figure 3. Ice-flow patterns across the Cape St. Mary's Peninsula overlain on the SRTM image. An early southward flow (red arrows) from various sources was crossed by a westward to southwestward flow over most of the peninsula (yellow arrows), from a source in St. Mary's Bay. The SRTM image shows lineated features in the north produced by active ice. Over most of the peninsula drainage channels are pronounced, suggesting that the area was covered by stagnating ice during regional deglaciation. The ice centres interpreted by Catto (1998) are also shown (white dashed line).

SRTM IMAGE

The SRTM image provides corroborative evidence of the sequence of events just described. In the northern part of the Cape St. Mary's Peninsula, streamlined landforms are consistent with ice movement into Placentia Bay through Southeast Arm, whereas southward ice movement into St. Mary's Bay is also evident (Figure 4). These streamlined features were also interpreted from aerial photographs (Catto and Taylor, 1998a-d). In addition, D. Liverman (personal communication, 2007) interprets small, randomly oriented moraines throughout most of the area from the SRTM image.

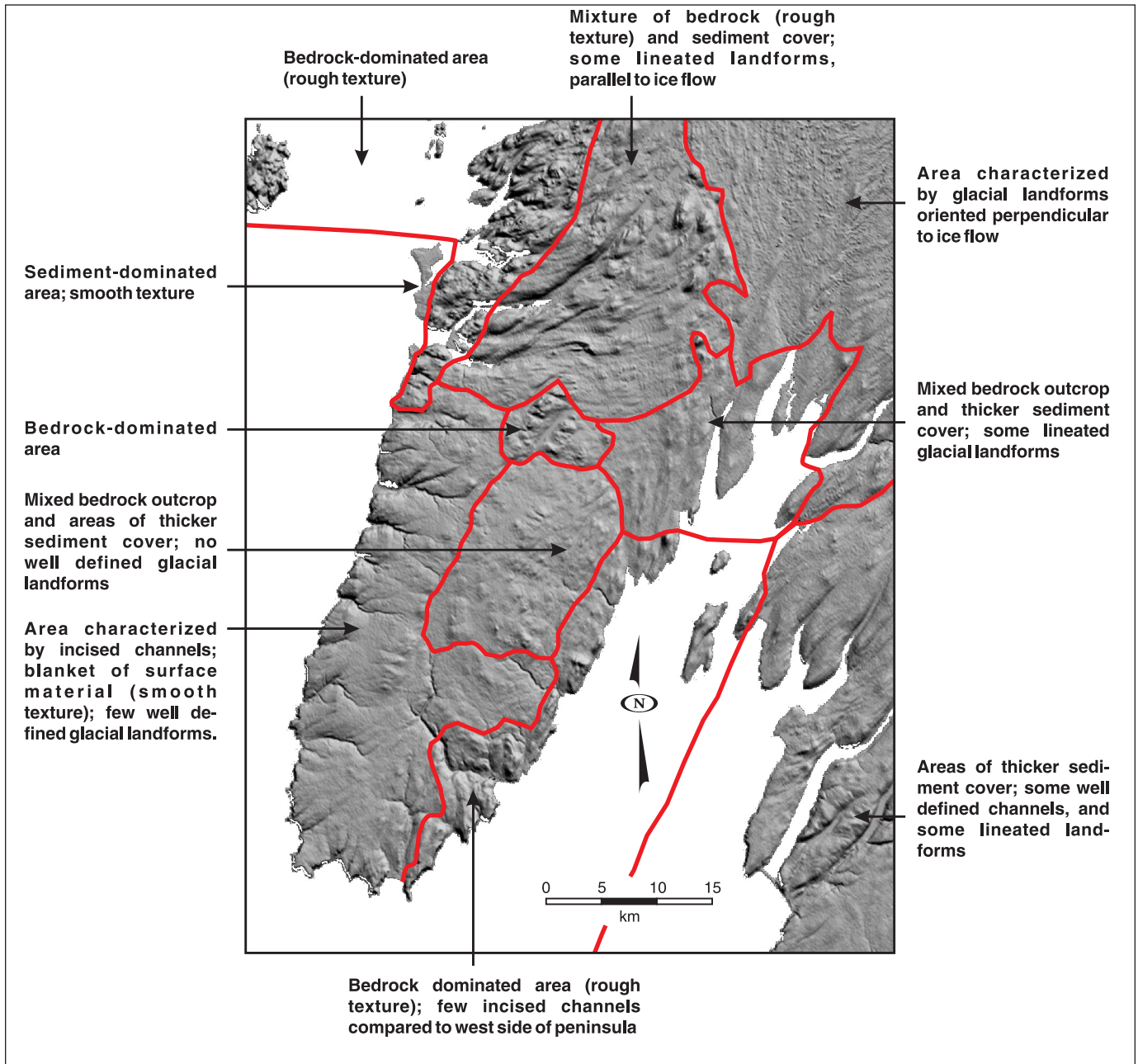


Figure 4. SRTM image of the Cape St. Mary's Peninsula. A preliminary interpretation of the image is provided.

Numerous, deeply incised valleys are obvious on the SRTM image. These extend coastward from the interior, and are interpreted as glaciofluvial meltwater channels from waning ice in the centre of the peninsula and are consistent with the interpretation of Catto (1998). The distribution of meltwater channels suggests that stagnant ice occupied the central part of the peninsula south of the Castle Ridge area. The moraine ridges described by D. Liverman (personal communication, 2007) are therefore interpreted as poorly oriented hummocky moraine, consistent with deposition in areas of stagnating ice.

SUMMARY OF QUATERNARY HISTORY

Only an initial preliminary interpretation of the sequence of glacial events can be presented. There is no absolute chronology for the area due to a lack of radiocarbon dateable material, and the glacial stratigraphy that is exposed at places around the Cape St. Mary's Peninsula has not been investigated in detail. In particular, thick exposures of glacial sediment at Branch, near St. Bride's and in Brierly Cove (north of Cape St. Mary's) require further attention.

The earliest recorded ice flow was generally southward along the margins of the Cape St. Mary's Peninsula. The source of ice on the east coast is uncertain, but likely originated from the White Hills Pond ice centre (Catto, 1998) to the north. This interpretation is supported by the orientation of striations and flutes along St. Mary's Bay and southward-directed striations. Southward-flowing ice along the Placentia Bay coastline was either from a source on the Isthmus, the White Hills Pond centre or main Newfoundland ice flowing into Placentia Bay. The extent of southward-flowing ice over the central part of the peninsula is unclear. There are no glacial landforms consistent with this flow direction, and no southward striations were recorded from bedrock outcrops examined. This early flow was followed by a regionally extensive westward to southwestward ice flow from the St. Mary's Bay ice centre, consistent with the reconstruction of Catto (1998). There is landform evidence consistent with westward flow in the northern part of the peninsula, but none elsewhere. The westward ice flow is recorded in the striation record.

During deglaciation, regional stagnation produced the ridges noted by D. Liverman (personal communication, 2007). Meltwater drainage was primarily westward into Placentia Bay, perhaps because St. Mary's Bay was still occupied by ice. During the Holocene, a period of paludification produced the extensive bogs characteristic of this area.

REGIONAL SURFICIAL SEDIMENT SAMPLING

SAMPLING AND SAMPLE PREPARATION METHODS

A regional till-sampling program was conducted using the surficial geology as a guide. Glaciofluvial, fluvial, marine, and aeolian sediments were not sampled. Most samples were from the C- or BC-soil horizon, taken at about 0.5 m depth in test pits, or 0.5 to 1.0 m depth in quarries or road cuts. In rare instances, the lack of surface sediment necessitated the sampling of bedrock detritus. Sample spacing was controlled by access as well as surficial geology, but was generally about 1 sample per 1 km² in areas of good access to 1 sample per 4 km² in areas where helicopter support was required. Duplicate field samples were collected from 41 sites. These data were used to determine data reproducibility. A total of 490 samples were collected in the field.

Data from 469 samples are presented (Figure 2), excluding the field duplicates. In the field, samples were placed in kraft-paper sample bags, and sent to the Geological Survey laboratory in St. John's, where they were air-dried in ovens at 40°C and dry-sieved through 180 µm stainless steel sieves.

GEOCHEMICAL ANALYSIS

Analytical work was carried out at the Geological Survey laboratory, with additional analyses from a commercial laboratory. The appended data listings contain all the field and analytical data from the sediment survey. To distinguish the different analytical methods–laboratories, the trace-element variables are labelled with a combination of the element name, a numeric code and the unit of measurement.

A complete list of variables is given in Table 1, and a full listing of field and geochemical data is contained in Appendix A.

ANALYTICAL METHODS

Gravimetric Analysis (LOI)

Organic carbon content was estimated from the weight loss on ignition (LOI) during a controlled combustion in which 1g aliquots of sample were gradually heated to 500°C in air over a 3 hour period. Accuracy can be judged from the results for reference materials (Table 2).

Inductively Coupled Plasma–Emission Spectrometry (ICP-ES)

For these analyses, the procedures outlined by Finch (1998) are followed. One gram of sample is weighed into a 125 ml Teflon beaker, and 5 ml of concentrated HCl and 5 ml of perchloric acid is added to each sample. The samples are placed on a hotplate at 200°C and evaporated to dryness, after which the beakers are half-filled with 10 percent hydrochloric acid and returned to the hotplate at 100°C. When the residue is completely dissolved the samples are removed, cooled and transferred to 50 ml volumetric flasks. One ml of 50 g/l boric acid is added to each sample to complex any residual hydrofluoric acid. The samples are made to volume and analyzed by ICP-ES (Licthe *et al.*, 1987). For most elements dissolution is total; exceptions are Cr from chromite, Ba from barite and Zr from zircon as these minerals are not usually completely dissolved. Accuracy can be judged from the results for reference materials (Table 2).

Values for the following elements were determined: Aluminum, barium, beryllium, calcium, cerium, cobalt, chromium, copper, dysprosium, iron, gallium, potassium, lanthanum, lithium, magnesium, manganese, molybdenum, sodium, niobium, nickel, phosphorus, lead, scandium, strontium, titanium, vanadium, yttrium, zinc and zirconium (Al₂, Ba₂, Be₂, Ca₂, Ce₂, Co₂, Cr₂, Cu₂, Dy₂, Fe₂, Ga₂, K₂, La₂, Li₂, Mg₂, Mn₂, Mo₂, Na₂, Nb₂, Ni₂, P₂, Pb₂, Rb₂, Sc₂, Sr₂, Ti₂, V₂, Y₂, Zn₂ and Zr₂, respectively).

Instrumental Neutron Activation Analysis (INAA)

These analyses were carried out at Activation Laboratories Ltd., Ancaster, Ontario. On average, 24 g of each sample was used for analysis, and the samples (with duplicates and control reference materials included incognito) were weighed and encapsulated in the Geological Survey laboratory in St. John's.

Table 1. Variable list and description of data

VARIABLE	DESCRIPTION	VARIABLE	DESCRIPTION
Sample	Unique sample ID	Li2 ppm	Lithium, ppm, by ICP
NTS	NTS sheet (1:50 000)	LOI	Loss on ignition
Easting	UTM map coordinate NAD 27	Lu1 ppm	Lutetium, ppm, by INAA
Northing	UTM map coordinate NAD 27	Mg2 pct	Magnesium, %, by ICP
Elev	Elevation of sample site (m)	Mn2 ppm	Manganese, ppm, by ICP
Zone	UTM zone	Mo1 ppm	Molybdenum, ppm, by INAA
Horizon	Soil horizon samples	Mo2 ppm	Molybdenum, ppm, by ICP
Depth	Sample depth (cm)	Na1 pct	Sodium, %, by INAA
Ag1 ppm	Silver, ppm, by INAA	Na2 pct	Sodium, %, by ICP
Al2 pct	Aluminum, %, by ICP	Nb2 ppm	Niobium, ppm, by ICP
As1 ppm	Arsenic, ppm, by INAA	Nd1 ppm	Neodymium, ppm, by INAA
As2 ppm	Arsenic, ppm, by ICP	Ni1 ppm	Nickel, ppm, by INAA
Au1 ppb	Gold, ppb, by INAA	Ni2 ppm	Nickel, ppm, by ICP
Ba1 ppm	Barium, ppm, by INAA	P2 ppm	Phosphorus, ppm, by ICP
Ba2 ppm	Barium, ppm, by ICP	Pb2 ppm	Lead, ppm, by ICP
Be2 ppm	Beryllium, ppm, by ICP	Rb1 ppm	Rubidium, ppm, by INAA
Br1 ppm	Bromine, ppm, by INAA	Rb2 ppm	Rubidium, ppm, by ICP
Ca1 pct	Calcium, %, by INAA	Sb1 ppm	Antimony, ppm, by INAA
Ca2 pct	Calcium, %, by ICP	Sc1 ppm	Scandium, ppm, by INAA
Cd2 ppm	Cadmium, ppm, by ICP	Sc2 ppm	Scandium, ppm, by ICP
Ce1 ppm	Cerium, ppm, by INAA	Se1 ppm	Selenium, ppm, by INAA
Ce2 ppm	Cerium, ppm, by ICP	Sm1 ppm	Samarium, ppm, by INAA
Co1 ppm	Cobalt, ppm, by INAA	Sn1 ppm	Tin, ppm, by INAA
Co2 ppm	Cobalt, ppm, by ICP	Sr1 ppm	Strontium, ppm, by INAA
Cr1 ppm	Chromium, ppm, by INAA	Sr2 ppm	Strontium, ppm, by ICP
Cr2 ppm	Chromium, ppm, by ICP	Ta1 ppm	Tantalum, ppm, by INAA
Cs1 ppm	Cesium, ppm, by INAA	Tb1 ppm	Terbium, ppm, by INAA
Cu2 ppm	Copper, ppm, by ICP	Th1 ppm	Thorium, ppm, by INAA
Dy2 ppm	Dysprosium, ppm, by ICP	Ti2 ppm	Titanium, ppm, by ICP
Eu1 ppm	Europium, ppm, by INAA	U1 ppm	Uranium, ppm, by INAA
Fe1 pct	Iron, %, by INAA	V2 ppm	Vanadium, ppm, by ICP
Fe2 pct	Iron, %, by ICP	W1 ppm	Tungsten, ppm, by INAA
Hf1 ppm	Hafnium, ppm, by INAA	Y2 ppm	Yttrium, ppm, by ICP
Hg1 ppm	Mercury, ppm, by INAA	Yb1 ppm	Ytterbium, ppm, by INAA
Ir1 ppm	Iridium, ppm, by INAA	Zn1 ppm	Zinc, ppm, by INAA
K2 pct	Potassium, %, by ICP	Zn2 ppm	Zinc, ppm, by ICP
La1 ppm	Lanthanum, ppm, by INAA	Zr1 ppm	Zirconium, ppm, by INAA
La2 ppm	Lanthanum, ppm, by ICP	Zr2 ppm	Zirconium, ppm, by ICP

Table 2. Accuracy of till-geochemical data by ICP-ES. Results of analyses of CANMET reference samples TILL-1 to -4. Observed values (Obs) are compared against recommended values (Rec). Recommended values are from Lynch (1996).

		Till-1	N=8	Till-2	N=7	Till-3	N=6	Till-4	N=7
		Obs	Rec	Obs	Rec	Obs	Rec	Obs	Rec
Al2	%	6.2	7.3	7.3	8.5	5.8	6.5	6.7	7.6
As2	ppm	16.7		24.8		79.8		101.7	
Ba2	ppm	707.9	702.0	538.8	540.0	494.1	489.0	394.7	396.0
Be2	ppm	1.2	2.4	3.1	4.0	1.1	2.0	2.8	3.7
Ca2	%	1.8	1.9	0.9	0.9	1.9	1.9	0.9	0.9
Cd2	ppm	0.0		0.1		-0.1		0.2	
Ce2	ppm	67.1	71.0	91.4	98.0	39.8	42.0	72.8	78.0
Co2	ppm	20.6	18.0	18.1	15.0	15.4	15.0	12.2	8.0
Cr2	ppm	55.9	65.0	61.9	74.0	99.7	123.0	39.8	53.0
Cu2	ppm	48.0	47.0	167.1	150.0	22.3	22.0	270.4	237.0
Dy2	ppm	4.8		3.2		1.9		2.9	
Fe2	%	4.8	4.8	3.9	3.8	2.8	2.8	4.0	4.0
K2	%	1.7	1.8	2.4	2.6	1.9	2.0	2.6	2.7
La2	ppm	26.1	28.0	38.2	44.0	19.5	21.0	35.7	41.0
Li2	ppm	15.1	15.0	44.3	47.0	21.1	21.0	28.0	30.0
Mg2	%	1.3	1.3	1.1	1.1	1.0	1.0	0.8	0.8
Mn2	ppm	1438.4	1420.0	794.4	780.0	516.3	520.0	511.6	490.0
Mo2	ppm	-1.0	2.0	12.6	14.0	-1.0	16.9	14.3	
Na2	%	2.0	2.0	1.6	1.6	1.9	2.0	1.7	1.8
Nb2	ppm	11.2	10.0	16.6	20.0	7.2	7.0	14.8	15.0
Ni2	ppm	27.1	24.0	33.4	32.0	39.0	39.0	19.7	17.0
P2	ppm	980.9	930.0	746.9	750.0	522.2	490.0	926.8	880.0
Pb2	ppm	20.7	22.0	29.2	31.0	25.5	26.0	50.9	50.0
Rb2	ppm	45.8		160.4		58.3		185.0	
Sc2	ppm	15.0	13.0	13.2	12.0	11.1	10.0	11.8	10.0
Sr2	ppm	312.7	291.0	162.3	144.0	324.4	300.0	129.8	109.0
Ti2	ppm	4869.2	5990.0	4545.4	5300.0	2757.0	2910.0	4487.8	4840.0
V2	ppm	96.0	99.0	77.0	77.0	60.9	62.0	68.1	67.0
Y2	ppm	26.8	38.0	17.2	40.0	12.5	17.0	15.4	33.0
Zn2	ppm	90.5	98.0	118.7	130.0	54.7	56.0	67.9	70.0
Zr2	ppm	77.5	502.0	77.9	390.0	62.7	390.0	70.1	385.0

Samples were irradiated using flux wires and an internal standard (1 for 11 samples) at a thermal neutron flux of 7×10^{11} n/cm²s. After 7 days (to allow Na²⁴ to decay), samples are counted on a high purity Ge detector with a resolution of better than 1.7 KeV. Using the flux wires, the decay-corrected activities are compared to a calibration developed from multiple certified international reference materials. The standard present is only a check on accuracy of the analysis and is not used for calibration purposes. Ten to thirty percent of the samples are checked by re-measurement. Accuracy can be judged from the results for reference materials (Table 3).

Total contents of the following elements were determined quantitatively: silver, arsenic, gold, barium, bromine, calcium, cerium, cobalt, chromium, cesium, europium, iron, hafnium, mercury, iridium, lanthanum, lutetium, molybdenum, sodium, neodymium, nickel, rubidium, antimony, scandium, selenium, samarium, tin, strontium, tantalum, terbium, thorium, uranium, tungsten, ytterbium, zinc and zirconium. (Ag1, As1, Au1, Ba1, Br1, Ca1, Ce1, Co1, Cr1, Cs1, Eu1, Fe1, Hf1, Hg1, Ir1, La1, Lu1, Mo1, Na1, Nd1, Ni1, Rb1, Sb1, Sc1, Se1, Sm1, Sn1, Sr1, Ta1, Tb1, Th1, U1, W1 Yb1, Zn1 and Zr1 respectively).

QUALITY CONTROL

Data quality was monitored using laboratory duplicates (analytical precision only). These data are verified at the laboratory and are not included in this report, although they are available from the author upon request. Accuracy estimates are provided by the results from standard reference materials analyzed with them (Tables 2 and 3). These data show that for almost all elements, with Zr2 as an exception, all data are of high quality.

Data from duplicate samples taken from the same site are presented in Appendix B. The extent of correlation (Pearson) of these graphs provide a measure of data reproducibility that is used to estimate data quality. Identical results of duplicate samples show a straight line and a correlation coefficient of 1.000. For some elements, the analysis of duplicates yield poor correlations, commonly because samples contain levels that are close to the detection limit for that element. Field duplicate data results from Ag1, Ni1, Ir1, Hg1, Se1, Sn1 and W1 were all below detection limit and are included in the graphs. Most samples yielded results below detection limit for Au1, Br1, Ca1, Cs1, Mo1, Ta1, Tb1, U1, Zn1 and Zr1, and for this reason it is difficult to evaluate data quality for these elements.

It should be emphasized that for mineral exploration, the relative variation of an element is of primary concern. Of the 44 elements determined, 16 were determined by both ICP and INAA (As, Ba, Ca, Ce, Co, Cr, Fe, La, Mo, Na, Ni, Rb, Sc, Sr, Zn, Zr). To reduce the size of the data for presentation and statistical analysis, for these 16, the data from the method with the best quality determined from comparison with laboratory and field duplicates have been used (*i.e.*, As1, Ba2, Ca2, Ce2, Co2, Cr2, Fe2, La2, Mo1, Na2, Ni2, Rb2, Sc2, Sr2, Zn2, Zr2), although all are presented in the data listing (Appendix A). A summary of field duplicate and control data is included in this report, and detailed data are available from the author upon request.

STATISTICAL ANALYSIS – FREQUENCY DISTRIBUTIONS

The frequency distributions of the geochemical data were examined using the Jenks optimization method, also known as the goodness of variance fit (Jenks, 1967) found within the ArcMap GIS application. The method identifies natural breaks in the dataset, and has replaced the selection of breaks using

Table 3. Accuracy of till-geochemical data by INAA and gravimetry. Results of analyses of CANMET reference samples TILL-1 to -4. Observed values (Obs) are compared against recommended values (Rec). Recommended values are from Lynch (1996).

		Till-1	N=7	Till-2	N=6	Till-3	N=8	Till-4	N=7
		Obs	Rec	Obs	Rec	Obs	Rec	Obs	Rec
Ag1	ppm	2.5		2.5		2.5		2.5	
As1	ppm	19.3	18.0	27.94	26.0	79.89	87.0	114.57	111.0
Au1	ppb	10.58	13.0	2.86	2.0	2.31	6.0	1.86	5.0
Ba1	ppm	676.67	702.0	572.86	540.0	572.5	489.0	372.14	395.0
Br1	ppm	6.1	6.4	11.07	12.2	5.78	4.5	7.96	8.6
Ca1	%	0.75		0.5		1.0		0.71	
Ce1	ppm	67.5	71.0	98.43	98.0	47.88	42.0	85.71	78.0
Co1	ppm	16.5	18.0	13.71	15.0	13.25	15.0	7.71	8.0
Cr1	ppm	64.17	65.0	74.57	74.0	121.25	123.0	51.43	53.0
Cs1	ppm	1.17	1.0	8.71	12.0	3.06	1.7	9.43	12.0
Eu1	ppm	1.68	1.3	1.37	1.0	1.03	0.5	0.96	0.5
Fe1	%	4.71	4.8	3.8	3.8	2.88	2.8	3.97	4.0
Hf1	ppm	11.83	13.0	10.71	11.0	6.88	8.0	12.57	10.0
Hg1	ppm	0.5		0.5		0.5		0.5	
Ir1	ppm	2.5		2.5		2.5		2.5	
La1	ppm	27.95	28.0	46.94	44.0	22.6	21.0	44.17	41.0
Lu1	ppm	0.68	0.6	0.64	0.6	0.28	<0.5	0.59	0.5
Mo1	ppm	0.5	<5.0	19.71	14.0	3.44	<5.0	12.71	16.0
Na1	%	2.08	2.0	1.69	1.6	1.9	1.9	1.91	1.8
Nd1	ppm	17.0	26.0	26.86	36.0	10.31	16.0	25.0	30.0
Ni1	ppm	10.0		10.0		10.0		10.0	
Rb1	ppm	27.0	44.0	124.0	143.0	56.63	55.0	146.14	161.0
Sb1	ppm	6.03	7.8	0.81	0.8	0.79	0.9	1.34	1.0
Sc1	ppm	13.35	13.0	12.2	12.0	9.66	10.0	10.76	10.0
Se1	ppm	0.5		0.5		0.5		0.5	
Sm1	ppm	5.38	5.9	6.69	7.4	3.64	3.3	5.5	6.1
Sn1	ppm	0.01		0.01		0.01		0.01	
Sn1	ppm	0.03		0.03		0.03		0.03	
Ta1	ppm	0.37	0.7	1.24	1.9	0.25	<0.5	0.63	1.6
Tb1	ppm	0.5	1.1	0.45	1.2	0.25	<0.5	0.88	1.1
Th1	ppm	6.57	5.6	20.36	18.4	6.64	4.6	19.06	17.4
U1	ppm	1.98	2.2	6.34	5.7	1.35	2.1	5.97	5.0
W1	ppm	0.5	<4.0	2.07	<2.0	1.81	<4.0	159.71	204.0
Yb1	ppm	4.17	3.9	4.2	3.7	1.95	1.5	3.9	3.4
Zn1	ppm	31.67		63.93		2.5		15.0	
Zr1	%	0.04		0.01		0.01		0.03	
LOI	%	6.4	6.3	7.0	6.8	3.9	3.6	4.7	4.4

cumulative frequency plots (*cf.*, Batterson and Taylor, 2001). Comparison of the two methods produced similar subdivisions of the data. Breaks in slope of the curves were used to subdivide the element values into 4-6 natural population groups. These groups are represented by symbols that increase in size with increasing element levels in Figure 5 to Figure 53. Statistics (maximum, minimum, median, mean, standard deviation) were generated from the Excel computer application, and are presented in Table 4. A correlation matrix is shown in Table 5.

INTERPRETATION OF GEOCHEMICAL DATA

Dot plot maps of selected elements (As, Cu, Au, Ni, U and Zn) are presented in Figures 5 to 10 respectively. Other element plots are presented in Appendix C, except for Ag and Hg where no analyses were above detection limit. Individuals and companies are encouraged to undertake their own interpretation of the presented data, the following being a preliminary guide.

ARSENIC (As)

In some areas, arsenic has been considered a pathfinder for gold (*e.g.*, Lett *et al.*, 1999) although not in others (*e.g.*, Campbell and Schreiner, 1989). In this study, arsenic (Figure 5) values generally bear little areal relationship to the distribution of gold, and show no correlation (0.004). The highest value (65 ppm) is found in sediment overlying the Cambrian sedimentary rocks of the Harcourt and Adeyton groups, which have been extensively intruded by Silurian diorite, diabase and gabbro sills. Arsenic is correlated with iron (0.72), antimony (0.52), copper (0.52) and thorium (0.52) (Table 5). Field duplicates showed a high degree of correlation (0.957; Appendix B), as did laboratory duplicates (not included), and the data is thus considered accurate and precise.

Arsenic is also a factor in human health. The Canadian soil-quality guidelines indicate values below 12 ppm are acceptable for residential use. About 20% of data points are above this value within the study area. The southern part of the Cape St. Mary's Peninsula is enriched in arsenic, although most areas are removed from communities, with the exception of Point Lance where a series of high values (up to 48 ppm) were recorded. The proximity of sites that have high arsenic values to local or regional water supplies should be examined with a view to further testing of water quality in the region.

COPPER (Cu)

The study area has several copper showings within the Bull Arm Formation, and an abandoned mine within the Heart's Desire Formation. All are part of the Musgravetown Group. However, apart from the highest value (167 ppm) found adjacent to a copper showing near the community of Point Verde, the till geochemistry generally poorly reflects enrichment in sediments overlying these rock units (Figure 6).

A cluster of relatively high values (up to 121 ppm) were found in sediments overlying the Harcourt Group rocks and associated Silurian sills in the southern part of the peninsula. Of interest is the linear trend of copper enrichment in the western and southern part of the field area. This linear trend follows the roads through the area. Copper values away from the road are significantly lower, reducing the likelihood of adjacent mineralization. A similar observation was made by Batterson and Taylor (2007) for the northern part of the Burin Peninsula. An explanation is unclear, *e.g.*, road upgrades postdates the use of lead-

Table 4. Units, detection limits, ranges, medians and standard deviations of geochemical data. Values below detection are coded as half of the detection limit value

		Detection limit	Maximum	Minimum	Median	Mean	Standard Deviation
Ag1	ppm	5.0	2.5	2.5	2.5	2.5	0.0
Al2	%	0.01	9.95	5.11	6.68	6.6	0.7
As1	ppm	0.5	64.6	0.25	9.75	8.1	6.94
As2	ppm	2.0	57.63	1.0	8.69	7.09	5.92
Au1	ppb	1.0	17.0	0.5	1.28	0.5	2.42
Ba1	ppm	50.0	2040.0	2.5	462.0	460.0	182.42
Ba2	ppm	50.0	1351.5	205.48	459.97	442.38	118.13
Be2	ppm	0.2	3.44	0.05	1.2	1.17	0.51
Br1	ppm	0.5	432.0	0.25	58.06	35.2	70.03
Ca1	%	1.0	4.0	0.5	0.64	0.5	0.49
Ca2	%	0.01	2.96	0.01	0.59	0.5	0.42
Cd2	ppm	0.1	0.43	0.05	0.07	0.05	0.05
Ce1	ppm	3.0	230.0	19.0	61.01	58.0	23.85
Ce2	ppm	2.0	317.86	15.48	68.3	63.27	29.1
Co1	ppm	1.0	98.0	0.5	12.36	10.0	10.15
Co2	ppm	2.0	101.6	5.12	19.17	16.95	9.62
Cr1	ppm	5.0	477.0	2.5	55.08	43.0	48.25
Cr2	ppm	2.0	4444.0	10.75	47.08	35.29	39.89
Cs1	ppm	1.0	20.0	0.5	3.04	3.0	1.96
Cu2	ppm	2.0	167.35	0.5	24.92	20.29	18.31
Dy2	ppm	0.2	10.18	0.49	4.05	4.01	1.34
Eu1	ppm	0.2	3.8	0.1	1.32	1.3	0.42
Fe1	%	0.01	12.8	0.73	3.84	3.44	1.59
Fe2	%	0.01	13.38	0.72	4.02	3.65	1.58
Hf1	ppm	1.0	18.0	2.0	6.77	6.0	2.3
Hg1	ppm	1.0	0.5	0.5	0.5	0.5	0.0
Ir1	ppb	5.0	17.0	2.5	2.73	2.5	1.47
K2	%	0.01	3.72	0.4	1.5	1.43	0.4
La1	ppm	0.5	57.8	7.5	24.08	23.0	6.97
La2	ppm	1.0	52.13	7.3	23.99	23.77	6.35
Li2	ppm	0.2	102.31	5.31	29.82	27.41	13.6
LOI	%		39.47	1.17	8.45	6.22	7.14
Lu1	ppm	0.05	1.09	0.03	0.52	0.51	0.11
Mg2	%	0.01	4.27	0.15	0.7	0.63	0.36
Mn2	ppm	2.0	8169.69	55.2	938.0	711.1	832.18
Mo1	ppm	1.0	32.0	0.5	1.89	0.5	3.38
Mo2	ppm	1.0	12.77	0.5	0.71	0.5	1.1
Na1	%	0.01	3.0	0.01	1.86	1.97	0.58
Na2	%	0.01	3.38	0.52	1.94	2.0	0.64
Nb2	ppm	2.0	76.11	8.45	17.15	16.08	5.78

Table 4. Continued

		Detection limit	Maximum	Minimum	Median	Mean	Standard Deviation
Nd1	ppm	5.0	111.0	2.50	20.27	18.0	14.35
Ni1	ppm	20.0	330.0	10.0	19.55	10.0	40.75
Ni2	ppm	2.0	279.0	1.44	21.34	16.01	22.15
P2	ppm	5.0	1718.0	83.19	664.13	646.84	260.6
Pb2	ppm	2.0	101.95	0.5	19.69	15.95	13.03
Rb1	ppm	5.0	150.0	2.5	41.61	46.0	32.85
Rb2	ppm		171.06	27.76	66.27	60.25	24.4
Sb1	ppm	0.1	3.9	0.05	0.56	0.5	0.36
Sc1	ppm	0.1	24.6	6.9	12.44	11.9	2.93
Sc2	ppm	1.0	28.1	6.53	14.48	14.0	3.19
Se1	ppm	1.0	15.0	0.5	0.57	0.5	0.79
Sm1	ppm	0.1	13.6	1.3	4.55	4.4	1.4
Sn1	ppm	0.01	0.01	0.01	0.0	0.01	0.0
Sr1	%	0.05	0.09	0.03	0.03	0.03	0.0
Sr2	ppm	2.0	403.44	43.68	170.05	159.87	59.57
Ta1	ppm	0.2	7.4	0.1	0.63	0.1	1.0
Tb1	ppm	0.5	2.4	0.25	0.5	0.25	0.37
Th1	ppm	0.2	15.8	3.8	8.38	8.0	1.81
Ti2	ppm	5.0	15896.97	3116.45	6137.7	5966.34	1319.07
U1	ppm	0.5	18.5	0.25	2.41	2.5	1.42
V2	ppm	5.0	313.27	16.35	85.7	80.05	32.59
W1	ppm	1.0	11.0	0.5	0.67	0.5	0.89
Y2	ppm	2.0	50.32	7.91	21.77	21.42	5.82
Yb1	ppm	0.2	7.1	1.4	3.37	3.3	0.62
Zn1	ppm	50.0	220.0	2.5	27.13	2.5	44.99
Zn2	ppm	2.0	274.48	15.21	64.4	61.51	25.51
Zr1	%	0.01	0.1	0.01	0.01	0.01	0.02
Zr2	ppm	2.0	366.44	50.66	83.37	79.98	18.86

ed gasoline. Elevated values may be related to weathering in roadcuts, but further research will be required to determine if this is, indeed, the case.

Copper is moderately to well correlated with zinc (0.79), cobalt (0.68), manganese (0.68), lithium (0.64) and chromium (0.61) (Table 5). Field duplicates showed a high degree of correlation (0.893; Appendix B), as did laboratory duplicates (not included), and the data is thus considered accurate and precise.

GOLD (Au)

The gold in till (Figure 7) data is difficult to interpret, and shows a spotty distribution. The small (<1 kg) sample size is likely a factor. Caution must be exercised when interpreting anomalies, due to the

Table 5. Correlation matrix

	Al2	As1	Au1	Ba2	Be2	Br1	Cs2	Cd2	Ce2	Co2	Cr2	Cs1	Cu2	Dy2	Eu1	Fe2	Hf1	Ir1	K2	La2	Li2	LOI	Lu1	Mg2	Mn2	
Al2	1.00																									
As1	0.54	1.00																								
Au1	0.05	0.00	1.00																							
Ba2	0.49	0.38	0.06	1.00																						
Be2	0.63	0.44	0.01	0.55	1.00																					
Br1	0.14	0.17	-0.02	0.08	-0.13	0.05	1.00																			
Cs2	0.06	0.08	0.02	-0.18	0.10	0.09	0.13	1.00																		
Cd2	0.30	0.13	0.02	0.16	0.71	-0.30	-0.14	0.19	1.00																	
Ce2	0.35	0.25	0.02	0.05	0.36	-0.13	0.03	0.49	0.31	1.00																
Co2	0.48	0.49	0.00	0.16	0.23	0.11	0.04	0.34	-0.01	0.63	1.00															
Cr2	0.53	0.49	0.04	0.55	0.41	0.05	-0.22	0.10	0.16	0.25	0.36	1.00														
Cs1	0.47	0.52	-0.02	0.18	0.54	-0.14	0.00	0.47	0.39	0.68	0.61	0.32	1.00													
Dy2	0.08	-0.13	0.02	-0.01	0.51	-0.16	0.11	0.19	0.71	0.18	-0.22	-0.02	0.19	1.00												
Eu1	0.20	0.05	0.08	0.20	0.58	-0.28	0.15	0.25	0.62	0.34	-0.01	0.13	0.37	0.71	1.00											
Fe2	0.56	0.71	0.02	0.17	0.33	0.33	-0.12	0.32	0.14	0.47	0.69	0.44	0.59	-0.10	0.03	1.00										
Hf1	-0.16	-0.01	-0.02	-0.11	-0.05	-0.14	-0.22	-0.01	0.03	0.00	-0.05	0.05	-0.06	0.02	-0.02	-0.13	1.00									
Ir1	0.20	0.11	-0.03	0.10	0.07	-0.02	0.04	0.02	0.22	0.27	0.11	0.22	-0.06	0.00	0.00	0.23	0.03	1.00								
K2	0.60	0.35	0.05	0.80	0.67	-0.30	-0.27	-0.18	0.36	0.05	0.12	0.58	0.19	0.08	0.18	0.17	-0.08	0.08	1.00							
La2	0.45	0.24	0.01	0.39	0.79	-0.31	0.06	0.10	0.70	0.33	0.12	0.28	0.48	0.64	0.74	0.16	-0.05	0.07	0.43	1.00						
Li2	0.66	0.45	-0.03	0.27	0.67	-0.22	-0.33	0.14	0.51	0.53	0.51	0.40	0.64	0.19	0.27	0.46	-0.04	0.16	0.47	0.57	1.00					
LOI	0.24	0.23	0.05	-0.16	-0.20	0.86	-0.14	0.12	-0.30	-0.06	0.23	0.16	-0.07	-0.26	0.12	-0.24	0.11	-0.14	0.27	0.10	-0.11	-0.09	1.00			
Lu1	0.37	0.25	-0.02	0.16	0.30	-0.13	0.27	0.44	0.19	0.74	0.83	0.23	0.68	0.08	0.23	0.50	-0.12	0.29	0.10	0.29	0.52	-0.07	-0.31	1.00		
Mg2	0.28	0.20	0.04	0.25	0.53	-0.17	-0.06	0.26	0.44	0.50	0.24	0.24	0.43	0.33	0.43	0.26	-0.10	0.03	0.26	0.46	0.40	-0.07	-0.01	0.34	1.00	
Mn2	0.33	0.63	-0.01	0.24	0.28	0.05	-0.17	-0.02	0.08	0.02	0.28	0.28	0.40	0.23	0.36	0.29	0.35	0.10	0.21	0.05	0.26	0.11	-0.06	0.08	-0.01	
Na2	-0.49	-0.55	-0.08	-0.19	-0.15	-0.48	0.29	-0.17	0.14	-0.26	-0.56	-0.32	0.33	0.15	-0.67	0.03	-0.15	-0.21	-0.21	0.05	-0.26	-0.65	0.01	-0.23	-0.16	
Nb2	0.07	0.01	-0.05	-0.10	0.11	-0.08	-0.11	0.18	0.27	0.13	0.09	0.08	0.07	0.13	0.13	0.18	0.15	0.10	0.11	0.09	0.12	-0.01	0.23	0.13	0.04	
Ni1	0.27	0.34	-0.01	0.18	0.43	-0.11	-0.10	0.18	0.36	0.29	0.34	0.26	0.40	0.23	0.36	0.29	0.35	0.20	0.21	0.45	0.35	-0.09	-0.24	0.29	0.29	
Ni2	0.08	0.03	0.02	0.03	0.03	-0.05	0.04	0.10	0.03	0.29	0.32	0.02	0.20	-0.06	-0.02	0.19	0.00	0.13	-0.04	0.04	0.17	-0.04	-0.13	0.34	0.09	
P2	0.37	0.24	0.04	0.06	0.39	0.22	-0.02	0.32	0.42	0.34	0.20	0.16	0.38	0.38	0.37	0.47	-0.19	0.03	0.11	0.32	0.19	0.36	0.05	0.16	0.28	
Pb2	0.22	0.40	0.01	0.19	0.32	0.00	-0.05	0.38	0.14	0.33	0.21	0.30	0.51	0.10	0.27	0.28	0.04	0.00	0.14	0.26	0.28	0.05	0.08	0.16	0.28	
Rb2	0.71	0.55	0.04	0.69	0.60	-0.13	-0.38	-0.09	0.24	0.18	0.38	0.69	0.31	-0.13	0.03	0.43	-0.07	0.15	0.88	0.34	0.60	0.04	0.15	0.21	0.27	
Sb1	0.19	0.52	0.03	0.37	0.30	-0.10	0.05	0.13	0.08	0.11	0.21	0.37	0.45	-0.04	0.21	0.32	0.16	0.06	0.26	0.25	0.14	-0.02	0.07	0.12	0.13	
Sc2	0.68	0.50	0.07	0.46	0.50	0.10	0.18	0.24	0.18	0.46	0.60	0.50	0.55	0.07	0.27	0.62	-0.16	0.12	0.37	0.41	0.45	0.20	-0.03	0.51	0.38	
Se1	0.01	0.00	-0.03	-0.04	0.00	0.07	-0.05	0.22	-0.03	-0.01	0.05	0.07	0.00	-0.04	-0.02	0.10	0.02	-0.01	-0.03	-0.05	0.00	0.15	-0.04	0.00	-0.03	
Sm1	0.27	0.08	0.08	0.23	0.66	-0.20	0.00	0.06	0.20	0.70	0.27	-0.06	0.15	0.34	0.76	0.89	0.04	-0.17	-0.01	0.28	0.78	0.36	-0.22	0.19	0.16	0.49
Sn1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sr2	-0.32	-0.26	-0.06	0.03	-0.21	-0.20	0.84	-0.02	-0.17	-0.11	-0.21	-0.26	-0.12	0.07	0.15	-0.28	-0.07	-0.03	-0.31	0.04	-0.40	-0.32	0.00	-0.16	-0.16	
Ta1	-0.04	-0.09	0.04	-0.07	0.10	-0.06	-0.03	0.04	0.17	-0.04	-0.10	-0.04	-0.01	0.14	0.09	-0.04	0.08	0.02	0.04	0.11	0.03	-0.09	0.13	-0.05	0.02	
Tb1	0.06	-0.02	0.11	0.12	0.38	-0.20	-0.01	0.17	0.46	0.23	-0.04	0.09	0.22	0.49	0.47	-0.01	0.09	-0.07	0.14	0.38	0.17	-0.16	0.09	0.10	0.33	
Th1	0.63	0.52	0.00	0.40	0.53	0.13	-0.40	-0.09	0.29	0.08	0.25	0.57	0.28	0.04	0.16	0.39	0.00	0.04	0.56	0.37	0.49	0.23	0.16	0.03	0.25	
Ti2	-0.09	-0.07	0.00	-0.14	-0.29	-0.01	0.14	0.29	-0.12	0.33	0.27	0.11	0.07	-0.14	-0.04	0.23	0.03	0.14	-0.18	-0.15	-0.11	0.10	0.03	0.27	-0.04	
U1	0.16	0.16	-0.06	0.11	0.18	0.00	-0.13	-0.08	0.02	-0.02	0.06	0.18	0.03	-0.03	0.04	0.09	0.17	0.05	0.14	0.09	0.07	0.07	0.13	-0.06	0.02	
V2	0.41	0.40	0.05	0.22	0.05	0.20	0.10	0.32	-0.17	0.50	0.72	0.45	0.44	-0.36	-0.10	0.68	-0.09	0.25	0.12	0.06	0.22	0.37	-0.14	0.54	0.15	
W1	0.10	0.13	-0.06	0.11	0.02	0.06	-0.02	0.02	-0.05	0.03	0.10	0.12	0.06	-0.11	-0.07	0.12	-0.04	0.22	0.05	0.01	0.09	0.05	0.01	0.03	-0.01	
Y2	-0.02	-0.22	0.00	0.05	0.49	-0.31	0.18	0.14	0.67	0.11	-0.31	-0.05	0.11	0.95	0.68	-0.24	0.05	-0.09	0.13	0.61	0.10	-0.40	0.35	0.02	0.28	
Yb1	0.04	-0.05	0.09	0.18	0.33	-0.16	-0.14	0.05	0.33	0.04	-0.21	0.29	-0.04	0.45	0.29	-0.15	0.44	-0.07	0.30	0.27	0.04	-0.20	0.79	-0.13	0.11	
Zn2	0.47	0.39	-0.02	0.24	0.65	-0.24	-0.03	0.40	0.52	0.68	0.47	0.33	0.79	0.40	0.45	0.43	-0.06	0.17	0.32	0.59	0.74	-0.23	-0.04	0.64	0.48	
Zr2	0.02	-0.14	-0.04	-0.07	0.15	-0.12	-0.28	-0.02	0.28	-0.06	-0.13	-0.03	-0.08	0.23	0.07	-0.12	0.26	-0.03	0.15	0.08	0.05	-0.13	0.33	-0.10	-0.01	

Table 5. Continued

	Mo2	Na2	Nb2	Nd1	Ni1	P2	Pb2	Rb2	Sb1	Sc2	Se1	Sm1	Sn1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2	Yb1	Zn2	Zr2
1.00																									
-0.25	1.00																								
0.28	0.05	1.00																							
0.22	-0.12	0.05	1.00																						
-0.01	-0.08	0.05	0.04	1.00																					
0.10	-0.24	0.18	0.21	0.02	1.00																				
0.10	-0.31	-0.12	0.23	0.00	0.21	1.00																			
0.36	-0.53	0.11	0.24	0.02	0.12	0.20	1.00																		
0.29	-0.28	0.05	0.26	0.00	0.13	0.49	0.29	1.00																	
0.19	-0.55	-0.06	0.28	0.09	0.42	0.46	0.51	0.37	1.00																
-0.01	-0.10	0.02	0.02	-0.02	0.07	0.08	0.00	-0.02	0.08	1.00															
-0.01	0.14	0.10	0.31	-0.04	0.39	0.20	0.12	0.14	0.27	-0.05	1.00														
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00													
-0.21	0.43	-0.11	-0.15	-0.01	-0.17	-0.05	-0.45	0.09	0.01	0.00	0.01	0.00	1.00												
0.09	0.14	0.46	0.05	-0.01	0.00	-0.06	-0.02	0.03	-0.15	0.01	0.10	0.00	0.00	1.00											
-0.06	0.08	0.06	0.26	-0.05	0.27	0.13	0.05	0.13	0.10	-0.04	0.46	0.00	0.00	-0.04	1.00										
0.34	-0.57	0.08	0.26	-0.02	0.17	0.24	0.70	0.23	0.41	-0.02	0.26	0.00	0.00	-0.45	0.06	1.00									
-0.14	-0.14	0.48	-0.10	0.17	0.18	0.05	-0.06	0.07	0.21	0.03	-0.16	0.00	0.00	0.15	0.06	-0.09	-0.17	1.00							
0.38	-0.16	0.21	0.13	-0.03	-0.02	0.02	0.17	0.09	0.08	0.02	0.01	0.00	0.00	-0.10	0.16	-0.04	0.30	-0.09	1.00						
0.18	-0.69	0.11	0.11	0.20	0.25	0.27	0.40	0.30	0.70	0.09	-0.16	0.00	0.00	-0.07	-0.15	-0.10	0.20	0.57	0.05	1.00					
0.08	-0.10	0.08	-0.04	-0.04	0.04	0.00	0.10	0.08	0.08	0.08	-0.02	-0.03	0.00	0.00	0.06	-0.06	0.01	0.13	0.10	0.13	1.00				
-0.18	0.44	0.14	0.21	-0.08	0.27	0.08	-0.12	-0.04	0.02	-0.05	0.71	0.00	0.00	0.17	0.15	0.48	-0.01	-0.12	0.00	-0.40	-0.12	1.00			
-0.04	0.02	0.28	0.06	-0.06	0.03	0.14	0.18	0.19	0.07	-0.03	0.31	0.00	0.00	-0.06	0.17	0.26	0.21	0.06	0.16	-0.10	0.00	0.52	1.00		
0.14	-0.15	0.08	0.31	0.17	0.35	0.52	0.35	0.27	0.49	0.01	0.46	0.00	0.00	-0.16	0.02	0.26	0.26	0.02	-0.03	0.25	0.01	0.33	0.15	1.00	
0.25	0.22	0.59	0.05	-0.02	0.01	-0.04	0.03	-0.10	-0.13	0.01	0.10	0.00	0.00	-0.27	0.31	0.05	0.11	0.03	0.35	-0.21	-0.07	0.31	0.38	0.04	1.00
Mo2	Na2	Nb2	Nd1	Ni1	P2	Pb2	Rb2	Sb1	Sc2	Se1	Sm1	Sn1	Sr2	Ta1	Tb1	Th1	Ti2	U1	V2	W1	Y2	Yb1	Zn2	Zr2	

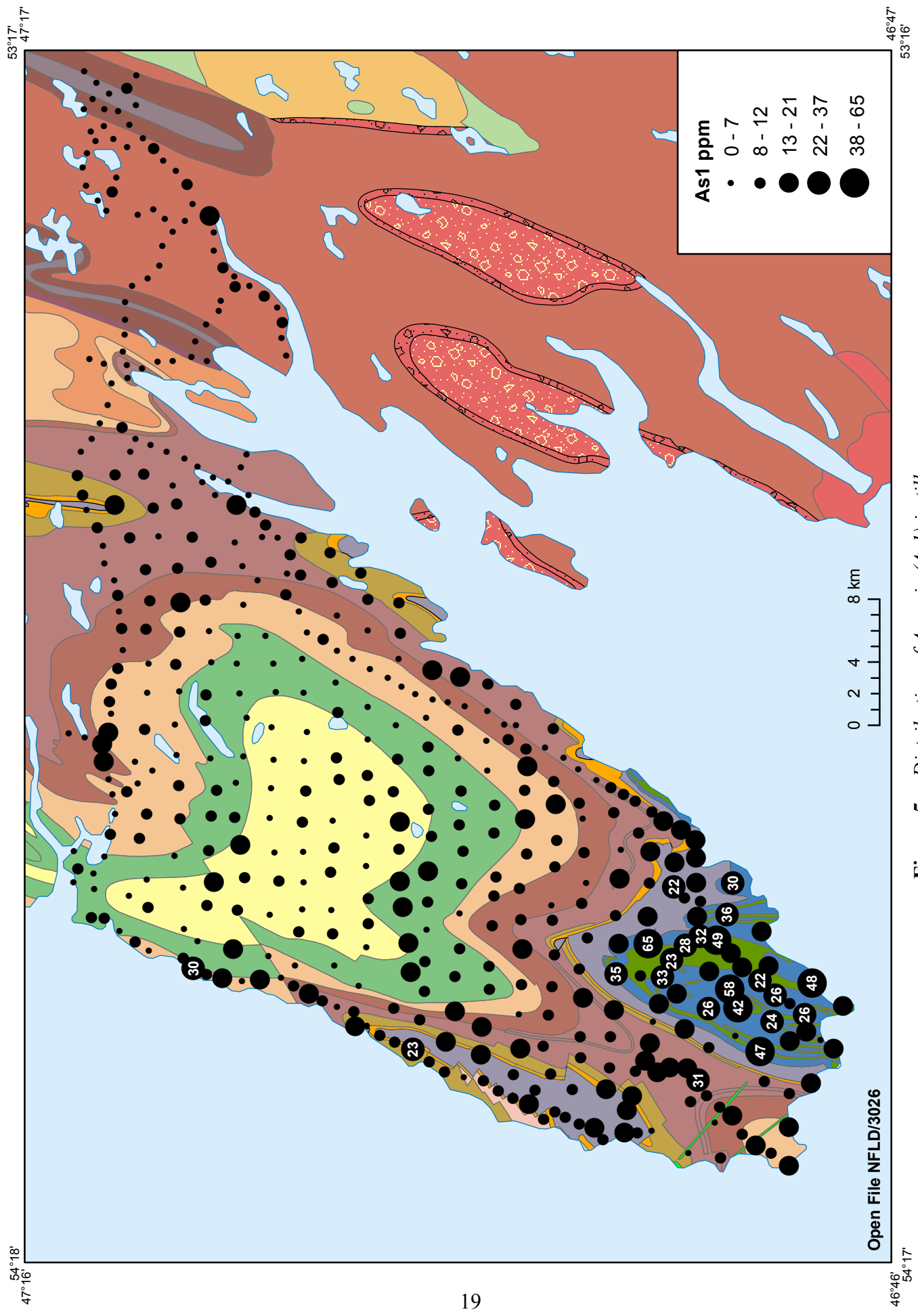


Figure 5. Distribution of Arsenic (As1) in till.

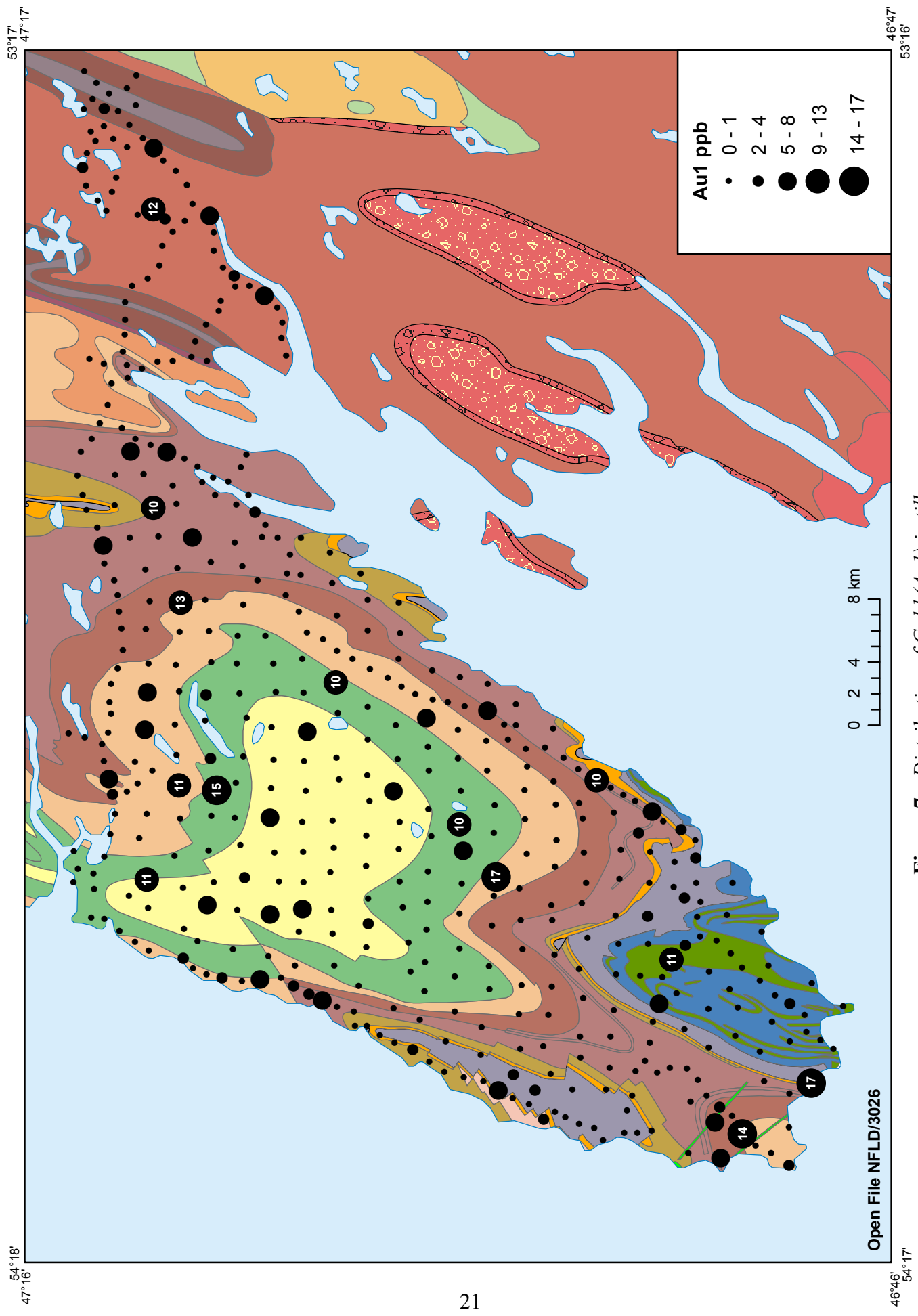


Figure 7. Distribution of Gold (Au1) in till.

‘nugget effect’. It is recognized that heavy mineral separations from an initially larger sample size (>4 kg) would likely yield more reproducible gold geochemistry data.

The highest value recorded within the study area, is 17 ppb, found in two samples. One is in sediment overlying the Harcourt–Adeyton group sediments in the southern part of the peninsula, and the other over tuffaceous rocks of the Big Head Formation, Musgravetown Group in the central part of the peninsula.

Gold is poorly correlated with all other elements analyzed (Table 5). Field duplicates showed a low degree of correlation (0.007; Appendix B), as did laboratory duplicates (not included). This is possibly due to the large number of analyses below, or close to, detection limit.

NICKEL (Ni)

The area contains a cluster of elevated nickel values (up to 279 ppm), primarily in sediment overlying Silurian diabase, diorite and gabbro sills that intrude rocks of the Harcourt Group in the southern part of the peninsula (Figure 8). A similar clustering of elevated values occur for chromium (Figure 19), where values up to 444 ppm are recorded.

Nickel shows moderate correlation with magnesium (0.34), chromium (0.32) and cobalt (0.29) (Table 5). Field duplicates showed a high degree of correlation (0.974; Appendix B), as did laboratory duplicates (not included), and the data is thus considered accurate and precise.

URANIUM (U)

Uranium (Figure 9) shows a single high value (18.5 ppm) in sediment overlying rocks of the Bull Arm Formation in the northwest part of the study area. In comparison, Batterson and Taylor (2004c) recorded two high values of 20 ppm and 46 ppm, and a range of values between 3 ppm and 12 ppm for till samples in the uranium-rich Melody Lake–Moran Lake areas of the Central Mineral Belt in Labrador.

Uranium is moderately correlated with molybdenum (0.38), zirconium (0.35), thorium (0.30) and niobium (0.21) (Table 5). Field duplicates showed a low degree of correlation (-0.14; Appendix B), possibly due to the large number of analyses below or close to detection limit.

ZINC (Zn)

Zinc (Figure 10) has a high value of 274 ppm, found in tills overlying rocks of the Silurian diabase, diorite and gabbro sills that intrude rocks of the Harcourt Group in the southern part of the peninsula. This area shows a cluster of samples recording over 100 ppm.

Zinc is moderately to well correlated with beryllium (0.65), cerium (0.52), cobalt (0.68), copper (0.79), lanthanum (0.59), lithium (0.74), magnesium (0.64) and lead (0.52) (Table 5). Field duplicates showed a high degree of correlation (0.976; Appendix B), as did laboratory duplicates (not included), and the data is thus considered accurate and precise.

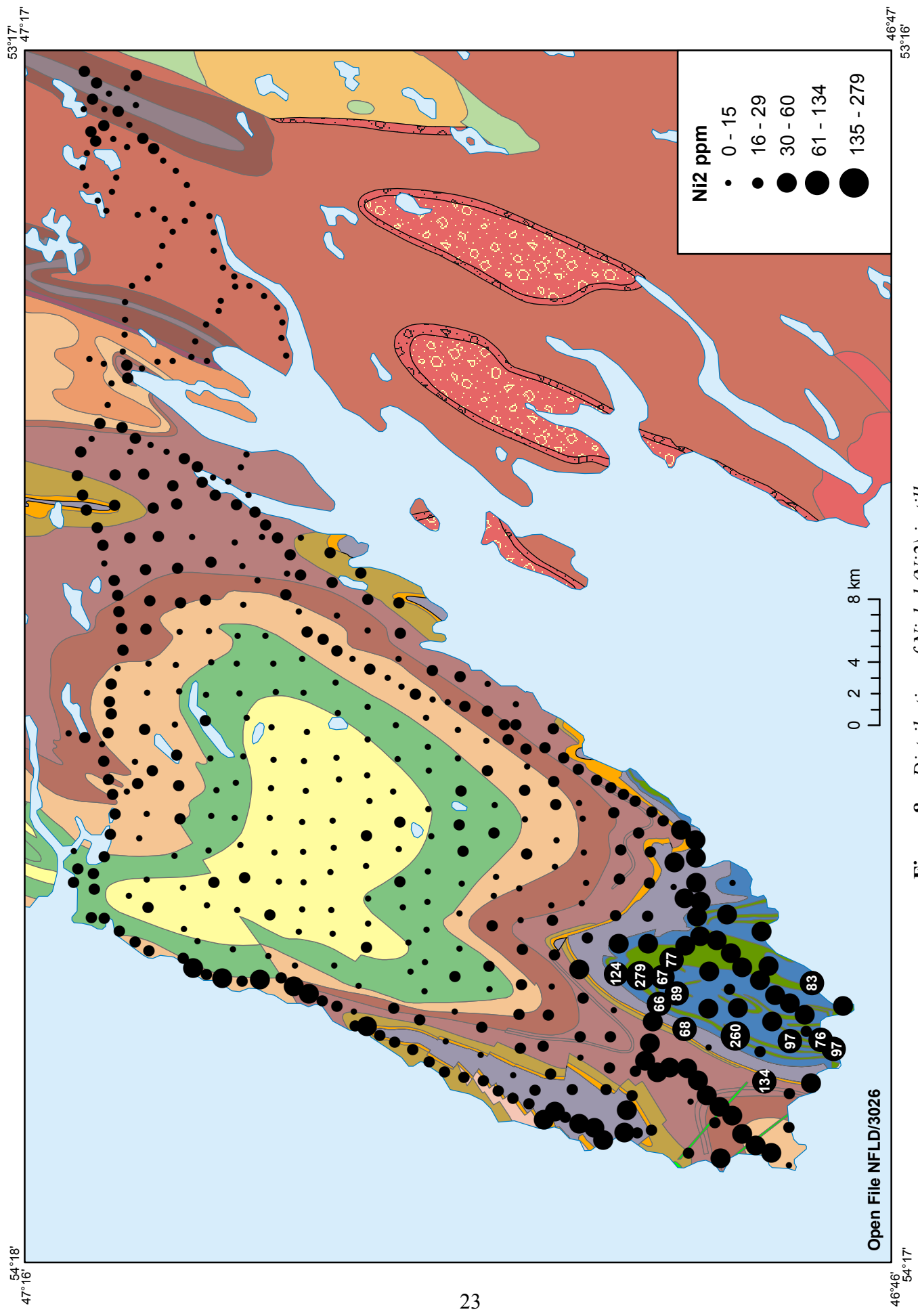


Figure 8. *Distribution of Nickel (Ni2) in till.*

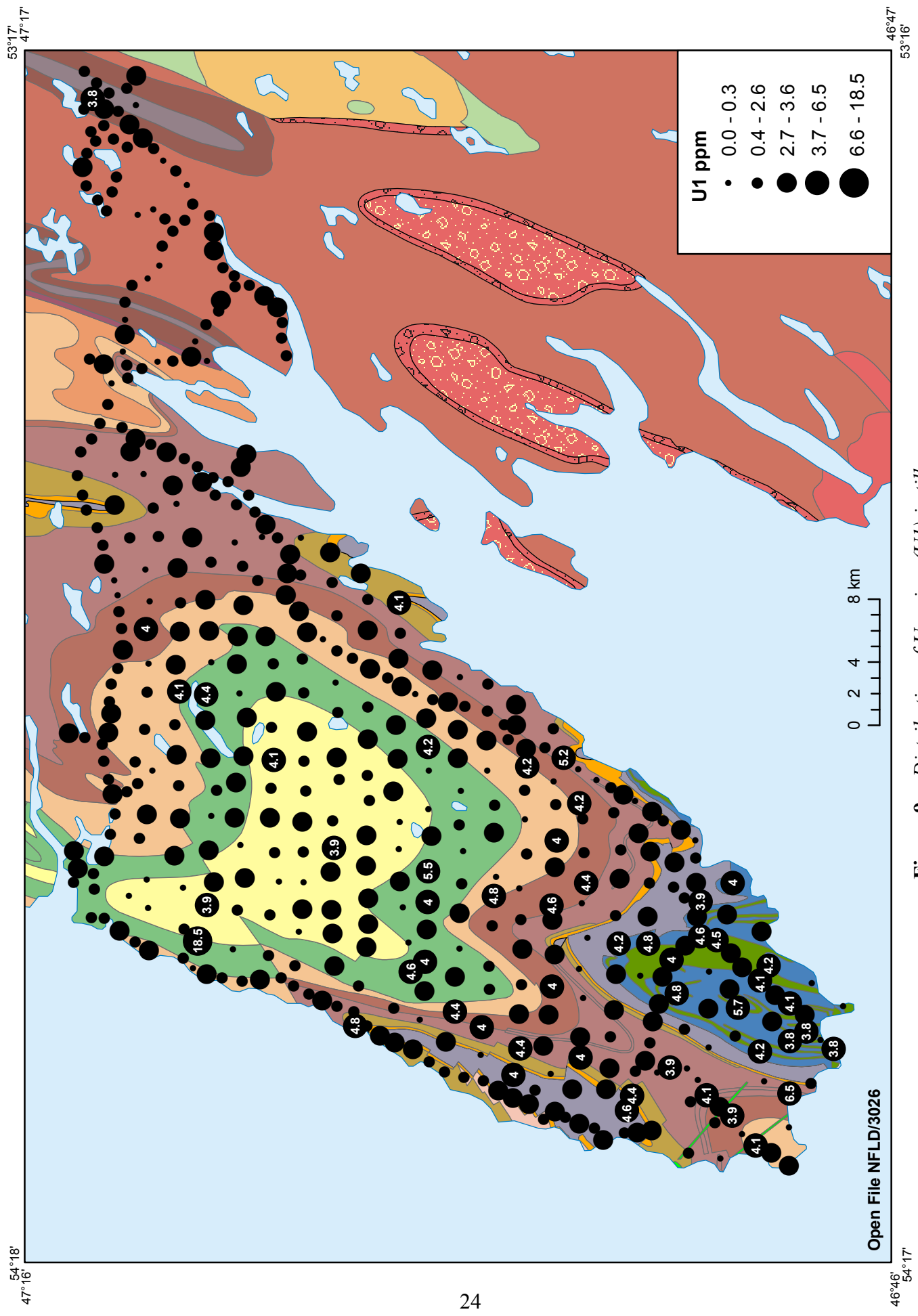
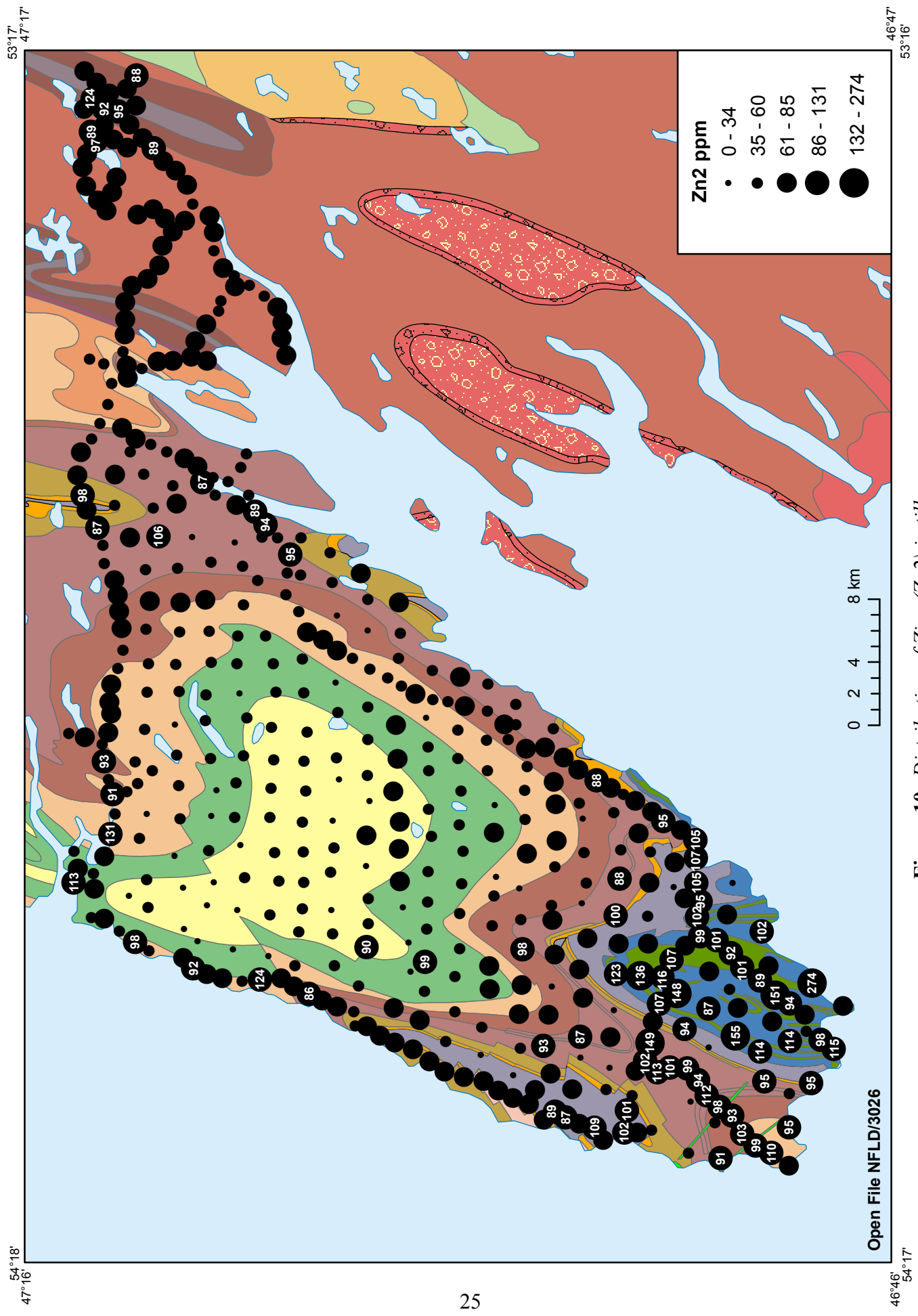


Figure 9. Distribution of Uranium (U1) in till.



Open File NFLD/3026

Figure 10. Distribution of Zinc (Zn₂) in till.

OTHER ELEMENTS

Molybdenum (Figure 33) shows a cluster of relatively high values (up to 32 ppm) in sediment overlying rocks of the Harcourt Group and associated Silurian sill rocks in the southern part of the peninsula. In the same area, tungsten (Figure 50) records a single high value of 11 ppm, lithium (Figure 28) records clustering of samples with values up to 102 ppm, a cluster of iridium samples (Figure 25) record values up to 17 ppm, and chromium (Figure 19) values cluster up to maximum values of 444 ppm. In contrast, sodium (Figure 34) values are relatively low in the southern part of the peninsula. In other areas, a cluster of niobium (Figure 35) samples (23 to 46 ppm) found in the northwest corner of the study area extends southward a similar cluster identified by Batterson and Taylor (2004a). Elevated tantalum (Figure 45) values (up to 4.8 ppm) are found in the same areas.

SUMMARY

The till geochemistry of samples collected from the Cape St. Mary's Peninsula highlights the distinct differences in bedrock geology across the area. Tills overlying rocks of the Cambrian Harcourt and Adeyton groups and associated Silurian sills are relatively enriched in arsenic, cobalt, copper, iron, lithium, molybdenum, magnesium, nickel, rubidium, thorium, and zinc compared to the remainder of the peninsula. Few other clusters of elevated elemental values were noted, although the niobium–tantalum concentrations over parts of areas mapped as Hadrynian Conception and St. John's groups is intriguing.

The till geochemistry indicates that regional and local ice flow had limited influence on dispersal patterns. Geochemical data generally shows a strong affinity to underlying bedrock chemistry with little down-ice transport away from the source.

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Appendix A

Cape St. Mary's Peninsula Till-Geochemistry Data

Sample	NTS	Eastings	Northing	Elev m	Zone	Horizon	Depth cm	Ag1 ppm	Al2 %	As1 ppm	As2 ppm	Au1 ppb	Ba1 ppm	Ba2 ppm	Br1 ppm	Ca1 %	Ca2 %	Cd2 ppm	Ce1 ppm	Ce2 ppm	Co1 ppm	Co2 ppm	Cr1 ppm	Cr2 ppm	Cs1 ppm	Cu2 ppm	Dy2 ppm	Eu1 ppm	Fe1 %	Fe2 %	
4288	01N/03	317993	5233194	194.4	22	c	35	2.5	7.87	8.5	7	0.5	320	489	1.4	98.5	0.5	0.38	0.1	60	67	13	17	22	22	2	11	5.2	1.2	3.12	3.54
4289	01N/03	321821	5234543	145.0	22	c	30	2.5	7.07	4.5	5	0.5	280	357	1.7	36.7	0.5	0.27	0.1	117	144	10	17	27	27	3	21	7.6	1.3	3.59	3.87
4290	01N/03	320814	5232244	94.2	22	c	25	2.5	6.95	6.5	5	0.5	350	457	1.2	55.1	0.5	0.51	0.1	52	61	7	14	27	24	3	12	6.0	1.3	2.89	3.23
4291	01N/03	321345	5233115	134.2	22	c	30	2.5	6.79	4.3	6	0.5	430	404	1.4	23.4	0.5	0.39	0.1	129	147	12	18	28	23	3	24	5.7	1.3	3.22	3.47
4292	01N/03	324256	5233404	143.5	22	c	45	2.5	6.19	4	5	0.5	430	350	1.3	5.5	0.5	0.42	0.1	90	111	10	16	35	27	2	28	5.1	1.2	3.29	3.44
4293	01N/03	323118	5232814	118.2	22	c	30	2.5	7.50	4	4	0.5	300	372	1.9	31.7	0.5	0.11	0.1	89	106	13	18	33	36	2	25	5.0	0.8	3.62	4.17
4294	01N/03	323498	5231705	75.7	22	c	30	2.5	6.15	5.3	6	0.5	370	391	1.2	8.7	0.5	0.61	0.1	80	98	8	16	30	26	0.5	23	5.8	1.3	3.06	3.29
4295	01N/03	325400	5231679	66.5	22	c	40	2.5	7.96	6	6	0.5	450	501	1.7	55.1	0.5	0.42	0.1	84	97	13	21	37	38	3	22	6.3	1.3	3.39	3.83
4296	01N/03	324573	5232275	127.1	22	c	30	2.5	6.66	7.5	5	0.5	380	402	1.3	25	0.5	0.36	0.1	87	97	12	17	35	28	3	29	5.3	1.3	3.62	3.76
4297	01N/03	322290	5232115	117.2	22	c	35	2.5	6.41	5.8	6	0.5	470	380	2.1	4.5	0.5	0.38	0.1	107	119	8	16	30	27	2	25	6.3	1.7	3.47	3.67
4298	01N/03	321388	5231248	82.7	22	c	45	2.5	6.61	5.5	6	0.5	430	406	2.0	3	0.5	0.52	0.1	114	135	12	18	33	26	2	28	6.4	1.5	3.21	3.47
4299	01N/03	320757	5230567	28.8	22	c	45	2.5	6.62	8.9	9	5	500	459	2.2	18.4	0.5	0.31	0.1	73	76	17	21	27	32	2	19	5.0	1.2	4.38	4.72
4300	01N/03	319980	5229960	12.9	22	c	45	2.5	6.74	4.8	6	0.5	530	470	1.9	0.25	2	0.56	0.1	67	78	10	15	27	22	3	19	6.2	1.2	2.96	3.31
4301	01N/03	319349	5229171	8.1	22	c	40	2.5	6.54	6	6	0.5	350	420	1.8	5.8	0.5	0.43	0.1	92	106	10	17	28	23	3	25	6.3	1.5	3.06	3.32
4302	01N/03	318456	5228439	35.7	22	c	40	2.5	7.20	8.4	7	0.5	530	530	1.7	38.4	0.5	0.57	0.1	100	111	12	18	22	20	3	14	7.1	1.5	3.21	3.55
4303	01N/03	317236	5228085	71.5	22	c	40	2.5	6.40	5.5	6	0.5	430	416	1.3	8	0.5	0.60	0.1	77	96	8	16	25	20	0.5	17	4.7	1	2.47	2.77
4304	01N/03	316182	5228584	122.7	22	c	45	2.5	7.19	3.5	4	0.5	530	568	1.5	3.7	0.5	0.44	0.1	50	62	7	12	17	18	3	30	4.4	1	2.37	2.76
4305	01N/03	315486	5229347	138.7	22	c	20	2.5	6.73	5.5	6	0.5	550	489	1.4	9	0.5	0.57	0.1	62	69	7	13	20	19	0.5	17	5.2	1.3	2.3	2.54
4306	01N/03	316546	5231576	188.6	22	c	40	2.5	6.66	6.2	6	0.5	480	500	1.3	6.3	0.5	0.64	0.1	92	106	12	18	25	20	3	18	5.7	1.3	2.89	3.21
4308	01N/03	316894	5230596	157.6	22	c	45	2.5	6.88	5.8	6	12	500	565	1.5	4.7	2	0.67	0.1	86	118	13	19	20	20	2	20	5.2	1.6	2.99	3.27
4309	01N/03	316278	5229839	152.4	22	c	40	2.5	7.12	6.9	7	2	680	591	1.4	17.2	0.5	0.59	0.1	86	132	9	18	17	16	2	14	5.4	1.6	2.55	2.75
4310	01N/03	314570	5230023	136.7	22	c	20	2.5	7.08	6.2	8	0.5	590	612	1.7	5.5	0.5	0.58	0.1	67	104	10	16	2.5	19	2	20	5.5	1.7	2.62	3.07
4311	01N/03	313348	5230218	141.1	22	c	20	2.5	6.92	5.5	6	0.5	500	596	1.5	3.6	0.5	0.65	0.1	73	97	10	16	18	16	2	21	5.3	1.6	2.67	3.00
4312	01N/03	312494	5230948	127.5	22	c	45	2.5	7.03	4.3	5	0.5	520	541	1.4	18.7	0.5	0.46	0.1	51	71	10	15	10	17	2	10	3.9	1.2	2.7	3.11
4313	01N/03	312045	5231941	98.6	22	c	20	2.5	6.65	5.8	7	0.5	550	509	1.6	1.6	0.5	0.54	0.1	71	104	12	20	16	18	2	20	6.3	2	2.32	2.82
4314	01N/03	310990	5232388	107.0	22	c	25	2.5	6.53	5.4	6	0.5	480	476	1.3	9.4	0.5	0.53	0.1	60	81	9	16	16	17	2	15	4.6	1.5	2.38	2.70
4315	01N/04	309903	5232368	68.9	22	c	20	2.5	6.53	3.7	5	0.5	460	447	1.5	0.25	0.5	0.53	0.1	53	68	6	13	19	18	2	13	5.1	1.6	2.3	2.61
4316	01N/04	307871	5232532	47.1	22	c	20	2.5	6.30	4.2	4	0.5	490	471	1.2	0.25	0.5	0.58	0.1	43	59	6	14	29	25	2	19	4.7	1.5	2.25	2.57
4317	01N/04	308930	5232409	55.7	22	c	20	2.5	6.30	3.9	4	0.5	390	406	1.4	2	0.5	0.52	0.1	44	60	6	12	20	19	2	12	5.0	1.5	2.11	2.36
4318	01N/04	306780	5231295	24.8	22	c	40	2.5	6.47	6	5	0.5	380	477	1.0	22.5	0.5	0.54	0.1	48	68	11	17	32	28	2	15	4.4	1.4	2.74	3.10
4319	01N/04	307237	5230316	51.3	22	c	45	2.5	6.37	6.6	6	0.5	420	471	1.2	6	2	0.51	0.1	64	94	13	20	26	27	2	21	4.7	1.6	2.51	2.89
4320	01N/04	307267	5229367	58.8	22	c	40	2.5	6.51	5.4	7	0.5	440	422	1.2	9.8	0.5	0.41	0.1	56	86	11	18	23	27	2	18	4.4	1.2	2.41	2.98
4321	01N/04	307515	5228180	51.2	22	c	30	2.5	6.33	6.1	6	0.5	390	412	1.4	9.8	0.5	0.38	0.1	75	106	14	21	17	23	2	14	6.2	1.7	2.59	3.12
4322	01N/04	307264	5227183	14.4	22	c	45	2.5	6.45	4.9	6	0.5	470	427	1.3	5.8	0.5	0.53	0.1	58	81	11	17	17	19	2	13	5.0	1.4	2.31	2.76
4323	01N/04	308526	5227926	19.6	22	c	40	2.5	6.49	4.3	5	0.5	490	444	1.3	3.2	0.5	0.56	0.1	44	68	7	14	14	19	2	12	4.9	1.2	2.12	2.69
4324	01N/04	309573	5227228	92.4	22	c	35	2.5	6.69	5.3	7	0.5	440	485	1.3	9	0.5	0.44	0.1	61	88	11	17	11	16	2	16	4.4	1.3	2.26	2.78
4325	01N/04	310407	5226424	121.3	22	c	40	2.5	6.64	6.3	7	0.5	480	524	1.4	5.6	2	0.46	0.1	68	97	10	16	11	15	2	13	4.8	1.4	2.45	2.75
4326	01N/03	311075	5226291	124.1	22	c	35	2.5	6.82	6.8	7	0.5	610	506	1.2	22.5	0.5	0.43	0.1	43	63	9	14	17	16	0.5	9	3.5	1.1	2.23	2.58
4327	01N/03	311996	5225378	68.4	22	c	30	2.5	6.75	7.6	7	0.5	450	484	1.3	13.8	0.5	0.54	0.1	65	97	10	18	17	16	2	16	4.5	1.4	2.15	2.58
4328	01N/03	312657	5225440	21.8	22	c	40	2.5	6.68	6.5	7	4	490	503	1.5	4.1	0.5	0.50	0.1	62	90	11	17	15	19	2	17	4.4	1.4	2.59	2.89

Sample	NTS	Eastings	Northing	Elev m	Zone	Horizon	Depth cm	Ag1 ppm	Al2 %	As1 ppm	As2 ppm	Au1 ppb	Ba1 ppm	Ba2 ppm	Br1 ppm	Ca1 %	Ca2 %	Cd2 ppm	Ce1 ppm	Ce2 ppm	Co1 ppm	Co2 ppm	Cr1 ppm	Cr2 ppm	Cs1 ppm	Cu2 ppm	Dy2 ppm	Eu1 ppm	Fe2 %		
4329	01N/03	316471	5227005	28.2	22	c	25	2.5	6.90	14.6	15	7	580	543	2.0	2.1	0.5	0.53	0.1	81	118	13	20	15	21	2	24	7.8	2	3.33	3.67
4330	01N/03	315418	5226730	18.0	22	c	25	2.5	7.00	6.8	7	0.5	430	508	2.1	4.2	0.5	0.44	0.1	81	115	13	20	19	23	5	27	7.8	2.4	2.92	3.23
4331	01N/03	314284	5226745	34.3	22	c	30	2.5	6.54	7.1	7	0.5	470	467	1.2	20.3	0.5	0.52	0.1	49	72	6	14	15	17	2	11	4.3	1.2	2.2	2.53
4332	01N/03	313182	5226156	29.7	22	c	45	2.5	6.75	7.8	8	0.5	620	493	2.5	25.1	0.5	0.55	0.1	154	231	15	22	21	20	2	22	7.1	2.2	2.95	3.31
4333	01N/03	312045	5224489	28.3	22	c	40	2.5	6.42	7	8	0.5	520	478	1.5	0.25	0.5	0.63	0.1	46	67	6	14	15	17	2	13	5.3	1.6	2.24	2.64
4334	01N/03	311378	5223554	18.2	22	c	40	2.5	6.89	7.6	7	8	490	465	1.2	21.9	0.5	0.56	0.1	56	76	13	19	20	19	2	14	4.3	1.4	2.61	2.87
4335	01N/03	310666	5222712	10.2	22	c	30	2.5	6.94	5.8	7	0.5	580	537	1.3	20.3	0.5	0.53	0.1	61	82	11	18	15	16	2	14	4.3	1.5	2.56	2.84
4336	01N/04	309718	5222400	32.9	22	c	40	2.5	7.05	8.9	9	0.5	580	530	1.7	20.3	0.5	0.44	0.1	81	117	11	17	17	17	3	21	5.3	1.7	3.12	3.37
4337	01N/04	308716	5222449	16.6	22	c	35	2.5	6.87	6.4	7	0.5	500	537	1.4	8.1	0.5	0.57	0.1	53	78	11	16	19	17	2	13	4.1	1.3	2.45	2.74
4338	01N/04	307608	5222151	25.5	22	c	40	2.5	6.69	6.8	8	0.5	490	528	1.3	10.5	0.5	0.58	0.1	60	81	11	17	11	15	2	15	4.0	1.5	2.32	2.56
4339	01N/04	303009	5223585	61.0	22	c	40	2.5	6.39	9.7	9	0.5	410	432	1.2	25.9	2	0.26	0.1	81	117	19	25	30	34	2	26	3.8	1.5	2.88	3.20
4340	01N/04	302327	5231712	47.2	22	c	40	2.5	6.30	5.7	7	0.5	410	478	1.3	10.5	0.5	0.37	0.1	58	82	12	18	32	31	2	25	4.1	1.5	2.71	3.11
4341	01N/04	301508	5232060	34.8	22	c	30	2.5	6.37	6.6	7	6	450	384	0.8	76.9	0.5	0.23	0.1	39	50	10	14	32	33	2	15	3.1	1.2	3.16	3.44
4342	01N/04	301957	5230748	34.2	22	c	45	2.5	5.93	5.4	6	0.5	480	459	1.1	3.3	0.5	0.42	0.1	47	67	9	14	28	24	2	21	3.3	1.1	2.1	2.26
4344	01N/04	301485	5229751	15.6	22	c	35	2.5	6.16	4.9	5	6	490	440	1.2	1.6	0.5	0.32	0.1	34	47	6	11	27	27	2	24	2.9	1.1	2.22	2.46
4345	01N/04	301342	5224665	7.0	22	c	35	2.5	6.21	4.6	5	0.5	450	470	1.0	42.9	0.5	0.44	0.1	40	56	8	13	21	24	2	12	3.2	1.1	2.15	2.39
4346	01N/04	300519	5225040	52.1	22	c	30	2.5	6.06	5	6	0.5	450	465	1.1	6.1	0.5	0.58	0.1	54	79	9	15	23	23	2	21	4.1	1.2	2.11	2.33
4347	01N/04	299593	5225824	48.1	22	c	25	2.5	5.98	5.6	6	0.5	350	436	0.9	15.8	2	0.46	0.1	68	62	9	14	32	23	0.5	16	3.8	1.2	2.38	2.41
4348	01N/04	298747	5224539	7.0	22	c	25	2.5	6.12	7.1	6	0.5	470	427	0.9	28.2	2	0.41	0.1	57	53	9	14	32	25	2	17	2.9	1	2.42	2.42
4349	01N/04	299848	5226784	14.7	22	bc	30	2.5	6.77	6	5	0.5	370	421	1.0	54	0.5	0.39	0.1	57	49	6	10	26	27	0.5	13	3.7	1.2	2.28	2.24
4350	01N/04	300545	5227779	23.2	22	c	35	2.5	6.52	5.5	6	0.5	420	494	1.1	10	0.5	0.42	0.1	100	104	21	26	37	33	3	29	3.8	1.2	3.08	3.26
4351	01N/04	301052	5228612	22.3	22	c	35	2.5	6.59	7.2	7	0.5	460	443	1.0	43.2	0.5	0.31	0.1	83	77	20	23	42	37	2	22	3.7	1.2	3.27	3.37
4352	01N/04	299540	5227474	4.6	22	c	25	2.5	6.74	7.1	9	0.5	470	465	1.4	1.9	0.5	0.31	0.1	55	53	7	13	36	29	2	27	3.1	1.2	2.99	3.21
4353	01N/04	298763	5226651	17.9	22	c	35	2.5	6.34	5.1	6	0.5	460	463	1.4	3.1	0.5	0.36	0.1	80	77	12	17	37	33	2	29	4.7	1.6	2.86	3.12
4354	01N/04	298112	5225315	3.3	22	c	40	2.5	6.71	12.4	11	0.5	480	468	1.8	9.1	0.5	0.32	0.2	116	105	23	26	45	36	2	48	5.8	1.9	3.81	3.92
4355	01N/04	297692	5224125	7.0	22	c	35	2.5	6.87	9.1	8	2	430	434	1.3	14.1	0.5	0.25	0.1	91	78	27	30	44	40	3	43	3.9	1.5	4.16	4.19
4356	01N/04	296860	5223465	69.5	22	c	20	2.5	6.96	10	9	0.5	540	448	1.8	15.8	0.5	0.35	0.1	100	81	27	32	43	42	4	39	5.5	1.7	4.36	4.50
4357	01N/04	296025	5222707	72.0	22	c		2.5	6.34	5.3	6	0.5	420	409	0.9	24.1	0.5	0.41	0.1	45	49	11	17	32	26	2	19	3.3	0.8	2.37	2.61
4358	01N/04	294944	5221887	48.8	22	c	35	2.5	6.96	9.2	8	0.5	420	379	1.3	29	0.5	0.30	0.1	97	108	29	35	48	44	3	30	4.1	1.1	4.01	4.30
4359	01N/04	293784	5222091	115.0	22	c	35	2.5	6.57	6.3	7	0.5	470	406	0.9	38.6	0.5	0.23	0.1	63	65	10	17	48	41	3	19	3.0	1	3.25	3.61
4360	01N/04	292391	5222162	87.3	22	c	30	2.5	6.57	9.5	9	0.5	480	544	1.4	24.1	0.5	0.43	0.1	60	66	11	19	48	39	5	24	4.1	1.3	3.56	3.76
4361	01N/04	291358	5221344	112.0	22	c	25	2.5	6.23	6.6	6	0.5	430	368	0.8	62.8	0.5	0.34	0.1	47	54	8	15	50	32	2	18	3.7	1	3.08	3.20
4362	01N/04	290041	5220825	100.6	22	c	30	2.5	6.48	7.1	7	0.5	450	443	1.6	0.25	0.5	0.45	0.1	72	78	14	21	43	35	3	36	6.0	1.6	3.27	3.38
4363	01N/04	289571	5219812	86.5	22	c	25	2.5	6.24	9.8	7	0.5	310	396	1.1	9.2	0.5	0.56	0.1	74	80	16	21	53	33	2	28	4.9	1.3	3.16	3.19
4364	01N/04	288847	5218923	95.4	22	c	30	2.5	6.45	6.4	7	0.5	400	394	1.0	21.7	0.5	0.50	0.1	70	75	11	19	39	32	3	25	4.9	1.4	3.02	3.30
4366	01N/04	288341	5217932	104.0	22	c	30	2.5	5.97	4.7	6	0.5	230	340	0.9	8.8	0.5	0.64	0.1	56	66	11	18	36	24	2	16	4.7	1.2	2.43	2.65
4367	01N/04	287690	5216836	126.8	22	c		2.5	6.15	4.7	6	0.5	330	372	1.0	6.2	0.5	0.69	0.1	54	58	8	17	33	26	2	18	5.3	1.4	2.59	2.70
4368	01N/04	287116	5215693	128.8	22	c	35	2.5	6.19	6.8	6	0.5	310	400	0.9	40.3	0.5	0.53	0.1	60	62	8	15	34	26	3	13	4.2	1.2	2.81	3.09
4369	01N/04	286579	5214834	136.4	22	c	30	2.5	6.32	3.9	5	0.5	260	394	0.9	17	0.5	0.71	0.1	45	54	8	14	23	24	2	14	4.7	0.9	2.31	2.67
4370	01N/04	286092	5213941	140.7	22	c	30	2.5	6.65	6.4	6	0.5	400	409	1.1	43.4	0.5	0.60	0.1	65	74	11	18	29	28	2	18	5.1	1.4	2.71	3.00

Sample	NTS	Eastings	Northing	Elev m	Zone	Horizon	Depth cm	AgI ppm	Al2 %	As1 ppm	As2 ppm	Au1 ppb	Ba1 ppm	Ba2 ppm	Bc1 ppm	Bc2 ppm	Bc3 ppm	Br1 ppm	Ca1 %	Ca2 %	Cd2 ppm	Ce1 ppm	Ce2 ppm	Co1 ppm	Co2 ppm	Cr1 ppm	Cr2 ppm	Cs1 ppm	Cu2 ppm	Dy2 ppm	Eu1 ppm	Fe1 %	Fe2 %
4706	01K/13	276201	5200905	122.3	22	c	35	2.5	6.30	4.8	4	0.5	380	371	1.0	30.4	0.5	0.78	0.1	50	56	6	16	48	41	2	21	4.7	1.1	2.27	2.55		
4707	01K/13	274367	5200981	151.4	22	c	35	2.5	6.83	12.2	12	0.5	430	406	1.1	91.2	0.5	0.32	0.1	45	54	11	18	59	56	3	31	3.3	1	4.9	5.54		
4708	01K/13	272031	5201233	153.7	22	c	30	2.5	6.50	11.4	10	0.5	400	380	1.1	43.2	0.5	0.26	0.1	53	64	11	20	77	55	3	29	3.5	1	4.11	4.66		
4709	01L/16	270251	5201031	118.1	22	c	30	2.5	7.58	12.3	9	0.5	320	434	1.5	62.4	0.5	0.17	0.1	72	77	16	23	82	72	3	38	3.9	1.3	4.24	4.75		
4710	01L/16	268317	5201206	155.5	22	c	35	2.5	6.95	34.8	31	0.5	340	450	1.8	25.5	0.5	0.54	0.1	85	73	47	48	315	274	4	77	3.3	1.4	7.17	6.86		
4711	01L/16	266045	5201339	161.5	22	c	30	2.5	16.1	16.1	0.5	640			93.5	0.5			66												0.7	5.77	
4712	01L/16	264329	5201550	145.4	22	bc	40	2.5	6.61	10.2	9	0.5	390	292	0.9	128	0.5	0.31	0.1	49	40	8	15	94	70	0.5	35	3.1	0.9	3.71	3.61		
4713	01L/16	262355	5201616	132.0	22	c	35	2.5	6.52	11.1	8	0.5	430	329	0.6	247	0.5	0.08	0.2	46	43	7	17	85	86	3	16	3.1	0.7	7.79	8.26		
4714	01K/13	277249	5199768	121.6	22	c	45	2.5	6.36	10.2	10	3	340	401	1.3	4.6	0.5	0.73	0.2	76	74	18	28	48	41	2	28	5.3	1.4	3.6	3.96		
4716	01K/13	276088	5199032	143.9	22	bc	20	2.5	7.09	15.3	12	0.5	420	370	1.0	179	0.5	0.14	0.1	54	52	6	12	53	57	2	27	3.3	1.4	4.68	4.93		
4717	01K/13	274103	5199091	154.8	22	c	35	2.5	6.61	8.2	7	0.5	480	410	1.1	111	0.5	0.27	0.1	65	61	13	19	75	62	3	26	3.6	1.2	4.68	5.03		
4718	01K/13	271984	5199198	119.8	22	c	30	2.5	7.43	12.8	11	3	540	628	1.5	37.4	0.5	0.07	0.1	102	51	26	30	102	88	4	24	0.5	1.2	5.1	4.92		
4719	01L/16	270232	5199173	150.7	22	c	30	2.5	7.08	64.6	58	0.5	630	577	1.9	55.3	0.5	0.18	0.1	111	109	20	24	136	118	7	87	2.9	1	12.8	13.38		
4720	01L/16	268215	5199674	145.7	22	c		2.5	6.74	11.7	10	0.5	420	331	0.9	99	0.5	1.13	0.2	59	43	70	69	477	444	4	72	3.0	1.1	8.03	7.87		
4721	01L/16	260996	5201848	93.8	22	c	30	2.5	7.62	12.6	11	0.5	550	384	1.0	126	0.5	0.17	0.1	73	65	8	18	117	98	3	20	3.9	1.4	4.61	4.47		
4722	01L/16	264828	5196840	134.9	22	c	35	2.5	7.08	18.9	15	0.5	450	460	1.3	162	3	0.56	0.1	66	54	23	26	198	167	0.5	43	2.6	0.9	6.43	6.24		
4723	01L/16	268481	5195285	122.2	22	c	25	2.5	7.31	12.6	11	0.5	490	525	1.2	83.7	0.5	0.79	0.1	75	60	13	23	171	148	3	26	2.7	1.2	6.2	6.08		
4724	01L/16	267351	5194003	102.8	22	c	30	2.5	8.81	58.5	47	0.5	850	678	2.4	23.4	0.5	0.05	0.1	64	61	4	10	135	119	7	56	2.3	0.6	12.2	12.12		
4725	01L/16	266114	5195349	110.1	22	c	25	2.5	9.13	26.1	21	0.5	860	691	2.3	33.3	0.5	0.09	0.1	108	102	15	20	162	140	8	65	2.5	1.2	9.09	8.62		
4726	01L/16	263627	5195310	128.9	22	c	30	2.5	11.7	11.7	0.5	760			207	0.5			77												1.1	6.26	
4727	01L/16	263401	5192068	135.2	22	c	20	2.5	7.44	46.8	37	0.5	590	594	2.0	117	0.5	0.08	0.1	77	76	5	10	126	118	5	84	2.4	1.1	12.7	12.85		
4728	01L/16	261485	5191780	116.5	22	c	30	2.5	6.72	8.3	6	0.5	300	259	0.7	81.9	4	2.96	0.3	53	45	52	55	369	325	3	81	3.0	1.4	7.83	7.89		
4729	01L/16	264369	5193621	156.4	22	c	35	2.5	7.18	5.1	1	0.5	2.5	287	0.2	38.7	0.5	2.12	0.4	52	41	90	102	387	328	5	121	3.5	1.1	11.7	12.15		
4730	01L/16	266170	5193456	131.4	22	c	35	2.5	9.12	42.3	40	0.5	710	750	2.3	56.4	0.5	0.03	0.1	83	79	8	14	133	121	8	39	2.2	0.9	8.72	9.27		
4731	01L/16	265287	5191305	98.9	22	c	35	2.5	9.95	24.1	20	0.5	910	746	2.3	29.9	0.5	0.02	0.1	100	92	9	16	141	129	7	43	2.0	1	7.16	7.32		
4732	01K/13	272084	5194164	124.3	22	c	35	2.5	8.54	36.5	34	0.5	1080	856	2.2	63.9	0.5	0.12	0.1	108	100	8	14	141	131	7	56	2.8	1.1	8.55	8.90		
4733	01K/13	274091	5193787	123.7	22	c	30	2.5	29.9	29.9	0.5	610			39	0.5			108												1.8	6.27	
4734	01K/13	273837	5197541	93.6	22	c	30	2.5	21.6	21.6	0.5	420			282	0.5			71												0.6	9.63	
4735	01K/13	275422	5197496	88.2	22	c	25	2.5	7.06	14.9	13	0.5	490	458	1.4	32.4	0.5	0.24	0.1	79	71	14	22	74	66	7	33	2.4	0.9	4.61	4.76		

Sample	NTS	Eastings	Northing	Hf1 ppm	Hg1 ppm	Ir1 ppb	K2 %	La1 ppm	La2 ppm	Li2 ppm	LOI %	Lu1 ppm	Mg2 %	Mn2 ppm	Mo1 ppm	Mo2 ppm	Na1 %	Na2 %	Nb2 ppm	Nd1 ppm	Ni1 ppm	Ni2 ppm	P2 ppm	Ph2 ppm	Rb1 ppm	Rb2 ppm	Sb1 ppm	Sc1 ppm	Sc2 ppm	Se1 ppm	Sm1 ppm	Sn1 ppm
4288	01N/03	317993	5233194	5	0.5	2.5	1.99	23.4	25	28.4	15.6	0.65	0.62	1531	0.5	1	1.77	1.66	15	13	10	13	1266	9	72	79	0.3	11.4	14.2	0.5	4.5	0.005
4289	01N/03	321821	5234543	8	0.5	2.5	1.93	23.4	24	46.6	4.7	0.75	0.69	1103	3	1	2.15	2.06	45	12	10	16	462	12	102	89	0.3	10.2	12.3	0.5	5.2	0.005
4290	01N/03	320814	5232244	7	0.5	2.5	1.66	20	23	37.6	6.6	0.62	0.62	684	0.5	1	2.4	2.40	25	2.5	10	13	590	10	60	61	0.3	10.2	12.7	0.5	4.8	0.005
4291	01N/03	321345	5233115	7	0.5	2.5	1.79	21.7	24	42.9	3.3	0.63	0.67	1032	0.5	1	2.44	2.27	29	13	10	15	557	8	2.5	72	0.3	10.4	12.1	0.5	5	0.005
4292	01N/03	324256	5233404	7	0.5	2.5	1.37	21.7	24	40.2	1.8	0.62	0.61	878	0.5	1	2.72	2.88	25	13	10	14	691	9	67	60	0.5	9.5	10.9	0.5	4.7	0.005
4293	01N/03	323118	5232814	7	0.5	2.5	1.90	20	21	54.3	6.2	0.67	0.75	1084	0.5	1	2.04	2.00	30	10	10	19	680	3	90	101	0.3	11.2	14.0	0.5	3.7	0.005
4294	01N/03	323498	5231705	7	0.5	2.5	1.40	23.4	26	35.9	2.9	0.58	0.60	800	0.5	1	2.67	2.97	24	17	10	14	664	11	2.5	59	0.5	9	11.0	0.5	5	0.005
4295	01N/03	325400	5231679	5	0.5	2.5	2.22	21.7	25	45.5	7.6	0.67	0.72	900	0.5	1	2.05	1.88	22	15	10	21	793	7	92	104	0.3	13.5	17.0	0.5	5.2	0.005
4296	01N/03	324573	5232275	7	0.5	2.5	1.51	25	26	44.8	4.4	0.63	0.58	899	0.5	1	2.51	2.29	24	13	10	15	624	10	73	69	0.3	10.2	11.9	0.5	5.2	0.005
4297	01N/03	322290	5232115	7	0.5	2.5	1.65	31.7	33	40.6	2.3	0.68	0.63	1115	0.5	1	2.51	2.30	31	18	10	15	726	9	57	79	0.5	10.7	12.4	0.5	6.3	0.005
4298	01N/03	321388	5231248	7	0.5	2.5	1.83	31.7	34	38.2	2.1	0.68	0.71	1165	0.5	1	2.49	2.34	26	18	10	16	793	16	53	79	0.05	10.9	13.2	0.5	5.8	0.005
4299	01N/03	320757	5230567	7	0.5	2.5	1.90	23.4	25	46.5	7.5	0.68	0.69	1748	0.5	1	2.07	1.89	22	13	10	17	932	22	102	94	0.5	12	14.1	0.5	4.8	0.005
4300	01N/03	319980	5229960	7	0.5	2.5	1.90	28.4	31	34.8	2.4	0.73	0.69	1111	0.5	1	2.57	2.85	21	12	10	14	717	8	2.5	75	0.3	11.2	13.5	0.5	5.8	0.005
4301	01N/03	319349	5229171	7	0.5	2.5	1.79	31.7	34	40.0	2.7	0.63	0.64	1274	0.5	1	2.54	2.48	21	22	10	14	702	10	2.5	73	0.5	11.9	14.2	0.5	6.2	0.005
4302	01N/03	318456	5228439	5	0.5	2.5	1.92	26.7	29	33.9	6.3	0.68	0.71	1049	0.5	1	2.72	2.52	16	18	10	14	945	12	43	67	0.5	12.4	14.8	0.5	6.2	0.005
4303	01N/03	317236	5228085	5	0.5	2.5	1.44	18.4	22	29.7	1.9	0.53	0.56	849	0.5	1	2.91	3.28	21	10	150	12	710	9	2.5	58	0.05	8.7	11.0	0.5	4.2	0.005
4304	01N/03	316182	5228584	5	0.5	2.5	2.18	18.4	21	35.1	3.3	0.57	0.71	734	0.5	1	2.51	2.87	15	10	10	12	782	17	60	79	0.3	9.9	12.4	0.5	3.7	0.005
4305	01N/03	315486	5229347	7	0.5	2.5	1.67	25	28	29.5	4.1	0.6	0.59	651	0.5	1	2.89	3.15	19	15	10	12	880	17	48	62	0.3	10	11.8	0.5	5.2	0.005
4306	01N/03	316546	5231576	7	0.5	2.5	1.88	23.4	26	31.7	2.2	0.68	0.67	1056	7	1	2.79	2.98	23	15	10	12	792	8	90	67	0.3	11.2	13.3	0.5	5	0.005
4308	01N/03	316894	5230596	6	0.5	2.5	1.97	21.8	24	30.8	2.4	0.54	0.70	1026	0.5	1	2.75	3.05	18	19	10	11	841	10	2.5	69	0.4	11.7	13.9	0.5	5.5	0.005
4309	01N/03	316278	5229839	6	0.5	2.5	2.04	25	28	27.8	3.6	0.58	0.61	938	0.5	1	2.63	3.04	22	23	10	11	681	11	44	69	0.5	10.1	12.2	0.5	6	0.005
4310	01N/03	314570	5230023	5	0.5	2.5	2.23	27.3	31	29.8	2.5	0.52	0.70	1042	2	1	2.57	3.03	17	17	10	11	820	16	2.5	86	0.2	10.9	13.8	0.5	6.2	0.005
4311	01N/03	313348	5230218	5	0.5	2.5	2.04	25.7	28	27.1	2.1	0.52	0.67	996	0.5	1	2.78	3.10	17	30	10	10	820	10	2.5	71	0.4	11.7	13.9	0.5	6.1	0.005
4312	01N/03	312494	5230948	5	0.5	2.5	1.74	29.6	33	30.8	2.1	0.55	0.60	1214	0.5	1	2.65	3.10	18	23	10	13	746	17	78	57	0.05	10.9	13.9	0.5	7.3	0.005
4313	01N/03	312045	5231941	5	0.5	2.5	1.64	21.8	24	29.4	2.7	0.51	0.57	1058	0.5	1	2.69	3.12	17	21	10	12	658	10	2.5	59	0.2	10.1	12.1	0.5	4.9	0.005
4314	01N/03	310990	5232388	6	0.5	2.5	1.60	26.5	29	31.6	1.9	0.52	0.58	666	0.5	1	2.77	3.09	20	24	10	10	659	9	54	63	0.3	9.4	11.8	0.5	6.2	0.005
4316	01N/04	307871	5232532	6	0.5	2.5	1.48	23.4	25	30.2	1.7	0.46	0.65	553	0.5	1	2.57	2.98	20	13	10	13	666	10	40	61	0.2	8.6	10.8	0.5	5.1	0.005
4317	01N/04	308930	5232409	5	0.5	2.5	1.46	24.8	27	30.7	2.8	0.47	0.55	615	0.5	1	2.67	3.11	21	22	10	10	678	9	49	54	0.4	9	10.9	0.5	5.4	0.005
4318	01N/04	306780	5231295	6	0.5	2.5	1.41	23.3	25	32.5	4.1	0.47	0.61	656	0.5	1	2.41	2.38	19	18	10	15	501	9	32	58	0.4	9	11.4	0.5	4.8	0.005
4319	01N/04	307237	5230316	5	0.5	2.5	1.47	23.3	27	28.3	2.7	0.48	0.63	1015	0.5	1	2.56	2.93	19	23	10	15	735	15	41	57	0.3	9.8	12.2	0.5	5.5	0.005
4320	01N/04	307267	5229367	5	0.5	2.5	1.50	20.3	24	33.0	2.7	0.42	0.65	978	0.5	1	2.44	3.04	17	16	10	13	748	11	48	62	0.4	9	12.0	0.5	4.4	0.005
4321	01N/04	307515	5228183	6	0.5	2.5	1.51	23.3	27	29.5	4.3	0.54	0.55	4247	4	1	2.46	2.94	18	20	10	10	838	11	28	60	0.3	9.8	12.7	0.5	6.1	0.005
4322	01N/04	307264	5227183	5	0.5	2.5	1.49	21.8	25	29.5	2.2	0.48	0.58	1294	0.5	1	2.82	3.24	17	20	10	10	730	10	28	53	0.2	9.8	12.0	0.5	5.3	0.005
4323	01N/04	308526	5227926	5	0.5	2.5	1.56	18.8	24	29.4	1.6	0.44	0.58	853	0.5	1	2.64	3.29	18	14	10	10	682	6	45	54	0.3	9	11.9	0.5	4.6	0.005
4324	01N/04	309573	5227228	5	0.5	2.5	1.76	21	26	30.2	2.9	0.42	0.59	1288	3	1	2.61	3.24	15	17	10	10	744	10	45	64	0.05	9	12.0	0.5	4.6	0.005
4325	01N/04	310407	5226424	5	0.5	2.5	1.80	24.8	27	30.3	2.2	0.47	0.64	1236	0.5	1	2.87	3.30	16	22	10	10	830	8	50	58	0.3	9.8	12.1	0.5	5.6	0.005
4326	01N/03	311075	5226291	5	0.5	2.5	1.56	18.8	21	26.2	6.3	0.38	0.48	714	0.5	1	2.74	3.17	15	15	10	8	606	13	66	56	0.4	8.3	10.4	0.5	4.1	0.005
4327	01N/03	311996	5225378	5	0.5	2.5	1.56	21.9	25	28.8	2.9	0.41	0.55	858	0.5	1	2.88	3.35	17	15	10	10	736	13	43	58	0.3	8.9	11.1	0.5	5.1	0.005
4328	01N/03	312657	5225440	5	0.5	2.5	1.82	21.9	24	31.9	2.1	0.49	0.63	1059	0.5	1	2.71	3.09	16	17	10	10	737	12	51	67	0.3	9.7	11.8	0.5	4.9	0.005

Appendix A

Table with columns: Sample, NTS, Easting, Northing, HfI, HgI, IrI, K2, La1, La2, Li2, LOI, Lu1, Mg2, Mn2, Mo1, Mo2, Na1, Na2, Nb2, Nd1, Ni1, Ni2, P2, Pb2, Rb1, Rb2, Sb1, Sc1, Sc2, Se1, Sm1, Sn1. Rows 4371-4411.

Sample	NTS	Eastings	Northing	Hf1 ppm	Hg1 ppm	Ir1 ppm	K2 %	La1 ppm	La2 ppm	Li2 ppm	LOI %	Lu1 ppm	Mg2 %	Mn2 ppm	Mo1 ppm	Mo2 ppm	Na1 %	Na2 %	Nb2 ppm	Nd1 ppm	Ni1 ppm	Ni2 ppm	P2 ppm	Pb2 ppm	Rb1 ppm	Rb2 ppm	Sb1 ppm	Sc1 ppm	Sc2 ppm	Se1 ppm	Sm1 ppm	Sn1 ppm	
4706	01K/13	276201	5200905	6	0.5	2.5	1.14	22.4	26	25.0	11.7	0.62	0.57	485	0.5	1	2.03	2.11	16	13	10	17	573	51	2.5	53	0.3	11.5	14.4	0.5	4	0.005	
4707	01K/13	274367	5200981	5	0.5	2.5	1.38	19.2	21	37.5	9.6	0.54	0.76	613	0.5	1	1.78	1.80	18	11	10	22	711	78	66	63	0.6	13.4	16.5	0.5	2.9	0.005	
4708	01K/13	272031	5201233	6	0.5	2.5	1.34	24	25	32.3	6.7	0.59	0.69	619	2	1	1.7	1.69	18	14	10	25	430	45	67	65	0.6	12.8	15.4	0.5	3.5	0.005	
4709	01L/16	270251	5201031	5	0.5	2.5	1.63	27.2	27	46.0	13.5	0.5	0.81	1909	0.5	1	1.2	1.20	16	13	10	33	860	26	70	89	0.5	14.2	17.8	0.5	4.5	0.005	
4710	01L/16	268317	5201206	9	0.5	2.5	1.60	33.2	28	56.3	8.4	0.42	2.09	1630	7	1	1.07	1.05	19	111	10	124	516	40	50	91	1.2	16.1	18.2	0.5	3.7	0.005	
4711	01L/16	266045	5201339	10	0.5	2.5		21.3				0.52			0.5		0.76		72	10					61		0.8	17			0.5	4.1	0.005
4712	01L/16	264329	5201550	9	0.5	2.5	0.97	17.9	17	32.3	24.9	0.34	0.73	446	0.5	1	1.53	1.52	13	25	10	22	665	64	2.5	43	0.8	13.6	15.0	0.5	3.1	0.005	
4713	01L/16	262355	5201616	9	0.5	2.5	1.09	15.3	14	14.2	31.4	0.39	0.37	396	0.5	1	0.58	0.62	21	82	10	19	952	22	2.5	58	0.8	14.4	18.3	3	3.7	0.005	
4714	01K/13	277249	5199768	13	0.5	2.5	1.27	24.6	27	29.8	2.5	0.5	0.72	1120	0.5	1	2.12	2.33	19	46	10	20	764	70	33	53	0.8	13.6	16.7	0.5	3.5	0.005	
4716	01K/13	276088	5199032	10	0.5	1.3	1.51	22.1	21	25.2	24.8	0.48	0.43	384	10	1	0.84	0.91	15	66	10	16	754	49	54	73	0.7	12.8	16.4	0.5	4.3	0.005	
4717	01K/13	274103	5199091	9	0.5	2.5	1.40	23.8	24	28.1	12.1	0.43	0.69	680	0.5	1	1.36	1.49	14	36	10	26	539	24	2.5	66	0.6	11.9	14.4	0.5	3.7	0.005	
4718	01K/13	271984	5199198	9	0.5	2.5	2.23	37.4	30	38.1	11.5	0.42	0.61	8170	14	1	0.79	0.75	17	64	10	27	650	22	111	137	0.9	17	19.8	0.5	4.9	0.005	
4719	01L/16	270232	5199173	8	0.5	2.5	1.74	25.5	23	42.7	13.3	0.32	0.83	1343	32	13	0.74	0.77	22	55	10	48	1133	30	69	104	1.8	14.4	17.6	0.5	4	0.005	
4720	01L/16	268215	5199674	7	0.5	2.5	0.72	19.8	17	56.8	13.9	0.22	3.73	1940	0.5	1	1.05	1.08	20	68	270	279	604	16	2.5	44	0.5	16.2	18.2	0.5	2.9	0.005	
4721	01L/16	260996	5201848	10	0.5	2.5	1.45	25.2	22	21.4	23.1	0.4	0.62	367	5	1	1.01	0.98	17	29	10	18	1204	27	57	74	0.7	16.2	19.1	0.5	4	0.005	
4722	01L/16	264828	5196840	6	0.5	2.5	1.35	26.1	23	50.9	22.6	0.31	1.23	1242	12	1	0.94	0.95	17	23	220	68	952	14	54	75	0.7	15.3	18.4	0.5	3.4	0.005	
4723	01L/16	268481	5195285	8	0.5	2.5	1.50	30.6	27	45.5	18.4	0.3	1.23	818	0.5	1	0.86	0.87	22	51	10	34	963	12	69	89	0.7	18.9	22.2	0.5	4.6	0.005	
4724	01L/16	267351	5194003	7	0.5	2.5	2.38	25.2	21	46.0	9.1	0.36	0.60	318	0.5	5	0.68	0.66	21	39	10	23	820	23	99	145	2.1	18	20.9	0.5	3	0.005	
4725	01L/16	266114	5195349	8	0.5	1.2	2.29	38.7	32	63.1	10.3	0.39	0.98	536	14	2	0.68	0.66	21	43	10	43	802	15	108	136	1	18.9	21.5	0.5	4.7	0.005	
4726	01L/16	263627	5195310	6	0.5	2.5		29.7				0.31			0.5		0.69		90	10					90		0.05	19.8			0.5	3.8	0.005
4727	01L/16	263401	5192068	6	0.5	2.5	1.78	27	23	43.3	21.2	0.29	0.67	813	26	12	0.52	0.52	19	34	10	29	1203	52	69	110	1.5	15.3	17.8	0.5	4	0.005	
4728	01L/16	261485	5191780	6	0.5	2.5	0.65	17.1	16	34.9	12.3	0.13	3.89	1477	0.5	1	1.3	1.32	24	36	10	134	910	8	2.5	36	0.3	24.3	28.0	0.5	3.5	0.005	
4729	01L/16	264369	5193621	5	0.5	1.7	0.40	16.2	15	39.1	10.4	0.025	4.27	2062	0.5	1	1.07	1.12	36	17	330	260	914	2	2.5	33	0.05	11.7	14.3	0.5	2.1	0.005	
4730	01L/16	266170	5193456	7	0.5	2.5	2.59	30.7	27	51.2	11.5	0.32	0.74	440	12	6	0.6	0.60	21	63	10	32	874	26	108	159	1.3	16.6	20.0	0.5	2.7	0.005	
4731	01L/16	265287	5191305	7	0.5	2.5	2.95	45.7	40	82.8	8.4	0.4	0.92	334	16	2	0.65	0.63	21	63	200	34	569	15	133	171	1	18.3	21.8	0.5	4.8	0.005	
4732	01K/13	272084	5194164	8	0.5	2.5	2.43	35.7	32	54.8	12.5	0.37	1.01	1031	11	6	0.68	0.69	18	72	10	34	939	25	100	137	1.2	17.4	20.9	0.5	4.6	0.005	
4733	01K/13	274091	5193787	10	0.5	2.5		40.7				0.35			0.5		0.89		100	10					81		0.8	18.3			0.5	6	0.005
4734	01K/13	273837	5197541	6	0.5	2.5		25.7				0.23			0.5		0.69		26	10					43		0.6	17.4			0.5	4.1	0.005
4735	01K/13	275422	5197496	11	0.5	2.5	1.94	34	30	53.2	5.6	0.47	0.83	945	0.5	1	1.37	1.42	18	56	10	32	392	24	83	102	0.7	13.3	15.4	0.5	4	0.005	

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm	
4246	01N/04	283630	5235955	0.025	225	0.1	0.9	6.6	6839	3.3	65	0.5	27	3.2	2.5	55	0.005	73
4247	01N/04	283342	5234927	0.025	190	2.3	0.9	8.1	6398	2.1	76	0.5	26	3.5	2.5	62	0.005	69
4248	01N/04	283638	5233454	0.025	169	0.1	0.25	9.1	6057	2.8	73	0.5	26	4	120	78	0.03	73
4249	01N/04	284862	5233253	0.025	182	0.8	0.8	7.4	5447	3.4	77	0.5	23	3.6	2.5	68	0.005	71
4250	01N/04	286728	5233259	0.025	182	0.1	1.3	7.8	6325	2.4	72	0.5	32	4.1	2.5	69	0.03	75
4251	01N/04	285585	5233363	0.025	186	0.1	0.25	6.8	5861	2.4	61	0.5	25	3.4	100	67	0.005	68
4252	01N/04	287707	5232858	0.025	199	0.1	0.9	7.5	6235	1.8	65	0.5	28	3.5	2.5	58	0.005	74
4253	01N/04	288898	5232517	0.025	165	0.1	0.8	8.4	6552	2.8	82	0.5	22	3.6	2.5	52	0.03	77
4254	01N/04	290269	5232589	0.025	169	2	0.9	7.3	5992	2.3	72	0.5	28	3.9	100	80	0.005	81
4255	01N/04	291360	5232776	0.08	161	1.8	1.1	7.5	5611	1.4	70	0.5	27	3.4	2.5	65	0.005	77
4256	01N/04	292368	5232851	0.025	173	1.6	0.9	7.8	6397	0.25	77	0.5	32	3.4	80	85	0.005	89
4257	01N/04	293322	5233081	0.025	187	0.1	1.3	7.1	6318	0.25	79	0.5	27	3	2.5	61	0.005	80
4258	01N/04	294386	5233713	0.025	179	0.1	0.25	6.9	6122	2.8	59	0.5	24	2.8	2.5	56	0.03	84
4259	01N/04	295527	5233796	0.025	160	1.4	0.6	6.9	6184	1.8	66	0.5	20	2.5	2.5	59	0.005	86
4260	01N/04	296649	5234146	0.025	144	0.1	0.25	9	6571	2.5	78	0.5	27	3.5	2.5	87	0.005	96
4261	01N/04	297782	5234835	0.025	127	0.1	0.25	7.6	5253	1.5	75	2	18	2.5	2.5	71	0.005	89
4262	01N/04	298731	5235080	0.025	126	0.1	0.25	9.5	6779	2	81	0.5	22	3.2	70	98	0.005	103
4263	01N/04	299996	5235395	0.025	148	1.9	0.25	7.1	5984	1.8	73	0.5	24	2.9	2.5	81	0.005	96
4264	01N/04	301476	5235193	0.025	170	0.1	0.25	6.6	6162	2.4	59	0.5	20	2.5	70	62	0.005	92
4266	01N/04	302304	5234493	0.025	174	1.6	0.6	6.9	6216	2	53	0.5	20	2.5	2.5	54	0.005	94
4267	01N/04	303284	5233987	0.025	146	0.1	0.25	8.2	5187	2.4	59	0.5	18	2.4	50	60	0.005	92
4268	01N/04	304484	5233494	0.025	175	0.1	0.25	7.4	5943	2.1	49	0.5	19	2.5	2.5	41	0.005	95
4269	01N/04	305819	5233227	0.025	202	0.1	0.7	6.5	6507	0.25	45	0.5	24	2.9	2.5	44	0.005	93
4270	01N/04	307363	5234643	0.025	181	1.3	0.7	7.7	5278	2.3	58	0.5	22	2.8	2.5	46	0.005	88
4271	01N/04	307058	5233718	0.025	185	0.1	0.7	8.6	4389	2.8	37	0.5	27	3	2.5	48	0.03	100
4272	01N/04	306987	5232271	0.025	148	1.5	0.9	8.8	6567	2.1	72	0.5	25	3.2	2.5	76	0.005	99
4273	01N/04	306183	5232224	0.025	170	0.1	0.25	6.7	5663	1.8	64	0.5	24	2.5	50	65	0.005	99
4274	01N/03	325669	5234974	0.025	133	2.9	0.9	8.6	6533	2.3	64	0.5	29	3.3	2.5	78	0.005	100
4275	01N/03	324918	5234199	0.025	123	2.7	0.8	10.2	6732	2	59	0.5	33	3.9	70	77	0.005	114
4276	01N/03	323901	5234451	0.025	94	2.5	1.4	11.8	5766	3.8	54	0.5	44	5	80	124	0.005	129
4277	01N/03	323232	5234986	0.025	109	1.5	1	9.5	6449	2.3	57	0.5	30	3.4	60	71	0.005	109
4278	01N/03	323262	5233699	0.025	98	3.1	1.1	11	5925	3.5	53	0.5	38	4.2	60	92	0.03	146
4279	01N/03	322188	5233722	0.025	131	2	1.1	8.1	6949	2.2	54	0.5	33	3.5	2.5	74	0.005	104
4280	01N/03	321240	5234255	0.025	99	2	0.9	8.1	5391	2	68	0.5	28	3.3	2.5	97	0.005	109
4281	01N/03	320450	5234814	0.025	115	0.1	0.9	8	5747	1.8	53	0.5	28	3.4	2.5	74	0.005	90
4282	01N/03	319552	5235074	0.025	134	1.5	0.8	7.5	5061	2.7	47	0.5	30	4	70	80	0.03	92
4284	01N/03	318374	5234845	0.025	148	1.6	0.9	7.4	5306	1.8	42	0.5	31	3.8	2.5	79	0.005	91
4285	01N/03	317475	5234110	0.025	139	0.1	0.9	7	5530	2.4	48	0.5	27	3.4	80	79	0.03	91
4286	01N/03	316805	5233565	0.025	151	1.5	0.25	7.1	5229	1.4	49	0.5	27	3.4	2.5	74	0.005	93
4287	01N/03	318931	5232941	0.025	148	1.1	0.9	6.6	5841	1.4	50	0.5	27	3.4	60	73	0.005	93

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm	
4288	01N/03	317993	5233194	0.025	107	0.1	0.25	8.1	4381	2	46	0.5	25	3.7	2.5	79	0.005	91
4289	01N/03	321821	5234543	0.025	99	4.8	1.3	10.5	6414	2.2	59	0.5	36	4.8	2.5	89	0.03	125
4290	01N/03	320814	5232244	0.025	145	3	0.25	8.7	6504	2.4	50	0.5	28	4	2.5	72	0.07	100
4291	01N/03	321345	5233115	0.025	124	2.2	0.25	10.9	6744	1.5	54	0.5	30	4.5	2.5	75	0.005	119
4292	01N/03	324256	5233404	0.025	141	0.1	0.25	8.7	5963	1.8	63	0.5	26	4	2.5	65	0.005	97
4293	01N/03	323118	5232814	0.025	88	0.1	0.25	10.5	5114	2	73	0.5	26	4.2	130	95	0.005	114
4294	01N/03	323498	5231705	0.025	158	0.1	1	7.6	6498	0.25	61	0.5	28	3.7	2.5	66	0.005	98
4295	01N/03	325400	5231679	0.025	119	0.1	1	10	5988	3.1	83	0.5	31	3.8	2.5	88	0.005	111
4296	01N/03	324573	5232275	0.025	139	3.3	0.25	9.4	6080	1.5	60	0.5	26	3.5	100	69	0.005	101
4297	01N/03	322290	5232115	0.025	124	4	1.5	10	6049	3.1	63	0.5	31	4.5	130	73	0.05	108
4298	01N/03	321388	5231248	0.025	126	0.1	0.25	10.1	6189	3.3	59	0.5	34	4.2	2.5	72	0.005	119
4299	01N/03	320757	5230567	0.025	109	2.8	0.25	10	4858	2.2	79	0.5	26	4.3	2.5	89	0.005	92
4300	01N/03	319980	5229960	0.025	138	2.2	1.2	8	5550	0.25	53	0.5	32	4.7	2.5	74	0.005	87
4301	01N/03	319349	5229171	0.025	136	0.1	1	8	5705	2.2	55	0.5	31	4.2	2.5	70	0.005	97
4302	01N/03	318456	5228439	0.025	157	0.1	1	8	5419	0.25	52	0.5	35	4.7	2.5	77	0.005	106
4303	01N/03	317236	5228085	0.025	165	3.8	0.25	6.5	5849	2.2	48	0.5	25	3.3	2.5	60	0.005	95
4304	01N/03	316182	5228584	0.025	141	0.1	0.25	7.8	5002	2.6	48	0.5	24	3.3	2.5	75	0.005	104
4305	01N/03	315486	5229347	0.025	155	0.1	0.25	7.6	5706	1.5	47	0.5	27	3.7	2.5	69	0.005	93
4306	01N/03	316546	5231576	0.025	147	0.1	0.25	8.1	6346	0.25	52	0.5	29	4.3	2.5	73	0.005	98
4308	01N/03	316894	5230596	0.025	162	0.1	0.9	7.8	6012	0.25	54	0.5	28	3.7	2.5	73	0.005	101
4309	01N/03	316278	5229839	0.025	152	0.1	0.25	8.7	6718	2.6	43	0.5	29	3.7	60	67	0.005	119
4310	01N/03	314570	5230023	0.025	147	0.1	0.25	8.5	5483	2.3	50	2	30	3.5	60	80	0.005	107
4311	01N/03	313348	5230218	0.025	155	0.1	0.25	7.2	5635	0.25	48	0.5	29	3.4	130	71	0.005	98
4312	01N/03	312494	5230948	0.025	140	0.1	0.5	6.8	4630	0.25	48	0.5	22	3.7	2.5	73	0.04	86
4313	01N/03	312045	5231941	0.025	142	0.1	1.2	7.6	6066	2.3	45	0.5	32	3.7	2.5	66	0.005	90
4314	01N/03	310990	5232388	0.025	153	0.1	1.6	7	5335	2.6	45	0.5	24	3.1	2.5	66	0.005	89
4315	01N/04	309903	5232368	0.025	146	0.9	0.9	7.7	5521	0.25	45	0.5	28	3.4	2.5	65	0.005	91
4316	01N/04	307871	5232532	0.025	163	0.1	0.25	7	5952	0.25	51	0.5	25	3	2.5	56	0.005	88
4317	01N/04	308930	5232409	0.025	141	0.1	0.8	6.8	5678	3.4	44	0.5	27	3.2	2.5	61	0.005	91
4318	01N/04	306780	5231295	0.025	171	0.1	0.25	7.5	6442	2	58	0.5	24	2.8	2.5	56	0.005	101
4319	01N/04	307237	5230316	0.025	157	2.2	0.25	7.6	6292	0.25	52	0.5	25	3.2	2.5	66	0.005	100
4320	01N/04	307267	5229367	0.025	142	0.1	0.25	6.9	5586	2.1	53	0.5	23	2.8	2.5	64	0.005	96
4321	01N/04	307515	5228180	0.025	135	1.9	1	6.7	5615	2.7	52	0.5	30	3.6	2.5	62	0.005	96
4322	01N/04	307264	5227183	0.025	151	0.1	0.25	7.2	5184	0.25	45	0.5	25	3.2	2.5	63	0.005	89
4323	01N/04	308526	5227926	0.025	155	0.1	0.25	6.1	5279	0.25	44	0.5	25	2.8	2.5	64	0.03	91
4324	01N/04	309573	5227228	0.025	148	0.1	0.25	6.5	5444	2.1	45	0.5	23	2.8	60	68	0.005	103
4325	01N/04	310407	5226424	0.025	152	1.4	0.8	7.4	5497	2.3	43	0.5	25	3.2	2.5	59	0.005	101
4326	01N/03	311075	5226291	0.025	157	1.4	0.25	7	5217	3	41	0.5	20	2.7	2.5	53	0.03	96
4327	01N/03	311996	5225378	0.025	170	2.5	0.6	6.4	5730	1.8	42	0.5	23	2.7	2.5	63	0.005	100
4328	01N/03	312657	5225440	0.025	153	1.2	1.1	7.3	4788	2.1	47	0.5	23	2.8	2.5	60	0.02	96

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4329	01N/03	316471	5227005	0.025	133	0.1	1.4	9.2	5680	2.1	59	0.5	41	3.8	2.5	74	0.005	110
4330	01N/03	315418	5226730	0.025	133	1.7	0.25	9.9	5638	2.9	58	0.5	35	3.9	2.5	77	0.005	115
4331	01N/03	314284	5226745	0.025	166	1.5	0.7	6.6	5418	2.7	42	0.5	22	2.7	2.5	55	0.005	93
4332	01N/03	313182	5226156	0.025	144	0.1	1.4	8.4	5506	2.1	51	0.5	35	3.6	60	74	0.005	109
4333	01N/03	312045	5224489	0.025	168	0.1	0.9	6.7	5907	1.8	43	0.5	28	3.2	2.5	54	0.04	100
4334	01N/03	311378	5223554	0.025	153	0.1	1	7.1	5309	3.5	50	0.5	23	2.9	60	59	0.005	92
4335	01N/03	310666	5222712	0.025	159	0.1	0.25	7.2	5326	3.2	42	0.5	23	2.9	2.5	61	0.005	104
4336	01N/04	309718	5222400	0.025	133	0.1	0.25	7.9	5254	2.4	53	0.5	29	3.8	90	68	0.005	108
4337	01N/04	308716	5222449	0.025	168	0.1	0.25	7.8	4957	2.2	48	0.5	22	3.1	80	62	0.005	97
4338	01N/04	307608	5222151	0.025	168	0.1	0.8	8.5	5317	1.7	42	0.5	22	2.8	2.5	64	0.005	96
4339	01N/04	303009	5223585	0.025	140	0.1	0.8	9.2	4518	2.2	61	0.5	20	2.8	2.5	71	0.005	82
4340	01N/04	302327	5231712	0.025	161	1.7	0.8	8.2	5332	2.7	60	2	23	3.1	2.5	63	0.02	85
4341	01N/04	301508	5223060	0.025	146	1.5	0.6	8.6	4449	3	57	0.5	15	2.2	2.5	44	0.005	75
4342	01N/04	301957	5230748	0.025	180	1.2	0.6	7.1	4669	2.6	44	0.5	19	2.7	2.5	50	0.005	81
4344	01N/04	301485	5229751	0.025	161	0.1	0.25	7.1	4141	2.9	56	0.5	17	2.5	2.5	55	0.02	71
4345	01N/04	301342	5224665	0.025	173	0.1	0.25	7.9	4655	2.9	46	0.5	19	2.6	2.5	46	0.03	83
4346	01N/04	300519	5225040	0.025	184	1.5	0.6	7.7	5058	2.7	46	0.5	23	2.8	60	47	0.02	80
4347	01N/04	299593	5225824	0.025	180	0.1	0.8	6.6	5201	2.6	46	2	20	3.2	2.5	43	0.005	82
4348	01N/04	298747	5224539	0.025	181	1.5	0.25	6.3	4768	2.1	45	0.5	17	2.9	2.5	47	0.005	79
4349	01N/04	299848	5226784	0.025	158	0.1	1	7	4150	2.6	42	0.5	18	3.2	2.5	42	0.005	77
4350	01N/04	300545	5227779	0.025	172	2.1	0.9	7	6344	2.6	68	0.5	22	3.5	2.5	75	0.005	92
4351	01N/04	301052	5228612	0.025	156	0.1	0.9	6.6	5523	2.3	67	0.5	20	3.2	110	69	0.005	88
4352	01N/04	299540	5227474	0.025	138	1.7	0.9	7	4703	2.9	72	0.5	20	3.2	120	87	0.005	83
4353	01N/04	298763	5226651	0.025	154	0.1	0.7	7.2	5458	2.2	68	0.5	25	3.5	2.5	52	0.005	85
4354	01N/04	298112	5225315	0.025	143	0.1	1.2	8.7	5423	2.3	78	0.5	29	4.1	2.5	84	0.005	88
4355	01N/04	297692	5224125	0.025	115	2.9	0.9	9.2	5962	1.7	92	0.5	21	3.7	2.5	89	0.005	92
4356	01N/04	296860	5223465	0.025	116	0.1	0.25	8.6	5680	2.9	106	0.5	30	4.6	90	94	0.04	95
4357	01N/04	296025	5222707	0.025	176	0.1	0.25	6.7	5148	2.3	57	0.5	19	3.2	2.5	53	0.005	84
4358	01N/04	294944	5221887	0.025	118	0.1	0.25	8.1	5605	2.7	90	0.5	21	3.4	2.5	95	0.05	92
4359	01N/04	293784	5222091	0.025	125	0.1	1	7.2	5528	3.2	95	0.5	18	3.2	2.5	52	0.06	85
4360	01N/04	292391	5222162	0.025	156	0.1	0.25	8.6	6255	2.7	88	0.5	23	3.7	2.5	53	0.05	78
4361	01N/04	291358	5221344	0.025	164	0.1	0.25	7.5	6068	3.6	63	0.5	19	3.2	100	46	0.005	82
4362	01N/04	290041	5220825	0.025	169	0.1	1.1	6.7	5403	2.7	73	0.5	33	4	2.5	73	0.005	81
4363	01N/04	289571	5219812	0.025	185	2.6	1	6.7	5971	0.25	63	0.5	25	4	2.5	72	0.05	78
4364	01N/04	288847	5218923	0.025	172	0.1	0.25	8.8	6394	2.3	64	0.5	25	3.9	2.5	63	0.005	83
4366	01N/04	288341	5217932	0.025	193	2.3	0.8	8	6250	2.1	51	0.5	25	3.1	2.5	50	0.05	78
4367	01N/04	287690	5216836	0.025	191	0.1	0.25	8.2	6806	2.7	56	0.5	29	3.7	2.5	57	0.005	84
4368	01N/04	287116	5215693	0.025	166	2.5	0.25	9.6	6186	2.5	60	0.5	23	3.7	2.5	50	0.08	79
4369	01N/04	286579	5214834	0.025	189	2.9	0.25	8.8	6270	2.9	55	0.5	25	3.3	2.5	55	0.005	78
4370	01N/04	286092	5213941	0.025	174	0.1	0.8	9.4	5929	0.25	59	0.5	26	3.6	2.5	61	0.005	79

Appendix A

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm	
4371	01N/04	285732	5212831	0.025	190	0.1	0.25	8	5614	2.1	50	0.5	25	3.4	2.5	52	0.005	71
4372	01N/04	285598	5211873	0.025	198	0.1	0.9	8	6340	3.2	53	0.5	26	3.7	2.5	53	0.005	76
4373	01N/04	285327	5210803	0.025	195	0.1	0.25	9.4	6412	1.5	66	0.5	27	3.6	2.5	62	0.005	79
4374	01N/04	285021	5209364	0.025	202	0.1	0.25	6.1	6336	2.5	53	0.5	25	3.5	2.5	53	0.06	77
4375	01K/13	284138	5207572	0.025	192	0.1	0.25	6.8	6246	2.9	66	0.5	22	3.2	2.5	54	0.005	78
4376	01K/13	284164	5208308	0.025	204	0.1	0.25	6.6	6630	1.9	69	0.5	26	3.5	2.5	66	0.005	81
4377	01K/13	283206	5208065	0.025	172	0.1	0.9	7.3	6738	2.5	70	0.5	24	3.6	2.5	53	0.005	85
4378	01K/13	282627	5206917	0.025	189	0.1	0.25	6.8	7153	3.4	83	0.5	28	3.8	2.5	83	0.005	90
4379	01K/13	282709	5205720	0.025	185	0.1	0.25	6.8	6185	1.7	78	0.5	25	3.2	110	71	0.005	81
4380	01K/13	282036	5204526	0.025	155	0.9	1	8.7	7028	5.2	98	0.5	24	4.4	110	66	0.03	98
4381	01K/13	281313	5203595	0.025	208	1	1.3	8.9	6182	0.25	84	0.5	33	5.3	120	83	0.04	102
4382	01K/13	280612	5202448	0.025	228	1	1.1	7.5	6677	0.25	88	0.5	32	4.7	130	88	0.03	96
4383	01K/13	280142	5201524	0.025	194	0.1	1.2	8	6596	2.5	81	0.5	25	3.6	2.5	71	0.005	91
4384	01K/13	279709	5200721	0.025	146	0.1	0.25	9.5	5355	2.7	74	0.5	21	2.9	2.5	55	0.005	82
4385	01K/13	278607	5198928	0.025	200	0.8	0.9	8.4	6141	2.8	81	0.5	24	3.2	2.5	80	0.005	86
4386	01K/13	279303	5199982	0.025	181	1.2	0.7	8.3	6395	0.25	75	0.5	22	3	80	72	0.03	87
4387	01M/01	266239	5218919	0.025	328	0.1	0.25	6.6	5837	2	91	0.5	26	3.3	80	68	0.04	73
4388	01M/01	266604	5219853	0.025	215	1.8	1	8.3	8388	3.4	128	0.5	24	3.6	60	62	0.03	76
4389	01M/01	267050	5220707	0.025	262	1.1	1.3	9.8	7750	2.2	130	0.5	36	4.8	2.5	86	0.03	89
4390	01M/01	267541	5221678	0.025	286	1	0.7	7.4	7077	2	120	0.5	27	3.4	80	80	0.005	71
4391	01M/01	268072	5222483	0.025	317	0.1	0.25	7.5	8584	2	119	0.5	25	3.4	2.5	70	0.005	79
4392	01M/01	267945	5223827	0.025	215	0.1	1.4	9.5	8030	3.2	135	0.5	40	5.5	100	124	0.03	80
4393	01M/01	267842	5224944	0.06	302	1.6	0.25	7.5	7779	2.5	99	0.5	22	3.2	2.5	59	0.005	76
4394	01M/01	263968	5215251	0.025	310	1.1	0.8	7.5	6518	2.7	88	0.5	26	3.5	90	67	0.005	78
4395	01M/01	264397	5216202	0.025	153	0.1	0.25	9.5	6111	3.6	104	0.5	18	3.3	60	62	0.005	81
4396	01M/01	265003	5217021	0.025	186	0.1	0.9	7.3	6431	2.1	129	0.5	28	3.4	2.5	82	0.005	77
4397	01M/01	265022	5217771	0.025	154	0.1	0.25	8.7	9302	4.8	142	0.5	15	3.2	2.5	49	0.03	80
4398	01M/01	265933	5217858	0.025	284	0.1	0.25	7.5	6040	1.7	86	0.5	23	3.1	2.5	56	0.04	68
4399	01M/01	268073	5226220	0.025	250	0.1	0.8	6.6	8247	1.4	134	0.5	23	3.4	60	84	0.005	70
4400	01M/01	268298	5227219	0.025	269	1.5	0.25	6.7	7644	3.5	114	0.5	25	3.4	60	75	0.03	79
4401	01M/01	268663	5228048	0.025	219	1.6	1.2	7.6	6711	0.25	112	0.5	23	3.5	80	92	0.04	66
4402	01M/01	269331	5228685	0.025	180	2.4	0.6	8.8	5553	2.4	65	0.5	23	3.9	80	76	0.04	80
4403	01M/01	269809	5230873	0.09	241	0.1	0.25	7.8	7408	2.7	70	0.5	28	3.2	2.5	46	0.005	77
4405	01M/01	270359	5231746	0.025	214	2.8	1.1	7.4	6306	1.8	96	0.5	23	3.4	80	98	0.005	70
4406	01M/01	271032	5232750	0.025	222	0.1	0.25	6.9	6274	3.2	85	0.5	21	3	2.5	56	0.005	67
4407	01M/01	271829	5233695	0.025	225	0.1	1	7.9	5900	2.5	86	0.5	26	3.4	100	81	0.005	71
4408	01M/01	271916	5234526	0.025	231	0.1	0.25	6.8	7486	2.4	96	0.5	20	3.2	2.5	58	0.005	69
4409	01N/04	273708	5234323	0.025	231	2.5	0.25	6.9	8512	2.5	140	0.5	14	2.9	2.5	62	0.005	71
4410	01N/04	274697	5234381	0.025	228	3	0.25	7	7514	2.5	92	0.5	18	2.3	2.5	49	0.005	71
4411	01N/04	275766	5233691	0.025	252	0.1	0.25	7.4	6974	2.9	79	2	28	3.5	80	61	0.005	64

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm	
4412	01N/04	277217	5233329	0.025	140	0.1	0.25	9.3	6158	2.4	83	0.5	25	3.8	170	13.1	0.005	65
4413	01N/04	278503	5233005	0.025	219	0.1	0.8	7.5	6004	2.4	63	0.5	28	3.2	2.5	50	0.005	70
4414	01N/04	279728	5233180	0.025	193	0.1	0.8	7.8	6555	2.9	73	2	26	3.5	90	91	0.005	69
4415	01N/04	280686	5233433	0.025	204	1.4	0.25	6.7	5671	2.1	61	0.5	24	3	2.5	60	0.04	68
4416	01N/04	281821	5233720	0.025	125	0.1	1.8	9.4	4807	2.2	96	0.5	46	4.5	120	93	0.03	62
4417	01N/04	282928	5233836	0.025	95	0.1	0.25	9.2	8551	2.2	125	3	13	3.5	70	45	0.005	76
4418	01L/16	263566	5187386	0.025	134	2.2	0.25	8.6	6080	3.8	128	0.5	16	2.3	100	115	0.005	64
4419	01L/16	264140	5188224	0.025	159	0.1	0.6	4.2	8560	0.25	207	0.5	17	2.1	90	98	0.005	51
4420	01L/16	264655	5189117	0.025	78	0.1	0.25	15	4755	3.8	117	0.5	11	2.4	2.5	42	0.05	61
4421	01L/16	265727	5189256	0.025	94	0.1	0.25	13.9	6041	3.4	139	0.5	11	2.8	2.5	69	0.005	71
4422	01L/16	266433	5190168	0.025	121	1.5	0.25	11.8	6058	4.1	142	0.5	18	3	2.5	94	0.005	67
4423	01L/16	266976	5191111	0.025	110	1.1	0.6	13.2	6035	2.7	145	0.5	13	2.6	120	151	0.005	68
4424	01L/16	267904	5192057	0.025	122	0.1	0.25	14.4	6124	4.1	151	0.5	23	3.3	2.5	89	0.005	72
4425	01L/16	268721	5193200	0.025	132	0.1	1	10.8	6243	3.4	164	0.5	18	2.6	2.5	101	0.005	64
4426	01L/16	269648	5193914	0.025	129	0.1	0.25	9.1	5701	3.4	150	0.5	17	2.2	80	92	0.005	59
4427	01L/16	270449	5194818	0.025	114	0.1	0.25	11.6	5718	4.5	122	0.5	14	2.5	90	101	0.005	70
4428	01L/16	270708	5195876	0.025	113	2.2	1.2	13.2	5372	4.6	108	2	14	2.6	60	99	0.005	70
4429	01K/13	271942	5196056	0.025	129	1.4	0.7	13.2	5962	2.9	96	2	15	2.7	70	102	0.03	76
4430	01K/13	272901	5195833	0.025	126	0.1	0.25	13.2	5566	3.9	91	0.5	17	2.9	80	95	0.02	72
4431	01K/13	273129	5196856	0.025	163	1.1	0.6	10.4	5945	2.1	87	0.5	18	2.9	70	80	0.005	79
4433	01K/13	274100	5196100	0.025	123	0.1	0.25	11	5254	3.4	98	0.5	21	3.5	80	105	0.005	72
4434	01K/13	275690	5196142	0.025	111	1.2	0.9	10.9	4945	2.5	106	0.5	24	3.4	100	107	0.005	70
4435	01K/13	276813	5196158	0.025	148	1.1	0.7	9.4	5835	0.25	96	0.5	23	3.2	80	105	0.05	77
4436	01K/13	277478	5197070	0.025	168	0.1	0.9	9.5	6316	2.9	84	0.5	22	3.2	70	77	0.03	82
4437	01K/13	278036	5198197	0.025	127	1.5	1	9	5336	2.5	94	0.5	24	3.1	60	95	0.005	78
4438	01M/01	263526	5214115	0.025	151	0.1	1.1	9.9	6773	3.1	126	0.5	32	4.7	2.5	81	0.005	80
4439	01M/01	262747	5213070	0.025	192	1.5	1	7.8	6363	2.2	103	0.5	26	3.4	2.5	82	0.04	78
4440	01M/01	262100	5212104	0.025	225	0.1	0.6	7.9	6468	2.4	102	0.5	27	3.2	50	64	0.005	75
4441	01M/01	261759	5210864	0.025	240	1.2	0.25	7.9	5450	2.4	81	0.5	21	3	50	81	0.005	68
4442	01L/16	261515	5209622	0.06	219	1.3	0.8	7.9	5653	1.7	90	0.5	26	3.5	60	73	0.005	73
4443	01L/16	260913	5208677	0.025	220	1	0.7	8.3	5799	2.9	83	0.5	25	3.3	60	79	0.02	74
4444	01L/16	260406	5207757	0.025	221	1.2	0.25	8.4	6365	2.9	81	0.5	23	3	50	71	0.02	76
4446	01L/16	260057	5206743	0.025	71	1.1	1.1	12.1	4944	2.7	99	2	24	3.2	2.5	67	0.005	75
4447	01L/16	259075	5205787	0.025	133	0.1	0.7	8.3	5529	1.8	94	0.5	19	2.8	70	85	0.02	71
4448	01L/16	260945	5206340	0.025	160	1.1	0.8	8.6	6139	2.1	81	0.5	17	3.1	2.5	65	0.005	67
4449	01L/16	259569	5205090	0.025	151	0.1	0.7	10.8	6387	3.2	99	0.5	21	3.1	2.5	89	0.005	81
4450	01L/16	258798	5203533	0.025	135	0.1	0.7	9.8	6099	2.7	100	0.5	19	2.9	80	85	0.005	78
4451	01L/16	259197	5204414	0.025	170	0.1	0.7	8.5	6990	2.4	96	0.5	18	3.1	60	87	0.03	83
4452	01L/16	258551	5202564	0.025	114	0.1	1.1	10.3	5572	2.2	114	0.5	30	3.8	80	109	0.005	77
4453	01L/16	257786	5202024	0.025	157	1.9	0.8	9.7	6049	3.5	93	0.5	21	3.3	80	85	0.04	76

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zr1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4454	01L/16	258251	5200687	0.025	93	0.1	0.25	11.5	5969	2.6	105	0.5	22	3.3	80	102	0.005	77
4455	01N/04	274127	5235648	0.025	270	2	1.2	6.7	8149	1.9	95	2	22	2.9	100	113	0.005	72
4456	01N/04	275017	5235371	0.025	336	0.1	0.25	6.2	9721	2.9	118	3	26	2.9	2.5	78	0.005	72
4457	01N/04	276124	5235636	0.025	231	0.8	0.7	6.2	7201	2.8	64	0.5	25	2.8	2.5	45	0.005	71
4458	01L/16	256945	5196594	0.025	89	0.1	0.25	3.9	6373	2	128	0.5	14	1.4	2.5	41	0.005	73
4459	01L/16	256613	5194571	0.025	161	1.1	0.25	7.4	8146	0.25	118	0.5	21	3	60	91	0.03	79
4461	01L/16	258881	5194919	0.025	95	0.1	0.25	8.6	10549	2.3	144	0.5	8	2.2	2.5	46	0.005	67
4462	01L/16	260224	5196467	0.025	91	0.1	0.25	7	6568	1.7	131	0.5	12	2.4	2.5	25	0.005	73
4463	01L/16	258573	5190223	0.025	125	0.1	0.25	8.4	6458	0.25	78	0.5	21	4.3	2.5	95	0.005	89
4464	01L/16	260725	5190188	0.025	101	0.1	0.25	6.9	8235	6.5	153	8	19	3.9	2.5	46	0.1	89
4465	01L/16	261371	5188818	0.025	75	0.1	0.25	8.3	5753	2.5	107	0.5	27	3.8	2.5	95	0.005	91
4466	01L/16	264052	5190165	0.025	236	0.1	0.25	7.4	8103	3.8	151	0.5	16	2.4	2.5	114	0.005	123
4467	01L/16	267725	5188775	0.025	82	0.1	0.25	13.4	4990	0.25	132	0.5	25	4.3	220	274	0.005	78
4468	01L/16	266293	5186794	0.025	128	0.1	1.4	5.6	4763	0.25	134	0.5	12	2.4	2.5	82	0.005	56
4469	01L/16	268848	5191518	0.025	106	0.1	0.25	9.7	6389	4.2	143	11	12	2.4	2.5	79	0.005	68
4470	01L/16	271026	5191944	0.025	128	0.1	0.25	10.4	5578	3.2	126	8	20	4.1	140	102	0.005	74
4471	01N/04	300053	5233019	0.025	134	0.1	0.8	6	5049	0.25	71	5	17	3.3	2.5	62	0.05	82
4472	01N/04	298084	5233054	0.025	136	0.1	0.25	8.3	5030	3	79	0.5	19	3.8	2.5	45	0.005	76
4473	01N/04	296036	5232071	0.025	150	0.1	0.8	6.9	4932	2.5	82	0.5	21	3.4	2.5	67	0.005	81
4474	01N/04	294032	5231082	0.025	163	0.1	0.25	7.3	5487	0.25	76	0.5	20	3.4	2.5	59	0.005	76
4475	01N/04	292000	5230823	0.025	157	0.1	0.25	7.6	5655	0.25	66	0.5	20	3.2	100	79	0.005	80
4476	01N/04	290228	5231070	0.025	135	0.1	0.25	10.2	5752	4	81	0.5	19	3.2	2.5	58	0.005	80
4477	01N/04	288019	5230890	0.025	91	0.1	0.25	9.5	6386	0.25	91	0.5	12	4	2.5	39	0.005	77
4478	01N/04	286193	5230978	0.025	136	0.1	0.25	7.8	3116	2.3	42	0.5	12	5.1	2.5	35	0.005	81
4479	01N/04	283824	5231149	0.025	161	0.1	0.25	7.1	5426	2.3	82	0.5	17	3	2.5	50	0.005	66
4480	01N/04	281808	5231754	0.025	193	0.1	0.25	7.1	5157	1.7	56	0.5	20	3.4	2.5	48	0.08	66
4481	01N/04	278459	5230996	0.025	205	0.1	0.25	8.6	5507	2.7	63	3	12	3.7	2.5	28	0.005	53
4482	01N/04	276917	5231470	0.025	220	0.1	0.25	8.2	5937	2.5	80	0.5	23	3.7	2.5	51	0.005	69
4483	01N/04	273261	5232137	0.025	147	0.1	0.25	6.5	4196	0.25	55	0.5	10	3.7	2.5	15	0.005	69
4484	01M/01	272521	5230935	0.025	182	0.1	0.25	7.6	6098	0.25	75	0.5	20	3.2	2.5	55	0.06	78
4485	01N/04	274317	5231013	0.025	203	0.1	0.25	7.3	6839	0.25	92	0.5	20	3.4	2.5	48	0.005	70
4486	01N/04	275831	5229234	0.025	191	0.1	1.1	6.2	5577	3	84	0.5	15	3.4	2.5	31	0.005	60
4487	01N/04	300077	5231210	0.025	132	0.1	0.25	7.9	5084	0.25	67	0.5	16	3.2	130	58	0.005	83
4488	01N/04	297916	5230582	0.025	159	0.1	0.25	7.9	4808	2.2	75	0.5	17	3.4	2.5	50	0.005	77
4489	01N/04	296104	5230258	0.025	119	0.1	1	7.5	5487	2.2	90	0.5	19	3.2	2.5	106	0.005	88
4490	01N/04	294111	5229041	0.025	173	0.1	0.25	8.1	6431	3	70	0.5	22	3.9	2.5	47	0.005	84
4491	01N/04	291905	5228869	0.025	93	0.1	0.25	9.6	6523	2	91	0.5	18	4.1	2.5	74	0.005	95
4492	01N/04	290067	5228901	0.025	130	0.1	0.25	7.3	5026	3	61	0.5	19	3.4	2.5	48	0.005	69
4493	01N/04	287953	5229156	0.025	181	0.1	0.25	7	6116	2.7	54	0.5	20	3.5	2.5	48	0.06	76
4494	01N/04	286260	5228952	0.025	141	0.1	0.25	8.7	6241	4.1	63	0.5	18	3	2.5	41	0.005	73

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 %	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm	
4495	01N/04	284158	5229221	0.025	159	0.1	0.25	6.5	7326	1.8	107	0.5	12	3.7	2.5	24	0.005	69
4496	01N/04	282252	5229113	0.025	167	1.8	0.25	7.8	5461	3.1	69	0.5	18	3.4	2.5	58	0.005	70
4497	01N/04	278206	5228886	0.025	209	0.1	0.25	8.2	7164	3.5	107	0.5	19	3.4	2.5	49	0.005	73
4498	01N/04	273787	5228704	0.025	185	0.1	0.25	7.3	7057	0.25	88	0.5	15	3.7	2.5	31	0.005	72
4499	01M/01	271184	5228639	0.025	128	0.1	0.25	6.1	7048	2.5	83	0.5	9	3.7	2.5	17	0.05	67
4500	01M/01	270406	5227773	0.025	89	7.4	0.25	10.2	3595	18.5	16	0.5	27	6.6	2.5	26	0.1	366
4501	01N/04	272681	5227177	0.025	73	0.1	1.1	13.3	4632	3.9	68	0.5	19	2.6	2.5	29	0.005	68
4502	01N/04	274152	5226733	0.025	125	0.1	0.25	7.3	8342	3.4	146	0.5	13	3	2.5	32	0.005	67
4503	01N/04	276170	5227068	0.025	203	0.1	0.25	7.6	7481	3	123	0.5	18	3.2	2.5	37	0.005	71
4504	01N/04	278374	5226902	0.025	228	0.1	0.25	6.2	9693	0.25	158	0.5	12	3.8	2.5	22	0.005	70
4505	01N/04	279987	5226576	0.025	119	3.3	0.25	9.2	8956	2.4	139	0.5	14	3.8	2.5	29	0.005	87
4506	01N/04	299345	5229363	0.025	130	0.1	0.25	8.5	6247	3.4	92	0.5	19	3.3	2.5	51	0.05	97
4507	01N/04	298169	5229110	0.025	116	0.1	0.25	8.5	5243	0.25	74	0.5	18	3.2	2.5	62	0.05	90
4508	01N/04	296065	5228103	0.025	89	0.1	0.25	9.4	6476	3.6	122	0.5	16	3.6	2.5	24	0.005	109
4509	01N/04	294488	5226944	0.025	159	0.1	0.25	7.3	5848	2	63	0.5	19	3	2.5	55	0.005	86
4510	01N/04	292052	5227294	0.025	158	0.1	0.25	8.7	5675	3	64	0.5	20	3.5	2.5	66	0.005	84
4511	01N/04	290110	5227038	0.025	186	3	0.25	7.3	6864	2.8	56	0.5	22	3.3	2.5	44	0.05	85
4512	01N/04	288119	5226905	0.025	172	0.1	0.25	7	5791	0.25	55	0.5	20	3.6	2.5	44	0.005	73
4513	01N/04	286066	5227237	0.025	170	3.4	0.25	7	6219	4.4	63	0.5	20	3.6	2.5	42	0.005	79
4514	01N/04	284427	5227281	0.025	144	0.1	0.25	8.4	5723	3.5	73	0.5	20	3.4	2.5	43	0.07	76
4515	01N/04	282033	5226962	0.025	180	0.1	0.25	7.5	7724	3.1	140	0.5	20	3.4	2.5	38	0.005	78
4516	01M/01	269896	5225516	0.025	248	0.1	0.25	6.5	15897	0.25	216	0.5	12	4.1	2.5	27	0.005	91
4518	01M/01	272349	5225261	0.025	161	0.1	0.25	7.7	7734	2.2	114	0.5	13	3.9	2.5	33	0.005	77
4519	01N/04	274422	5224777	0.025	216	0.1	0.25	8.1	5068	3.1	88	0.5	17	2.7	2.5	43	0.005	66
4520	01N/04	276527	5225068	0.025	219	0.1	0.25	8.4	7222	0.25	164	0.5	12	3.6	2.5	26	0.005	71
4521	01N/04	278249	5225420	0.025	191	0.1	0.25	5.8	6664	3	111	0.5	15	3.4	2.5	37	0.05	71
4522	01N/04	280482	5225345	0.025	253	2.4	0.25	9	6934	3.2	88	0.5	25	3.4	2.5	40	0.005	85
4523	01N/04	282148	5224878	0.025	214	0.1	0.25	6.6	5619	3.2	62	0.5	21	3.2	2.5	46	0.005	77
4524	01N/04	284615	5224639	0.025	210	0.1	0.25	7.4	6537	3.1	61	2	23	3	2.5	49	0.005	88
4525	01N/04	286115	5225115	0.025	144	0.1	0.25	7.7	6340	0.25	84	0.5	15	3.1	2.5	32	0.03	88
4526	01N/04	288024	5225292	0.025	186	0.1	0.25	6.5	6775	2.8	55	0.5	21	2.9	2.5	43	0.04	86
4527	01N/04	289794	5225229	0.025	174	2.4	0.25	8.6	7431	3.1	60	0.5	22	3.4	2.5	44	0.005	82
4528	01N/04	291752	5224860	0.025	166	0.1	0.25	6.3	5565	2.9	59	0.5	17	2.5	2.5	41	0.005	83
4529	01N/04	294240	5224911	0.025	144	0.1	0.25	8.3	6822	2.1	85	0.5	17	2.9	2.5	42	0.005	97
4530	01N/04	295730	5225411	0.025	204	0.1	0.25	9.1	5563	0.25	72	0.5	15	3.5	2.5	33	0.03	86
4532	01N/04	296096	5223688	0.025	126	0.1	0.25	8.1	5086	0.25	76	0.5	16	2.7	2.5	51	0.005	90
4533	01N/04	293318	5223970	0.025	148	0.1	0.25	7.5	4575	1.6	62	0.5	17	2.3	100	44	0.005	76
4534	01N/04	289780	5223457	0.025	172	0.1	0.25	7.8	6433	3	56	0.5	21	2.9	2.5	50	0.005	89
4535	01N/04	288022	5222957	0.025	171	0.1	0.25	6.7	5880	1.5	52	0.5	20	2.8	2.5	46	0.02	77
4536	01N/04	286230	5222802	0.025	163	0.1	0.25	8.1	5703	2.7	55	0.5	18	2.8	2.5	46	0.005	68

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4537	01N/04	283977	5223083	0.025	173	0.1	1.1	10	5034	2.6	56	0.5	21	3.2	2.5	49	0.005	71
4538	01N/04	281912	5222944	0.025	246	0.1	0.25	8.8	5865	4.1	63	0.5	21	3.2	2.5	46	0.005	75
4539	01N/04	280112	5223100	0.025	223	0.1	0.25	8.1	5546	2.3	66	0.5	19	2.8	2.5	50	0.04	68
4540	01N/04	278244	5223189	0.025	262	1.5	0.8	6.8	5756	3.5	69	0.5	21	2.8	2.5	43	0.005	86
4541	01N/04	276046	5222893	0.025	265	1.3	0.25	7.6	5240	1.9	71	0.5	20	2.9	2.5	41	0.005	74
4542	01N/04	274201	5222616	0.025	212	1.4	0.25	8.6	5227	0.25	94	0.5	19	2.7	2.5	42	0.03	68
4543	01M/01	272100	5223180	0.025	403	0.1	0.25	6.7	6879	2	109	0.5	18	2.6	2.5	46	0.005	68
4544	01M/01	269464	5223283	0.025	338	2	0.25	5.8	8739	2.4	112	0.5	13	2.6	2.5	28	0.005	68
4545	01M/01	268859	5221588	0.025	401	0.1	0.25	6.1	6035	1.4	89	0.5	20	2.4	2.5	44	0.005	69
4546	01M/01	271004	5221341	0.025	90	2.6	0.8	9.1	4851	0.25	66	0.5	13	2.8	50	49	0.06	89
4547	01N/04	272448	5221126	0.025	201	0.1	0.25	7.2	7294	2.7	85	0.5	15	2.7	2.5	36	0.005	70
4548	01N/04	274158	5221053	0.025	366	0.1	0.25	6.7	5380	0.25	90	0.5	20	2.6	2.5	36	0.005	65
4549	01N/04	276067	5221062	0.025	293	0.1	0.25	6.3	5004	2	74	0.5	23	3	2.5	52	0.03	69
4550	01N/04	277978	5221122	0.025	260	1.8	0.25	7.2	5448	2.9	68	0.5	21	3	2.5	43	0.005	72
4552	01N/04	279954	5220919	0.025	131	0.1	0.25	9.3	4588	2.6	74	0.5	17	2.5	2.5	42	0.005	69
4553	01N/04	281867	5221018	0.025	226	0.1	0.8	6.7	5388	2.5	68	0.5	20	2.7	2.5	44	0.005	73
4554	01N/04	283694	5220815	0.025	169	0.1	0.25	7.5	6033	2.8	77	0.5	20	3.1	2.5	42	0.005	78
4555	01N/04	286170	5221035	0.025	178	0.1	0.6	6.8	5881	2.5	56	0.5	21	2.8	2.5	43	0.005	78
4556	01N/04	288334	5221133	0.025	177	0.1	0.8	7.7	5658	1.7	56	0.5	21	3	2.5	43	0.005	79
4557	01N/04	286827	5219010	0.025	91	0.1	0.25	7.4	4922	0.25	102	0.5	13	3.3	2.5	26	0.005	81
4558	01N/04	284912	5218865	0.025	196	0.1	0.6	6.6	5582	2	64	0.5	23	3	2.5	53	0.005	76
4559	01N/04	282057	5218948	0.025	183	0.1	0.6	6.5	5368	3.3	69	0.5	18	2.7	2.5	46	0.005	73
4560	01N/04	280682	5218776	0.025	124	0.1	0.25	9	5225	1.7	77	0.5	16	2	60	33	0.005	64
4561	01N/04	278053	5219186	0.025	170	0.1	0.8	7.1	5665	2.5	86	0.5	16	3.1	2.5	34	0.005	79
4562	01N/04	276333	5219108	0.025	314	0.1	0.7	11.2	4553	3.9	71	0.5	27	3.4	2.5	59	0.005	67
4563	01N/04	274775	5219326	0.025	189	0.1	1.3	10.8	6619	3.3	114	0.5	16	3.9	2.5	42	0.005	82
4564	01N/04	272389	5219284	0.025	173	1.5	0.25	10.2	7448	3.5	101	0.5	16	3.4	2.5	30	0.005	75
4565	01M/01	270877	5219208	0.025	389	1.8	0.7	8.3	5789	3	86	0.5	24	2.9	2.5	58	0.005	73
4566	01M/01	268851	5219088	0.025	199	0.1	0.25	9.5	9257	3.2	116	0.5	14	3	2.5	39	0.005	79
4567	01M/01	267576	5217546	0.025	282	1.7	0.7	8.2	5450	1.9	71	0.5	23	2.7	2.5	50	0.02	69
4568	01M/01	270009	5217058	0.025	222	0.1	0.25	10	7067	3.6	107	0.5	30	3.9	2.5	90	0.005	101
4570	01M/01	271514	5216954	0.025	279	1.6	0.7	8.6	5662	2.9	76	0.5	22	3	60	57	0.005	70
4571	01N/04	273091	5216939	0.025	156	2	0.25	8.9	7142	2.9	98	0.5	14	3	50	35	0.005	78
4572	01N/04	275187	5217075	0.025	215	0.1	0.25	7.6	6596	3.5	82	0.5	15	2.8	2.5	28	0.03	77
4573	01N/04	277136	5217059	0.025	281	0.1	1	7	7716	3.6	125	0.5	27	2.9	2.5	81	0.005	70
4574	01N/04	279322	5216861	0.025	76	0.1	0.25	8.4	7644	2.6	125	0.5	14	2.1	2.5	24	0.005	80
4575	01N/04	280930	5216984	0.025	160	0.1	0.25	8.5	6702	2.6	91	0.5	20	2.9	2.5	40	0.005	77
4576	01N/04	283231	5216969	0.025	137	0.1	0.25	8.6	6286	3.5	76	0.5	19	3	2.5	41	0.005	84
4577	01N/04	285276	5216968	0.025	142	1.3	0.25	7.7	6267	2.4	69	0.5	19	3.2	2.5	48	0.04	87
4578	01N/04	284140	5215172	0.025	160	0.1	0.25	8.3	5986	3.4	56	0.5	21	3.1	2.5	61	0.005	80

Appendix A

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4579	01N/04	281976	5215073	0.025	197	0.1	0.8	8.6	5721	2.8	63	0.5	27	3.4	2.5	66	0.005	94
4580	01L/16	258393	5198934	0.025	44	0.1	0.25	10.4	4560	3.5	104	0.5	17	2.9	2.5	44	0.005	72
4581	01L/16	258256	5199847	0.025	126	0.1	0.25	7.4	6331	3.5	104	0.5	16	2.7	80	66	0.005	85
4582	01L/16	259643	5200513	0.025	124	0.1	1.1	8.4	6011	4.6	112	0.5	22	3.8	130	101	0.005	80
4583	01L/16	260576	5200183	0.025	69	0.1	1.1	9.7	6556	4.4	131	0.5	26	4.2	2.5	55	0.005	100
4584	01L/16	262154	5199964	0.025	124	1.1	0.25	7.6	6601	2.1	115	0.5	20	3.1	2.5	82	0.06	88
4585	01L/16	262065	5198588	0.025	145	0.1	0.25	7.7	6580	0.25	105	0.5	21	3.3	190	113	0.005	89
4586	01L/16	262366	5197782	0.025	106	0.1	0.25	10.6	6009	3.9	114	0.5	15	3.7	130	101	0.005	81
4587	01L/16	262316	5196675	0.025	132	0.1	0.25	8.8	6744	0.25	114	0.5	19	3.3	2.5	99	0.005	84
4588	01L/16	261567	5195992	0.025	112	0.1	0.25	7.6	6978	0.25	133	0.5	16	3.3	2.5	94	0.005	95
4590	01L/16	260603	5195458	0.025	279	0.1	0.9	10.6	7564	4.1	154	0.5	24	5.1	2.5	112	0.005	93
4591	01L/16	259880	5194621	0.025	184	0.1	0.25	9.7	7388	3.4	119	0.5	24	3.8	2.5	98	0.005	84
4592	01L/16	259313	5193835	0.025	143	0.1	0.25	7.9	7112	3.9	116	0.5	17	3.7	2.5	93	0.005	79
4593	01L/16	258171	5193185	0.025	157	2.1	1.3	7.9	9813	0.25	120	0.5	22	4	170	103	0.005	88
4594	01L/16	257427	5192327	0.025	128	0.1	0.25	8.6	6265	4.1	100	0.5	18	4.1	2.5	99	0.03	77
4595	01L/16	256945	5191337	0.025	140	0.1	1.4	10.2	6541	2.8	89	0.5	23	3.7	2.5	110	0.005	82
4596	01L/16	256160	5190229	0.025	103	0.1	2.4	13.9	3946	3.6	42	0.5	50	7.1	110	83	0.005	85
4597	01L/16	262792	5199358	0.025	140	0.1	0.9	8.1	6916	3.1	113	0.5	30	4.6	130	102	0.005	99
4598	01L/16	263949	5199054	0.025	152	0.1	1.2	8.1	6931	2	125	0.5	28	4.5	2.5	149	0.005	94
4599	01L/16	265292	5198860	0.025	140	0.1	0.25	10.2	6023	3.6	172	0.5	20	3.5	160	83	0.04	73
4600	01L/16	266418	5198471	0.025	109	0.1	0.25	12.1	5806	3.6	126	0.5	17	3.5	2.5	107	0.005	69
4601	01L/16	267068	5197362	0.025	138	0.1	1.1	11.2	5459	4.8	106	0.5	24	4.9	100	148	0.005	72
4602	01L/16	268119	5198265	0.025	106	2	0.25	10.3	4687	2.7	113	3	14	3	90	116	0.005	64
4603	01L/16	269224	5197683	0.025	112	0.1	0.25	11.2	5608	4	145	0.5	22	4	110	107	0.005	71
4604	01L/16	270140	5196811	0.025	99	0.1	0.9	11.2	5163	2.9	130	0.5	20	3.3	2.5	85	0.005	73
4605	01N/04	281233	5230660	0.025	267	0.1	1	6	5987	0.25	78	0.5	23	3.7	100	45	0.005	73
4607	01N/04	280421	5231574	0.025	243	1.6	0.25	7.1	6002	1.6	72	0.5	27	3.9	100	53	0.005	70
4608	01N/04	279910	5232282	0.025	198	0.1	0.25	6.6	5563	2.2	63	0.5	22	3.4	2.5	52	0.005	68
4609	01N/04	296025	5221216	0.025	145	0.1	0.9	8.3	5015	0.25	64	0.5	17	3.4	2.5	40	0.005	85
4610	01N/04	295106	5219356	0.025	133	0.1	0.25	8.6	4557	3.1	70	0.5	17	3.6	80	52	0.005	80
4611	01N/04	293659	5221239	0.025	129	1.8	0.25	7.7	4715	2.4	67	0.5	16	3	80	47	0.005	76
4612	01N/04	293157	5219222	0.025	148	0.1	0.25	6.6	4694	2.5	65	0.5	17	3.3	2.5	48	0.005	83
4613	01N/04	291061	5218927	0.025	129	0.1	0.25	7.1	5345	2	93	0.5	12	3.6	2.5	17	0.005	85
4614	01N/04	290134	5216972	0.025	118	0.1	0.25	7.3	7079	3.1	80	0.5	12	3.2	2.5	16	0.005	83
4615	01N/04	292090	5216961	0.025	112	0.1	0.25	7.4	4645	2.4	82	0.5	17	3.4	2.5	47	0.005	81
4616	01N/04	293780	5217403	0.025	130	0.1	0.25	9.6	4651	3.1	81	0.5	20	3.8	2.5	66	0.02	83
4617	01N/04	291905	5214989	0.025	163	1.8	0.25	8.2	5050	4.1	73	0.5	21	3.4	100	62	0.005	99
4618	01N/04	289980	5214896	0.025	171	0.1	0.25	6.6	6235	2	63	0.5	19	3.5	2.5	46	0.005	85
4619	01N/04	288360	5215003	0.025	198	0.1	1	8.6	6388	3	62	0.5	25	4.2	2.5	47	0.005	87
4620	01N/04	287617	5212857	0.025	159	2.6	0.25	9.6	6694	3.4	90	0.5	22	4.3	90	51	0.005	83

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4621	01N/04	287207	5211107	0.025	147	0.1	0.25	8.9	6528	0.25	85	0.5	19	3.7	150	65	0.005	84
4622	01N/04	286724	5209348	0.025	143	0.1	0.25	10.1	7244	1.8	139	3	21	4.3	100	46	0.005	89
4623	01K/13	285428	5207553	0.025	168	0.1	0.7	11.6	7494	2.7	121	0.5	19	4.2	2.5	40	0.03	98
4624	01K/13	283918	5205196	0.025	137	0.1	0.9	8.5	5551	2.4	76	0.5	21	3.3	2.5	55	0.005	83
4625	01N/04	283159	5209427	0.025	190	0.1	0.25	8.6	6872	2.8	62	0.5	22	3.6	2.5	49	0.005	90
4627	01N/04	283817	5211242	0.025	170	0.1	0.25	8.5	7110	2.9	63	0.5	21	3.7	80	43	0.03	96
4628	01N/04	284591	5213247	0.025	127	0.1	0.25	8	6007	2.9	91	0.5	13	4.3	2.5	19	0.005	97
4629	01N/04	279901	5215337	0.025	211	0.1	0.8	7.6	5402	2.8	69	0.5	25	3.7	2.5	63	0.005	78
4630	01N/04	277979	5214936	0.025	201	0.1	0.25	8.5	5980	0.25	89	0.5	25	3.3	2.5	78	0.005	70
4631	01N/04	276236	5214982	0.025	242	0.1	0.25	6.3	4895	0.25	72	0.5	22	3.1	2.5	75	0.08	77
4632	01N/04	274180	5214929	0.025	320	0.1	0.25	5	5447	3.4	89	0.5	26	3.2	2.5	68	0.005	70
4633	01N/04	272557	5214745	0.025	255	4.7	0.25	5.3	15834	0.25	91	6	16	4.6	2.5	34	0.005	79
4634	01M/01	270294	5214372	0.025	199	0.1	0.25	6.4	7597	0.25	97	0.5	16	2.6	2.5	26	0.005	71
4635	01M/01	268449	5214235	0.025	214	4.3	0.25	6.3	6919	4.6	99	6	16	4	2.5	34	0.005	75
4636	01M/01	266137	5215331	0.025	207	0.1	0.25	7.1	7133	2.3	101	0.5	24	3.5	2.5	72	0.005	85
4637	01M/01	265399	5213663	0.025	230	0.1	0.9	5.9	6080	0.25	90	0.5	21	3.4	2.5	62	0.005	77
4639	01N/04	282742	5213151	0.025	234	0.1	0.25	6	5388	4.2	54	0.5	26	3.5	2.5	51	0.09	78
4640	01N/04	281249	5213085	0.025	229	3.5	0.25	6.3	5656	0.25	62	0.5	24	3.5	2.5	57	0.005	80
4641	01N/04	278763	5213126	0.025	294	2.8	0.25	7.2	4915	0.25	71	0.5	25	3.1	130	57	0.005	68
4642	01N/04	277066	5212937	0.025	388	0.1	0.25	7	4891	3.3	75	3	23	2.8	2.5	44	0.005	60
4643	01N/04	274848	5213155	0.025	201	2.8	0.25	9.5	5799	5.5	113	0.5	21	4.1	110	44	0.08	78
4644	01N/04	272890	5213160	0.025	250	0.1	0.25	8	5524	4	88	0.5	22	3.5	110	47	0.005	68
4645	01M/01	271155	5213240	0.025	329	0.1	0.25	7.3	6490	3.5	89	0.5	22	3.3	2.5	43	0.03	72
4646	01M/01	269094	5213343	0.025	218	0.1	0.25	9.9	4997	4	61	0.5	37	4.7	2.5	99	0.005	78
4647	01M/01	267204	5213365	0.025	300	0.1	0.25	7.5	4787	3.1	70	0.5	26	4.2	2.5	57	0.03	77
4648	01M/01	264020	5212013	0.025	130	0.1	0.25	8	6585	3.1	123	0.5	15	4.1	2.5	49	0.005	72
4649	01M/01	265919	5211430	0.025	77	0.1	0.25	10	5769	4.4	112	0.5	15	3.9	2.5	47	0.005	75
4650	01M/01	268156	5211447	0.025	271	0.1	0.25	8.4	5175	3.5	92	0.5	22	3.3	2.5	47	0.005	67
4651	01M/01	269940	5211133	0.025	192	0.1	0.25	8.5	4981	0.25	76	0.5	21	2.6	2.5	45	0.005	68
4652	01N/04	272159	5211147	0.025	326	0.1	1.5	6.3	4809	3.3	76	0.5	21	3.1	2.5	45	0.03	63
4653	01N/04	274040	5211002	0.025	315	0.1	0.25	6.6	5597	2.2	81	0.5	24	3.3	2.5	49	0.005	64
4655	01N/04	276129	5210912	0.025	284	0.1	0.25	5.5	5526	0.25	96	0.5	21	3	2.5	50	0.05	67
4656	01N/04	277802	5211168	0.025	261	0.1	0.25	6.4	4139	2.2	79	0.5	21	3	2.5	48	0.005	66
4657	01N/04	279917	5211044	0.025	235	0.1	0.25	7.1	5782	0.25	121	0.5	20	2.8	2.5	49	0.005	70
4658	01N/04	282029	5211235	0.025	214	0.1	0.25	7.7	5649	3.3	59	0.5	22	3.6	2.5	53	0.07	78
4659	01N/04	281250	5209367	0.025	180	1.3	0.25	7.2	5297	0.25	65	0.5	21	3.3	2.5	56	0.005	71
4660	01K/13	279050	5208913	0.025	145	0.1	0.25	8.5	4430	2.2	90	0.5	9	2.5	2.5	24	0.005	83
4661	01K/13	277285	5208959	0.025	363	0.1	0.25	8.2	5043	3.2	87	3	20	3	2.5	64	0.005	75
4662	01N/04	280279	5228959	0.025	189	0.1	0.8	7.5	5340	2.6	85	0.5	20	3.5	2.5	48	0.005	69
4664	01K/13	274494	5208833	0.025	60	3	1.7	8.7	4611	0.25	53	0.5	25	3.5	2.5	34	0.005	57

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Tb1 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4665	01K/13	273274	5208962	0.025	137	3.3	0.25	15	4967	4.8	45	0.5	21	4.4	2.5	41	0.05	68
4666	01L/16	271360	5209070	0.025	345	0.1	0.25	7.3	5701	2.6	82	0.5	24	3.6	2.5	51	0.005	70
4667	01L/16	268819	5209272	0.025	229	0.1	0.25	8.5	5491	2.2	78	0.5	24	3.5	2.5	77	0.05	68
4668	01L/16	267360	5209235	0.025	271	0.1	1.1	8.8	5112	1.6	76	0.5	25	3.6	2.5	66	0.005	70
4669	01M/01	264926	5209740	0.025	103	0.1	0.25	11.4	6832	4	93	0.5	18	4.3	2.5	53	0.005	70
4670	01M/01	263160	5209787	0.025	52	0.1	0.25	9.5	5459	0.25	114	0.5	13	3.5	2.5	28	0.005	74
4671	01L/16	261909	5207716	0.025	112	0.1	0.25	10.3	6728	4	127	0.5	14	3.6	2.5	34	0.005	80
4672	01L/16	263592	5207285	0.025	73	0.1	0.8	11.3	6645	4.4	139	0.5	13	3.2	2.5	37	0.005	75
4673	01L/16	265759	5207363	0.025	236	0.1	0.25	7	6432	2.9	81	0.5	26	4	2.5	78	0.06	82
4674	01L/16	267620	5207211	0.025	147	0.1	0.25	8.5	4221	2.1	62	0.5	20	3.5	2.5	70	0.005	64
4675	01L/16	269883	5207143	0.025	181	0.1	0.25	7.9	5719	3.4	97	0.5	20	3.8	2.5	98	0.005	78
4676	01L/16	271761	5207265	0.025	251	0.1	0.25	9.4	5151	2.5	75	0.5	23	3.5	2.5	54	0.06	68
4677	01K/13	273762	5207349	0.025	218	0.1	0.25	7.4	5534	0.25	84	0.5	15	3.8	2.5	31	0.005	62
4678	01K/13	275934	5206857	0.025	253	2.1	0.9	9.9	4848	2.5	86	0.5	22	4.1	2.5	70	0.005	76
4679	01K/13	278134	5206991	0.025	141	0.1	0.25	14.2	5185	0.25	95	0.5	23	3.2	2.5	49	0.005	99
4680	01K/13	279979	5207009	0.025	153	0.1	0.25	8.6	5760	1.9	74	0.5	23	3.3	2.5	55	0.005	90
4681	01K/13	281497	5206840	0.025	68	0.1	0.25	12.6	5678	4.2	73	0.5	24	3.7	2.5	37	0.005	93
4682	01K/13	280525	5205167	0.025	200	0.1	0.25	8.3	7216	0.25	74	0.5	24	3.8	2.5	62	0.005	105
4683	01K/13	279104	5205035	0.025	204	0.1	0.25	10.3	5772	2.4	100	0.5	26	3.8	2.5	62	0.005	96
4684	01K/13	276795	5204979	0.025	206	0.1	0.25	9	5197	4	81	0.5	26	4.2	2.5	63	0.005	91
4685	01K/13	275111	5205072	0.025	271	0.1	0.25	9	5156	3	72	0.5	28	4.2	2.5	58	0.005	91
4686	01K/13	272667	5205296	0.025	211	0.1	0.25	7.4	6036	4.6	70	0.5	24	3.7	2.5	54	0.005	83
4687	01L/16	271727	5205248	0.025	236	0.1	0.25	8.3	6832	2.8	83	0.5	26	3.8	2.5	76	0.005	96
4688	01L/16	269562	5205116	0.025	187	0.1	0.8	8.6	7509	3	86	0.5	26	4	2.5	81	0.005	108
4689	01L/16	267517	5205267	0.025	89	0.1	0.25	10.3	7856	4	166	0.5	15	4	2.5	27	0.005	106
4690	01L/16	265724	5205485	0.025	185	0.1	0.25	9.2	8184	3.4	102	0.5	24	4.3	160	80	0.005	91
4691	01L/16	263737	5205817	0.025	162	0.1	0.25	8.4	6302	3.3	99	0.5	22	3.3	110	93	0.005	85
4692	01L/16	261977	5205360	0.025	134	0.1	0.25	9.4	6385	0.25	107	0.5	20	3.3	2.5	65	0.005	92
4693	01L/16	260991	5203978	0.025	166	0.1	0.25	7.8	7480	2.9	101	0.5	21	3.7	2.5	81	0.005	99
4694	01L/16	262998	5203470	0.025	95	0.1	0.25	10.2	10616	4	156	0.5	16	4	2.5	22	0.005	138
4695	01L/16	264314	5203486	0.025	163	0.1	1.3	10.4	7823	3.3	112	0.5	29	3.8	2.5	87	0.07	109
4696	01L/16	266799	5203281	0.025	133	0.1	0.25	8.4	7542	0.25	122	0.5	19	3.2	2.5	80	0.05	109
4697	01L/16	268611	5203545	0.025	141	0.1	0.25	12.2	6498	0.25	86	0.5	18	3.2	2.5	82	0.005	91
4699	01L/16	270604	5203031	0.025	148	0.1	0.25	10.6	6107	0.25	93	0.5	19	3.8	2.5	74	0.08	90
4700	01K/13	272796	5203379	0.025	125	0.1	0.25	10.6	8963	0.25	142	0.5	16	4.3	2.5	30	0.005	105
4701	01K/13	274105	5203112	0.025	204	1.9	0.25	7.6	7225	4.4	79	0.5	25	3.4	2.5	53	0.005	98
4702	01K/13	276011	5203225	0.025	159	0.1	0.25	8.5	4591	2	54	0.5	24	3	2.5	58	0.005	76
4703	01K/13	278163	5203318	0.025		4.2	0.25	10.4	2.6					3.8	2.5		0.03	
4704	01K/13	279161	5203539	0.025	74	0.1	0.25	9.4	4819	4.2	68	0.5	21	2.6	2.5	37	0.005	80
4705	01K/13	278576	5201337	0.025	149	1.9	0.25	9.4	7438	2.2	111	0.5	27	4.2	2.5	49	0.005	117

Sample	NTS	Eastings	Northing	Sr1 %	Sr2 ppm	Ta1 ppm	Ta2 ppm	Tb1 ppm	Tb2 ppm	Th1 ppm	Ti2 ppm	U1 ppm	V2 ppm	W1 ppm	Y2 ppm	Yb1 ppm	Zn1 ppm	Zn2 ppm	Zr1 %	Zr2 ppm
4706	01K/13	276201	5200905	0.025	210	0.1	0.25	6.8	7215	2.6	77	0.5	26	3.5	2.5	59	0.06	100		
4707	01K/13	274367	5200981	0.025	156	1.9	0.25	7	6965	2.9	100	0.5	19	3	2.5	88	0.005	103		
4708	01K/13	272031	5201233	0.025	149	0.1	0.25	8.5	7050	2	102	0.5	21	3.8	2.5	100	0.005	109		
4709	01L/16	270251	5201031	0.025	112	0.1	1.1	9.5	5174	4.2	90	0.5	19	2.7	2.5	84	0.005	88		
4710	01L/16	268317	5201206	0.025	114	1.6	1	10.4	6701	3.6	135	0.5	17	3.3	1.60	123	0.005	83		
4711	01L/16	266045	5201339	0.025		0.1	0.25	10.4	2.7					3.3	2.5		0.005			
4712	01L/16	264329	5201550	0.025	110	0.1	0.25	6.5	6128	1.8	93	0.5	17	2.6	2.5	73	0.05	88		
4713	01L/16	262355	5201616	0.025	70	1.9	0.25	7.3	8210	3.4	158	0.5	16	2.7	2.5	33	0.005	107		
4714	01K/13	277249	5199768	0.025	210	0.1	0.9	6.7	7779	2.7	84	0.5	29	3.8	1.10	83	0.04	115		
4716	01K/13	276088	5199032	0.025	82	0.1	0.25	9.5	4852	2.9	101	0.5	18	3.1	2.5	49	0.005	102		
4717	01K/13	274103	5199091	0.025	133	0.1	0.6	6.7	5333	2.4	99	0.5	20	3.1	2.5	69	0.005	88		
4718	01K/13	271984	5199198	0.025	94	0.1	0.25	13.3	5733	3.2	112	0.5	13	3.3	2.5	53	0.005	87		
4719	01L/16	270232	5199173	0.025	92	0.1	0.25	11.4	4842	4.8	124	0.5	13	2.3	2.5	85	0.03	81		
4720	01L/16	268215	5199674	0.025	124	0.1	0.25	5.3	8073	0.25	166	0.5	15	2.4	1.30	136	0.04	77		
4721	01L/16	260996	5201848	0.025	78	0.1	0.25	11.6	7766	3.6	114	0.5	20	3.6	2.5	51	0.005	110		
4722	01L/16	264828	5196840	0.025	111	0.1	0.25	9.6	5640	2	112	0.5	14	2.3	2.5	94	0.005	70		
4723	01L/16	268481	5195285	0.025	105	0.1	0.25	10.4	8713	0.25	178	0.5	15	2.7	2.5	61	0.005	94		
4724	01L/16	267351	5194003	0.025	117	0.1	0.25	15.8	4774	3.3	127	0.5	12	2.9	2.5	58	0.005	80		
4725	01L/16	266114	5195349	0.025	103	0.1	0.25	13.6	5971	3.3	141	4	13	2.4	1.30	87	0.005	84		
4726	01L/16	263627	5195310	0.025		2.3	0.25	13.6	0.25					3.1	2.5		0.005			
4727	01L/16	263401	5192068	0.025	78	0.1	0.25	13.6	3786	4.2	114	0.5	13	2.3	1.40	114	0.005	77		
4728	01L/16	261485	5191780	0.025	233	0.1	0.9	4.3	9072	0.25	205	0.5	15	2.3	2.5	95	0.03	68		
4729	01L/16	264369	5193621	0.025	208	0.1	0.25	3.8	15523	1.5	313	0.5	16	2.1	210	155	0.05	79		
4730	01L/16	266170	5193456	0.025	101	0.1	0.25	11.6	5256	5.7	140	0.5	12	2.7	2.5	62	0.005	75		
4731	01L/16	265287	5191305	0.025	87	3.2	0.25	13.3	5904	3.4	138	0.5	11	3.1	2.5	66	0.04	76		
4732	01K/13	272084	5194164	0.025	100	0.1	0.7	12.4	4796	3.5	130	0.5	15	2.8	1.20	76	0.005	78		
4733	01K/13	274091	5193787	0.025		0.1	0.25	11.6	4					2.8	2.20		0.005			
4734	01K/13	273837	5197541	0.025		0.1	0.25	7.6	2.3					3.2	1.10		0.005			
4735	01K/13	275422	5197496	0.025	127	0.1	0.25	9.1	5918	3	98	0.5	15	3.2	1.20	78	0.005	83		

Appendix B – List of Element Plots

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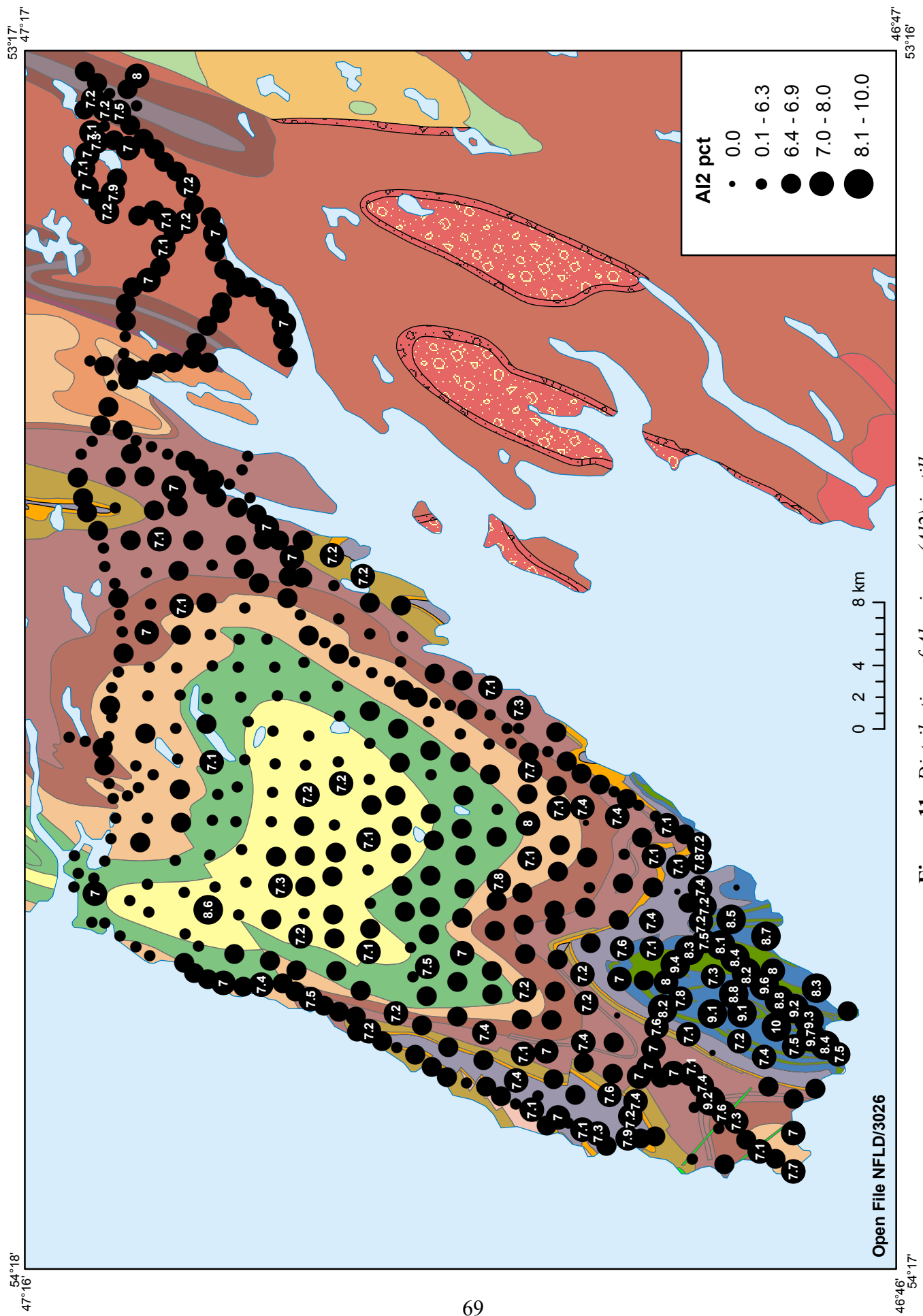


Figure 11. Distribution of Aluminum (Al₂) in till.

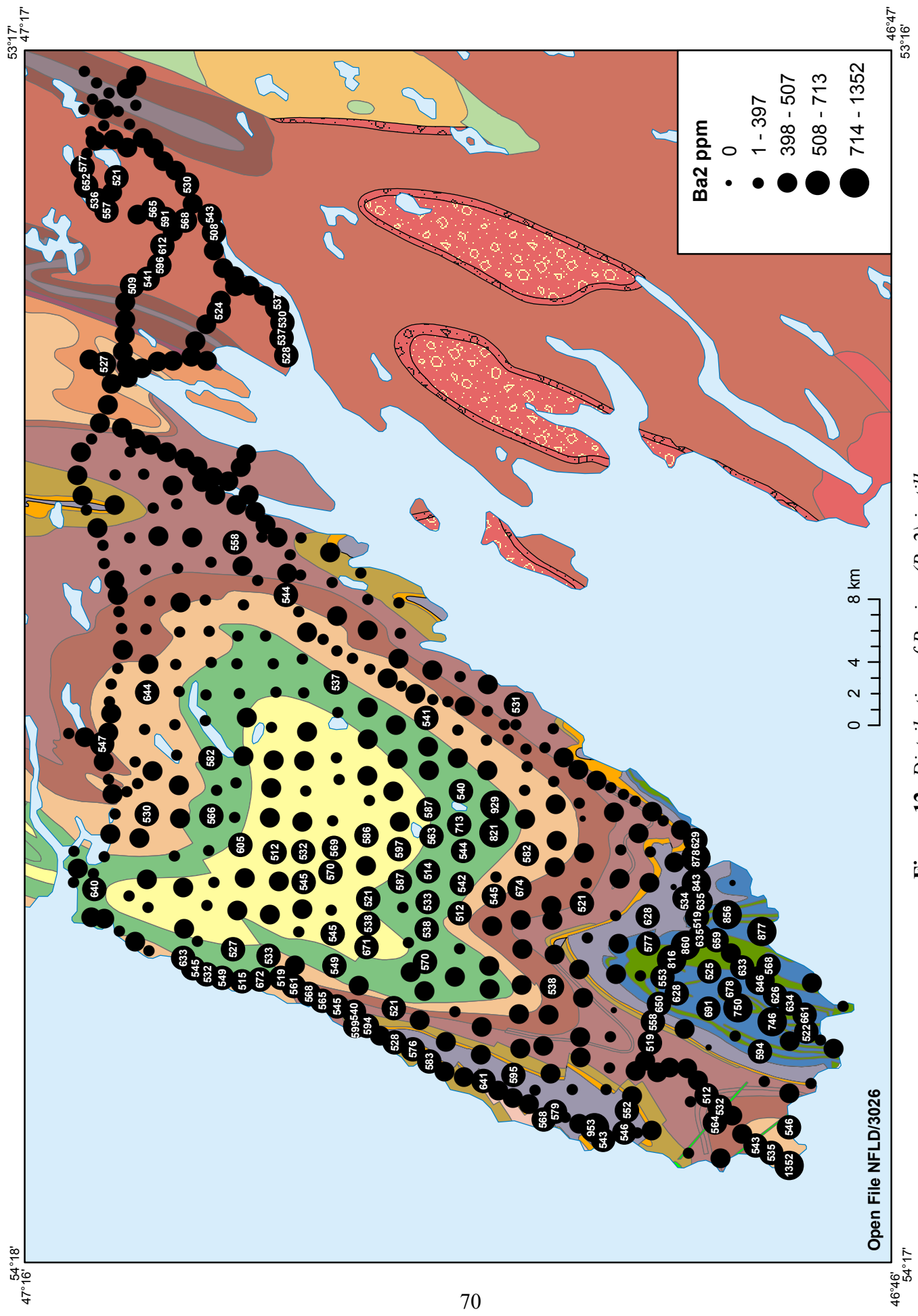


Figure 12. Distribution of Barium (Ba2) in till.

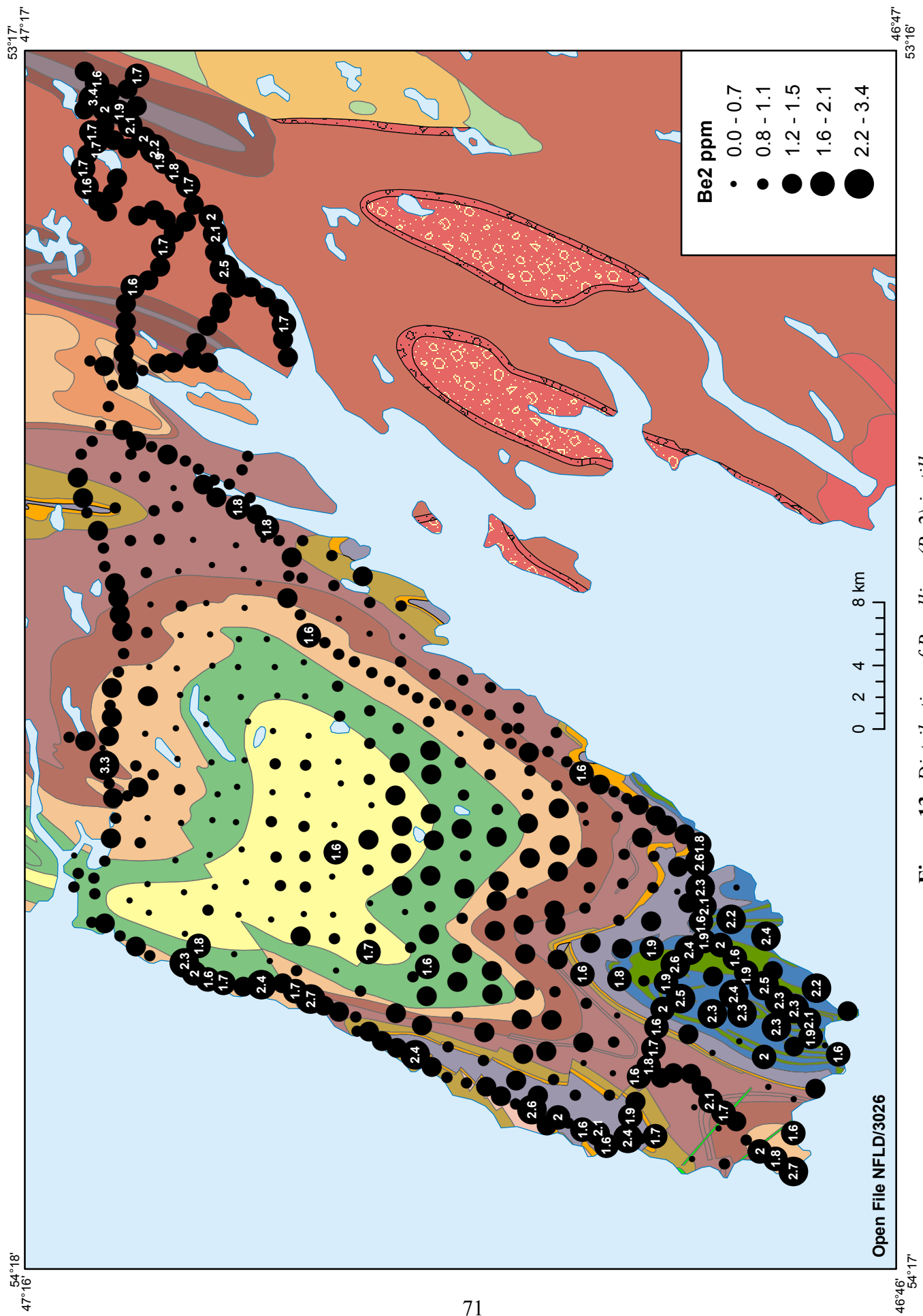


Figure 13. Distribution of Beryllium (Be2) in till.

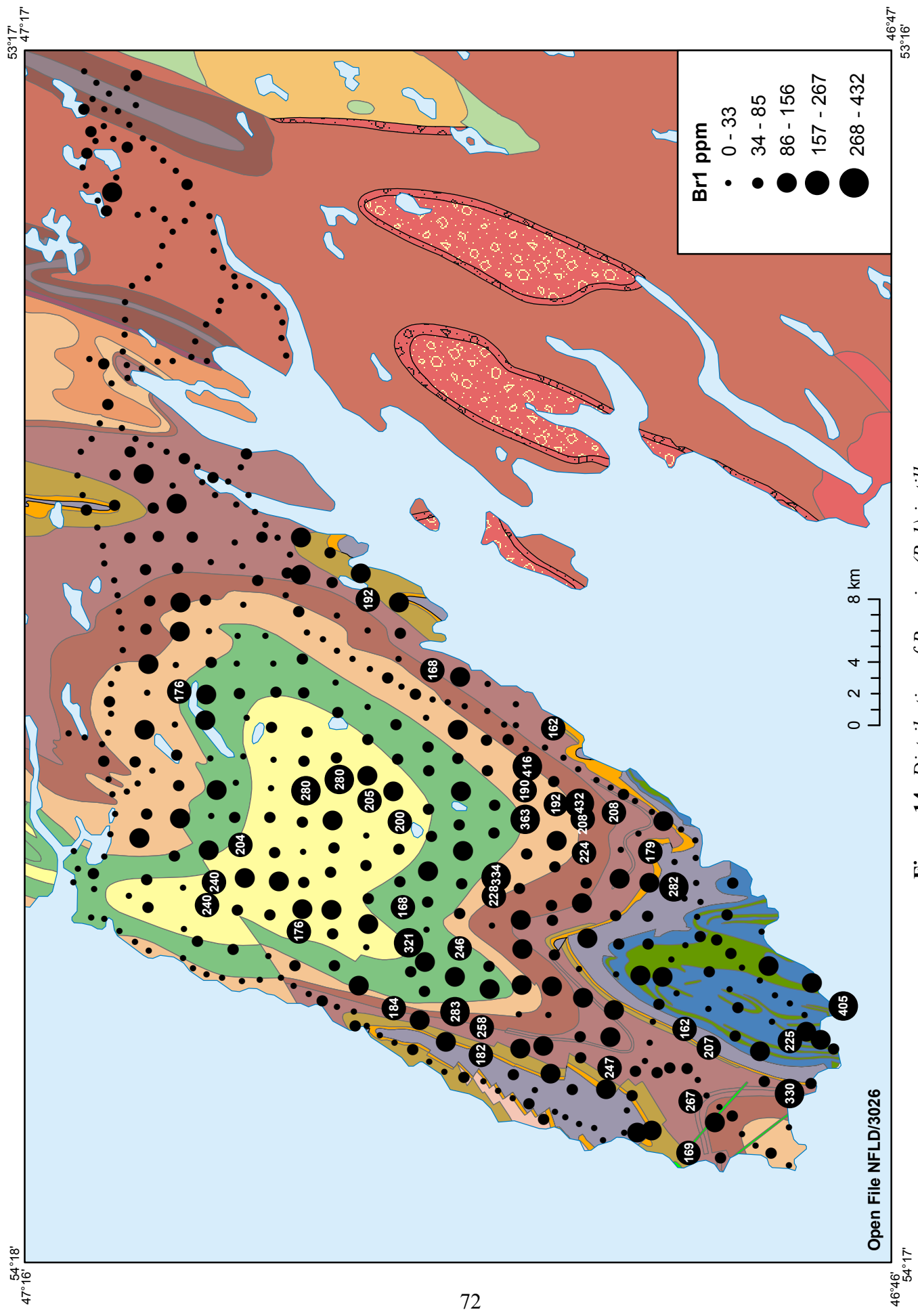


Figure 14. Distribution of Bromine (Br1) in till.

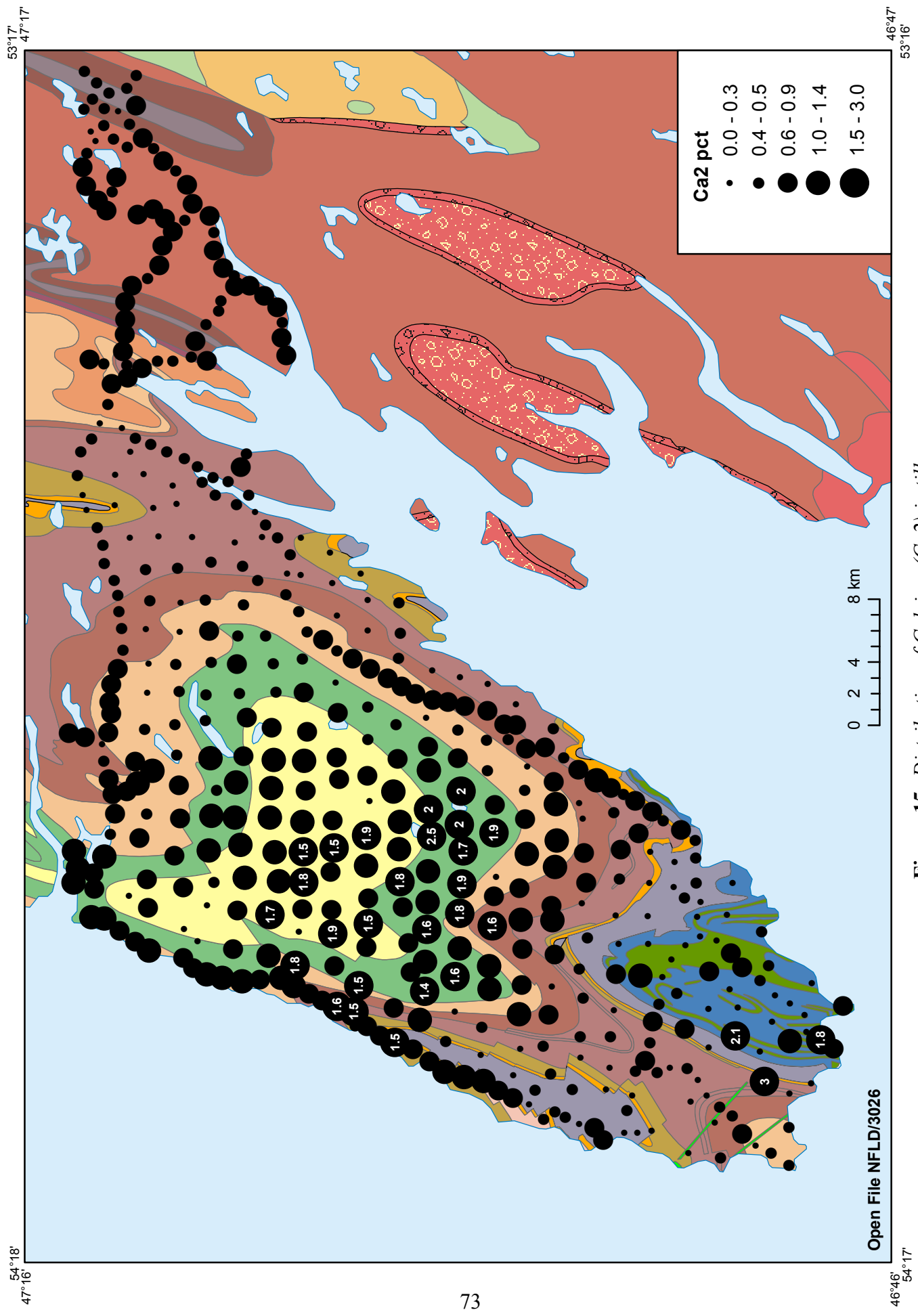


Figure 15. Distribution of Calcium (Ca2) in till.

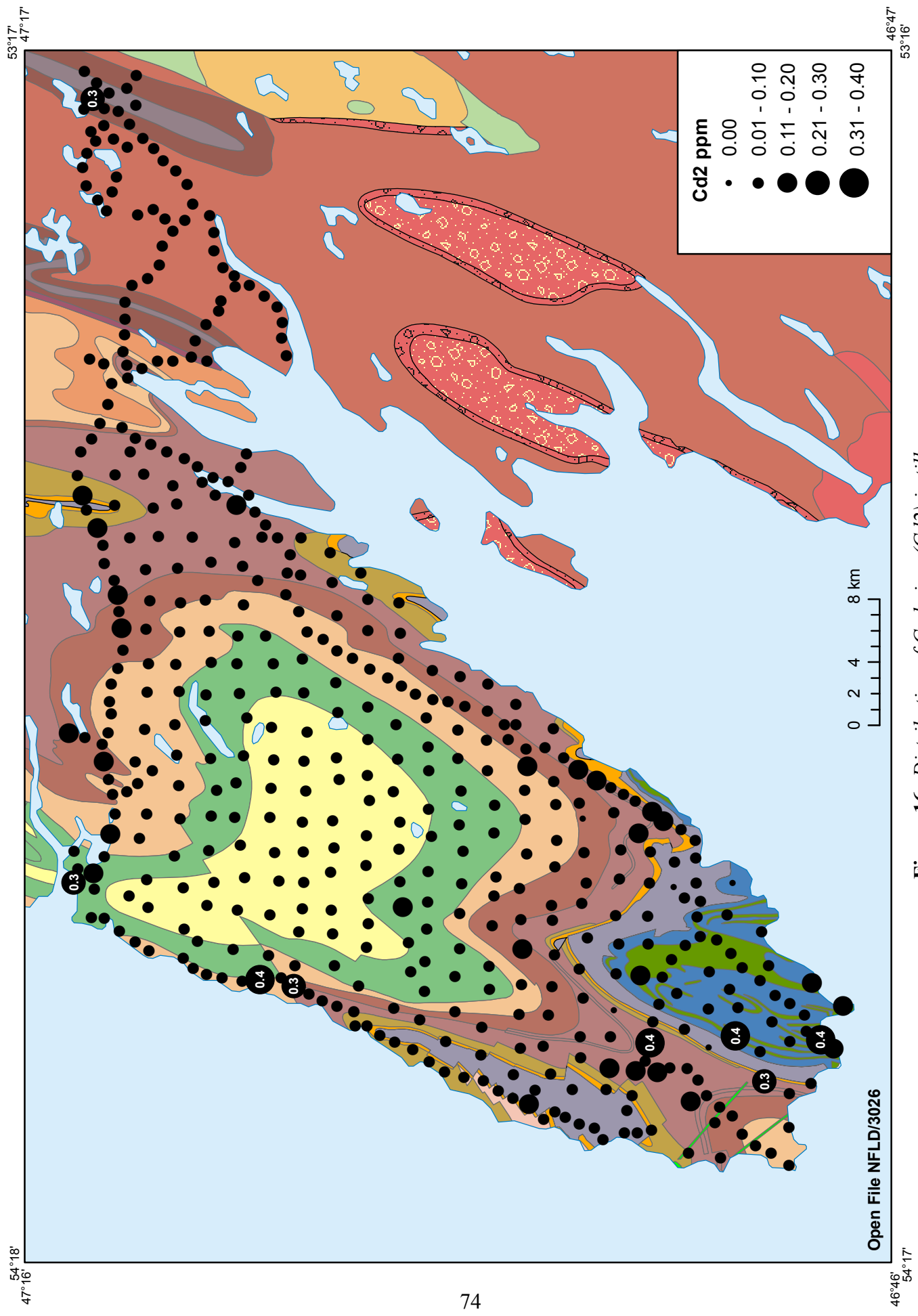


Figure 16. Distribution of Cadmium (Cd2) in till.

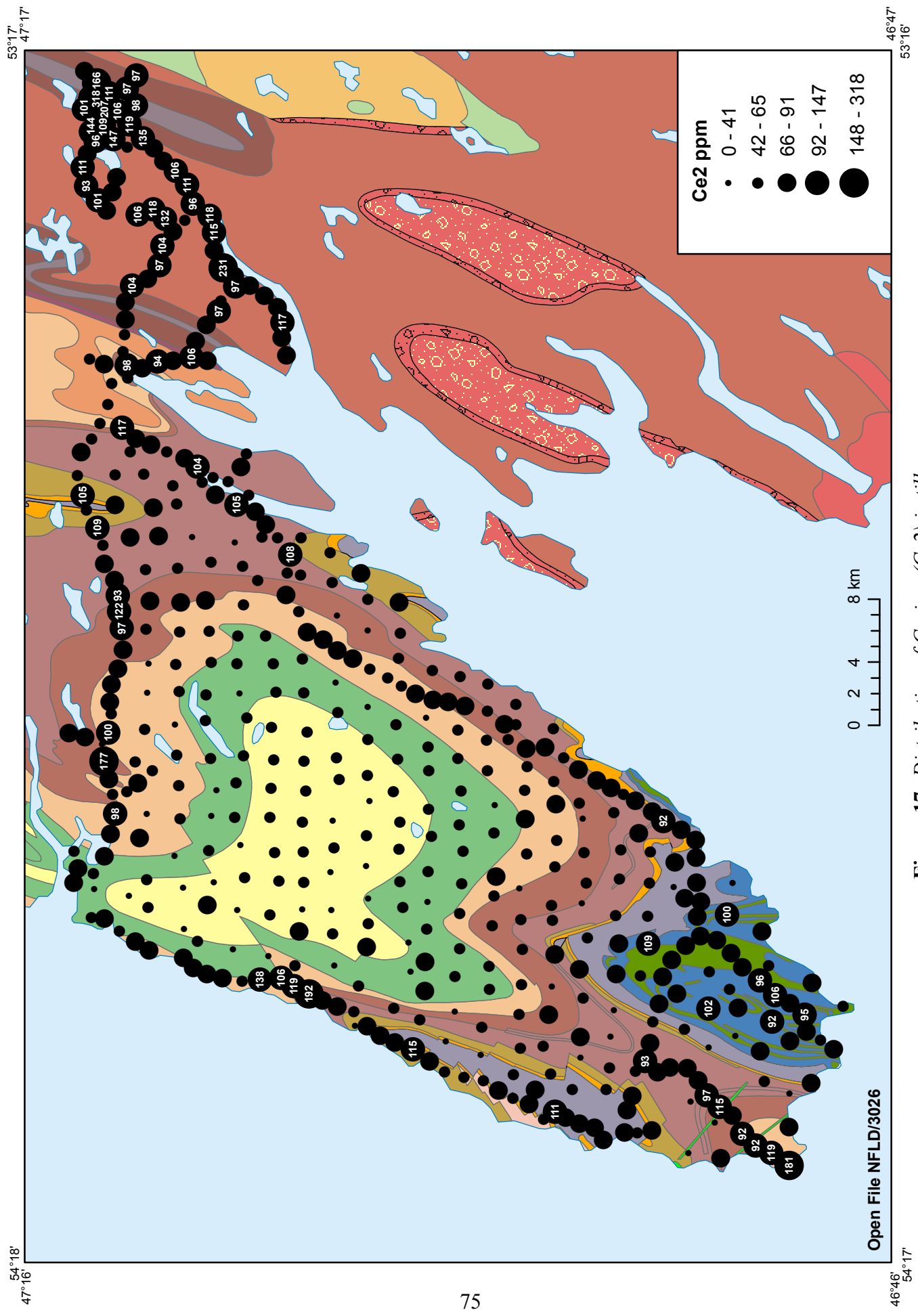


Figure 17. Distribution of Cerium (Ce2) in till.

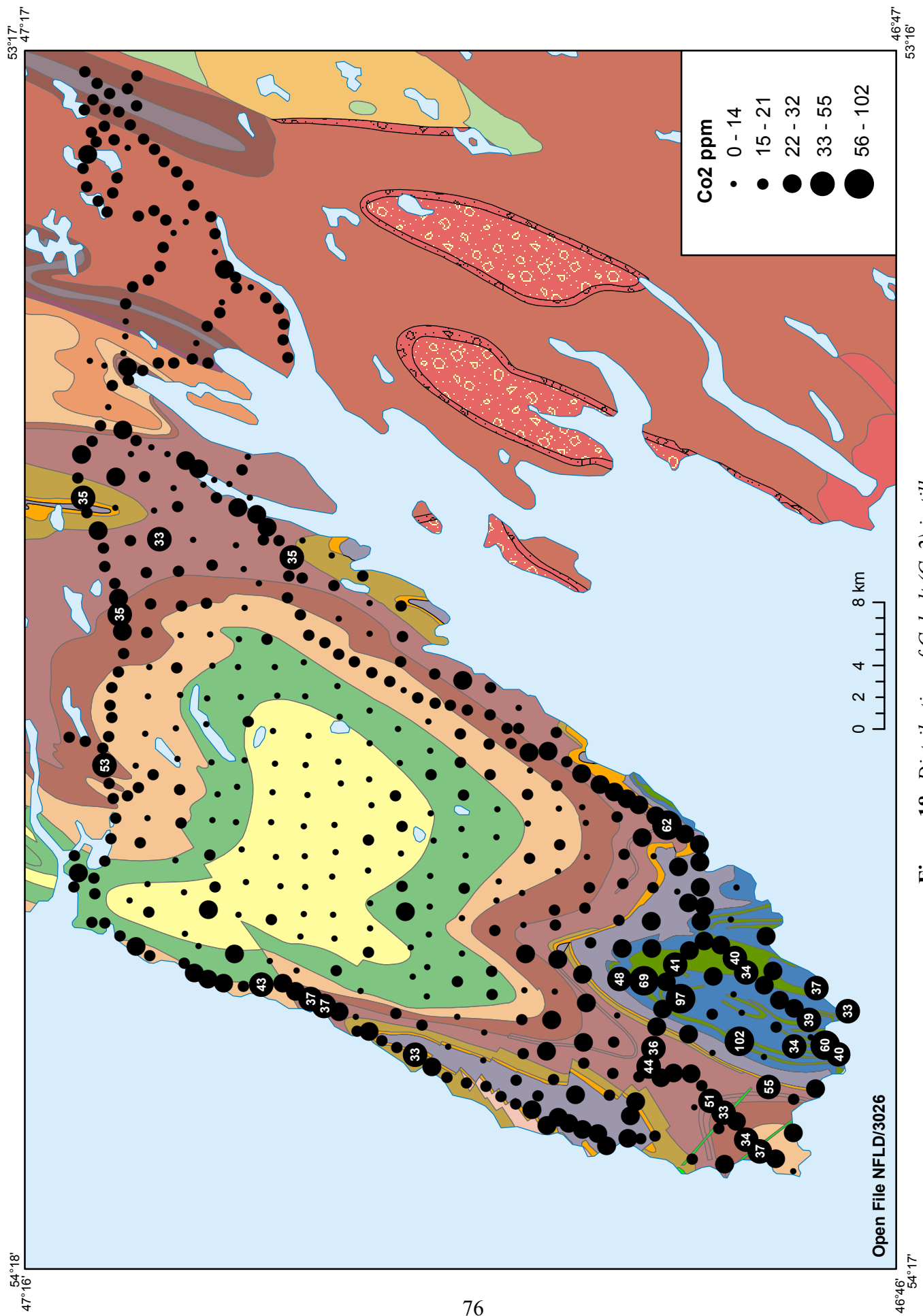


Figure 18. Distribution of Cobalt (Co2) in till.

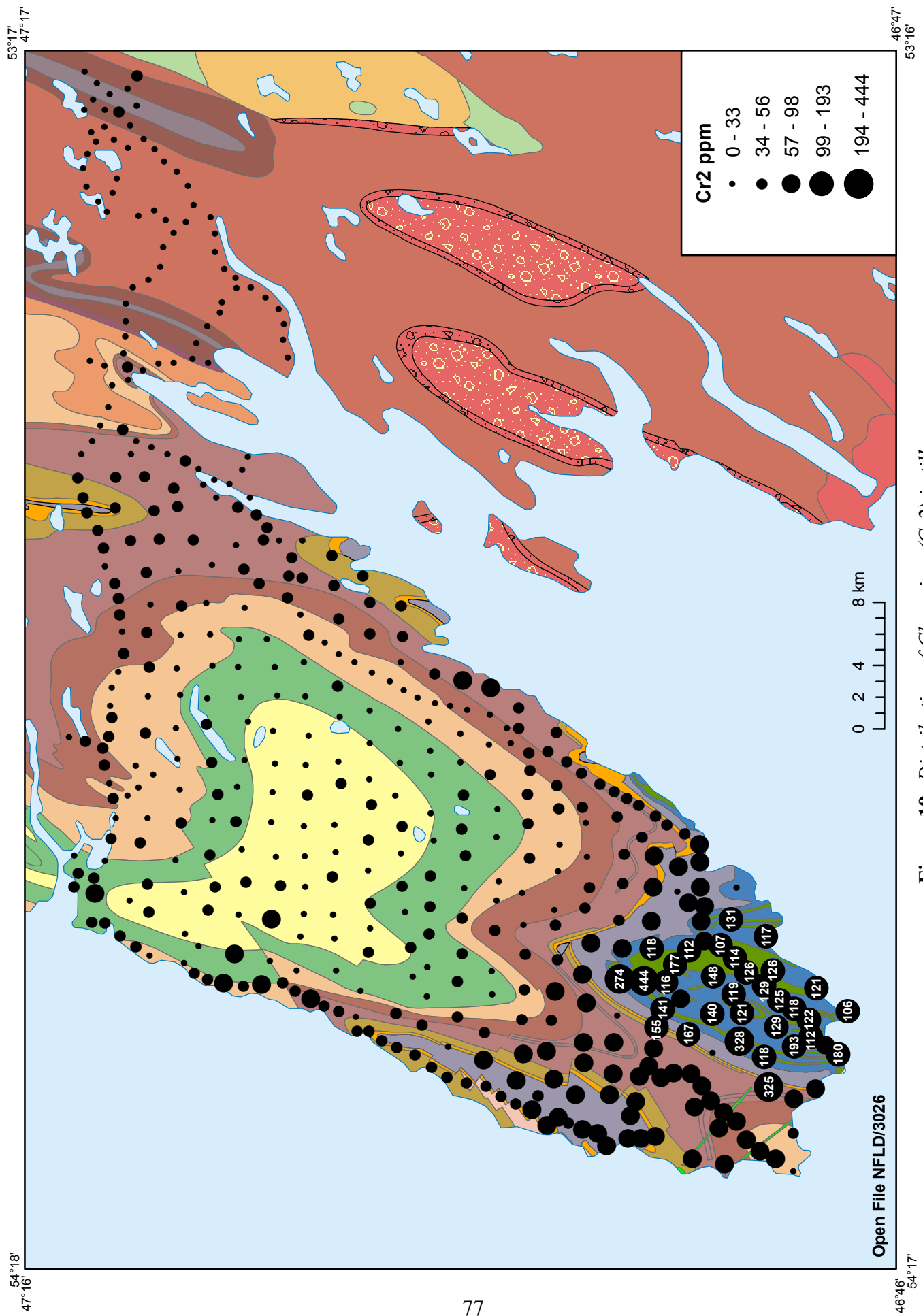


Figure 19. Distribution of Chromium (Cr2) in till.

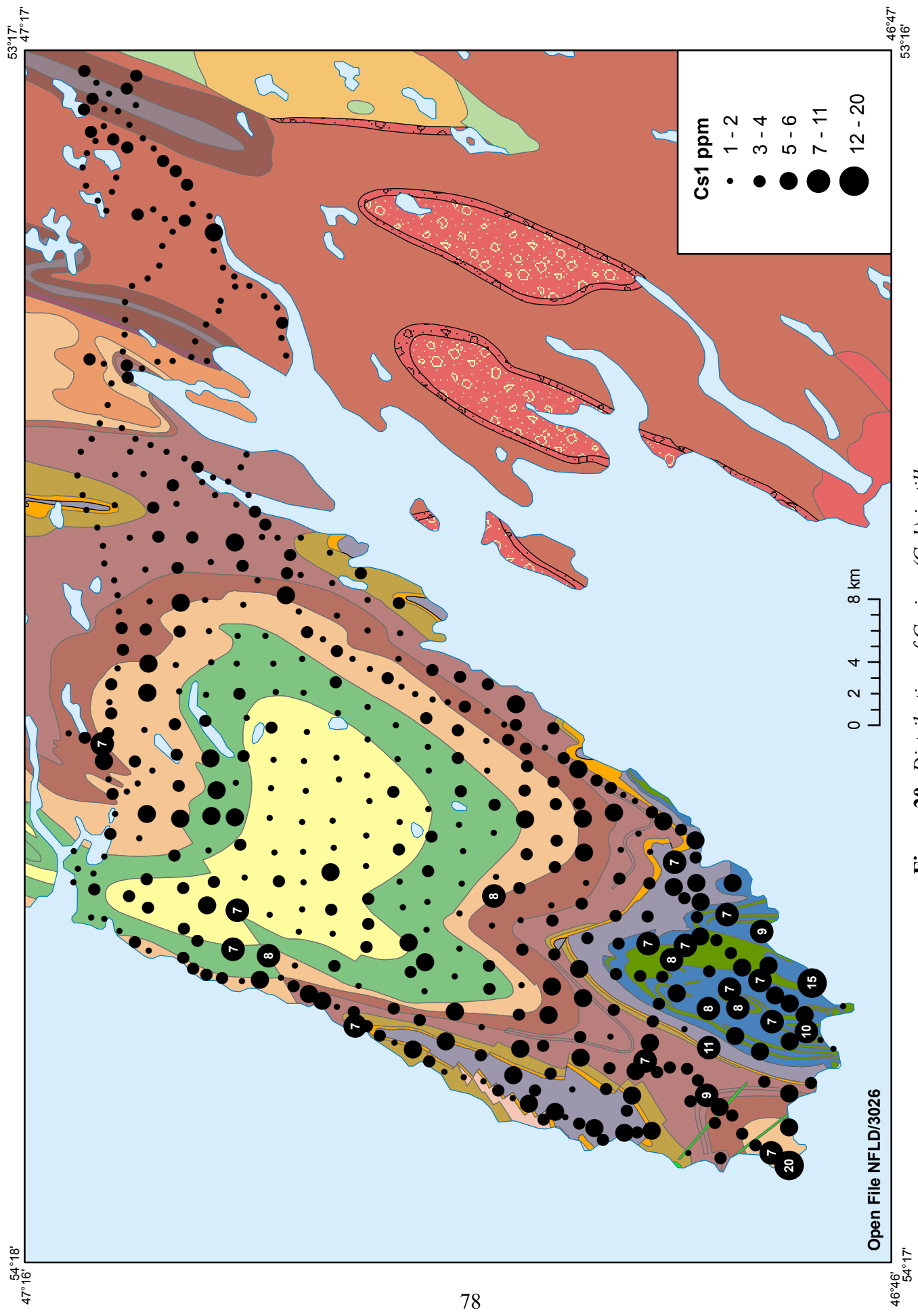


Figure 20. Distribution of Cesium (Cs1) in till.

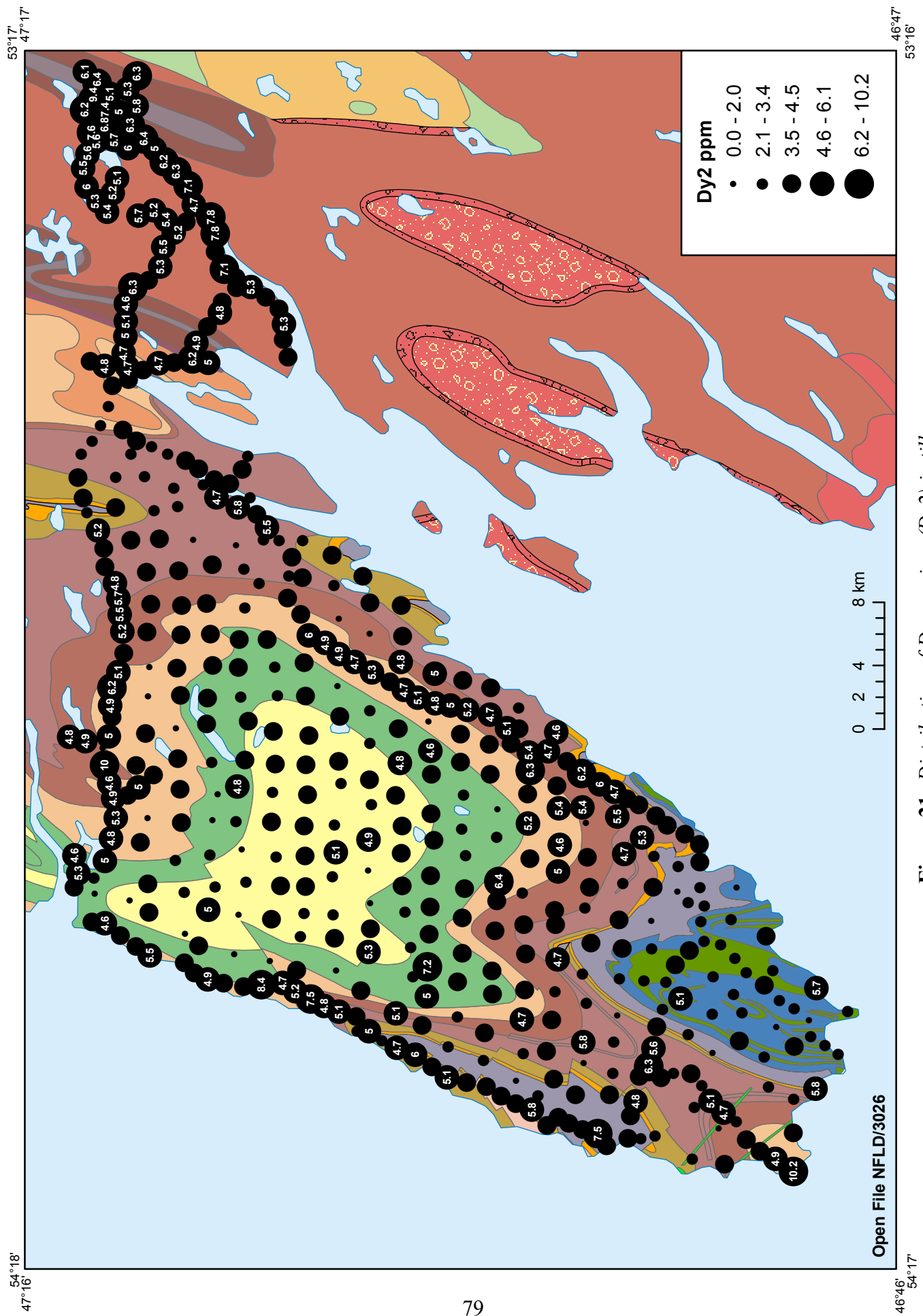


Figure 21. Distribution of Dysprosium (Dy2) in till.

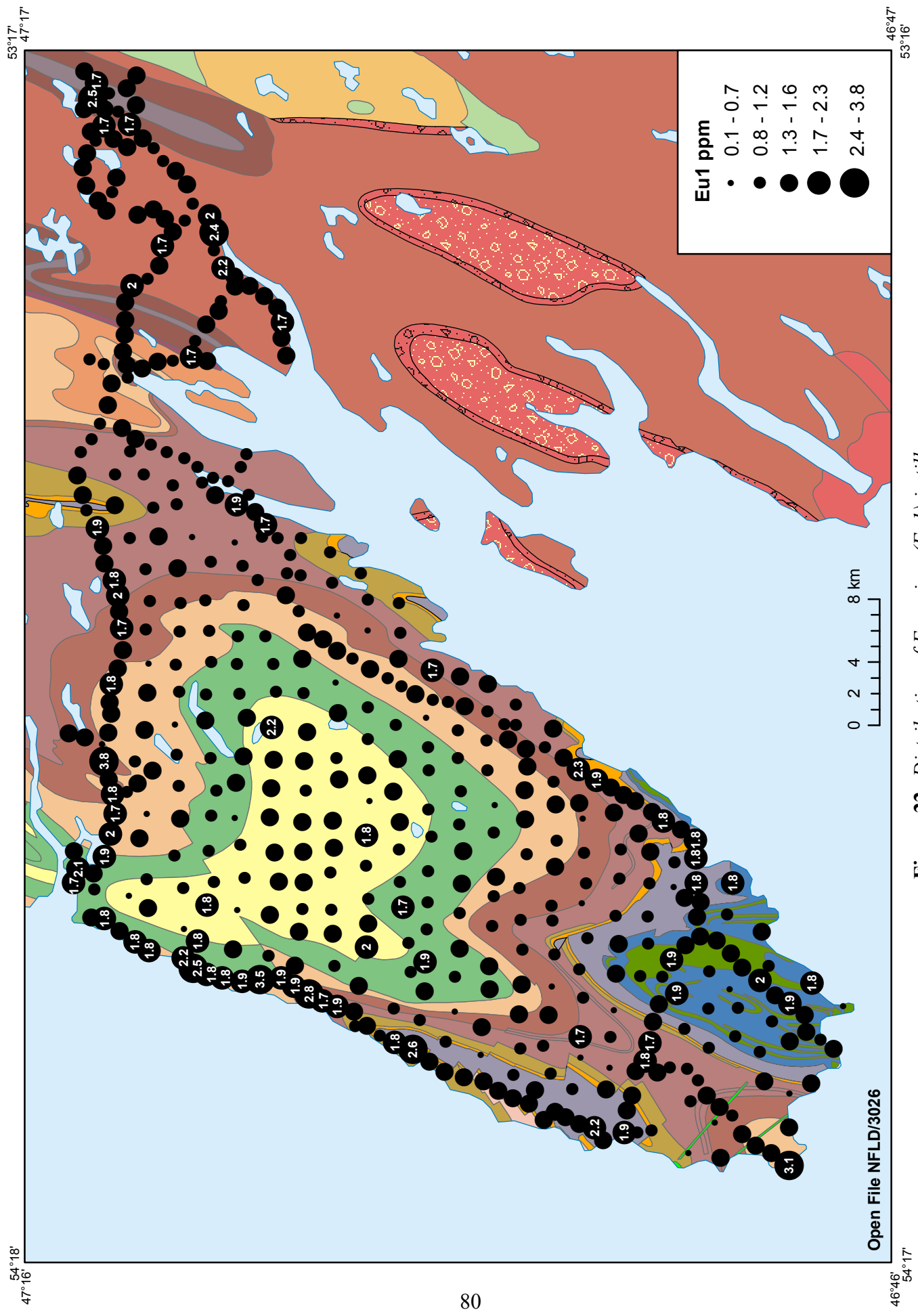


Figure 22. Distribution of Europium (Eu1) in till.

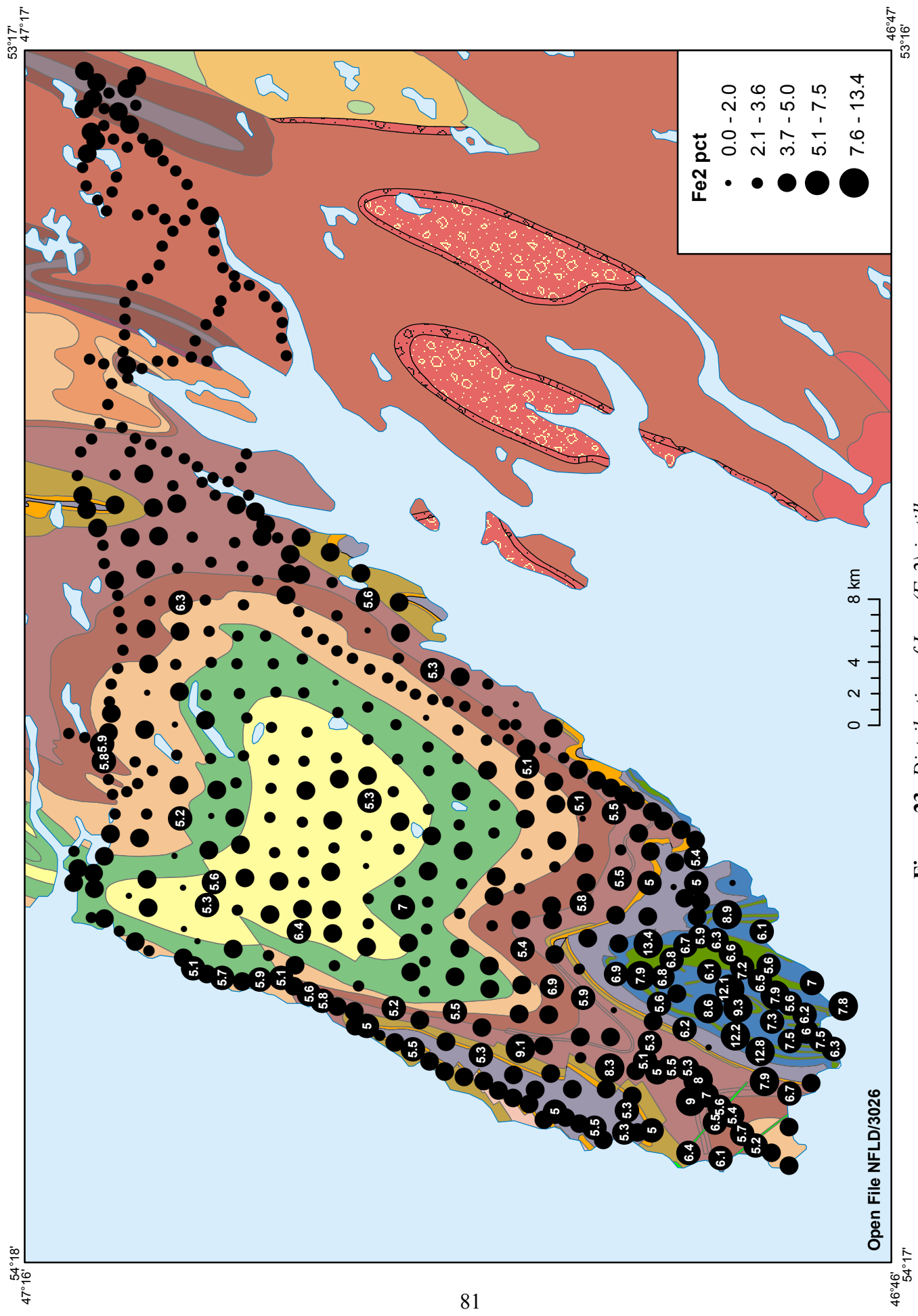


Figure 23. Distribution of Iron (Fe2) in till.

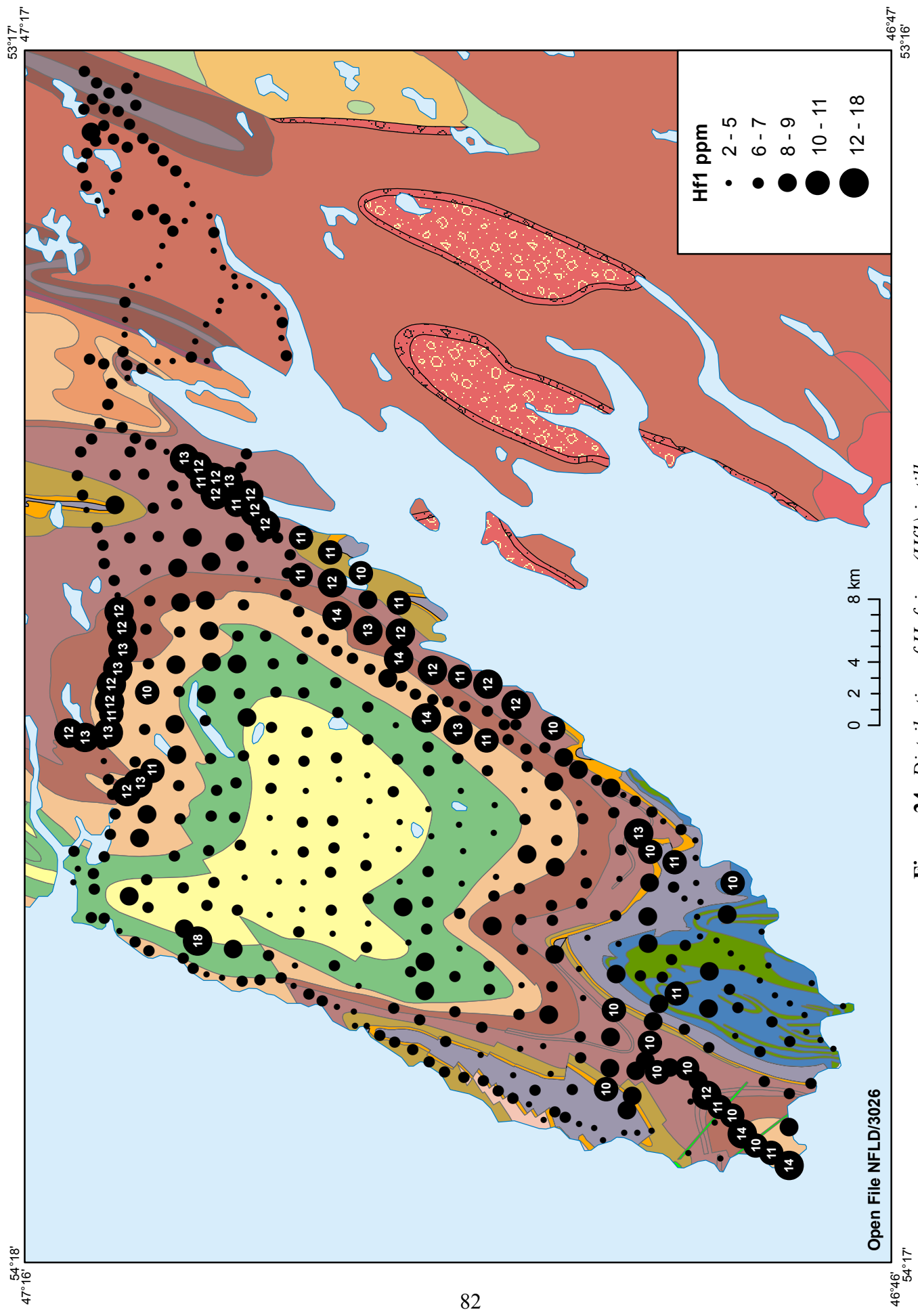


Figure 24. Distribution of Hafnium (Hf1) in till.

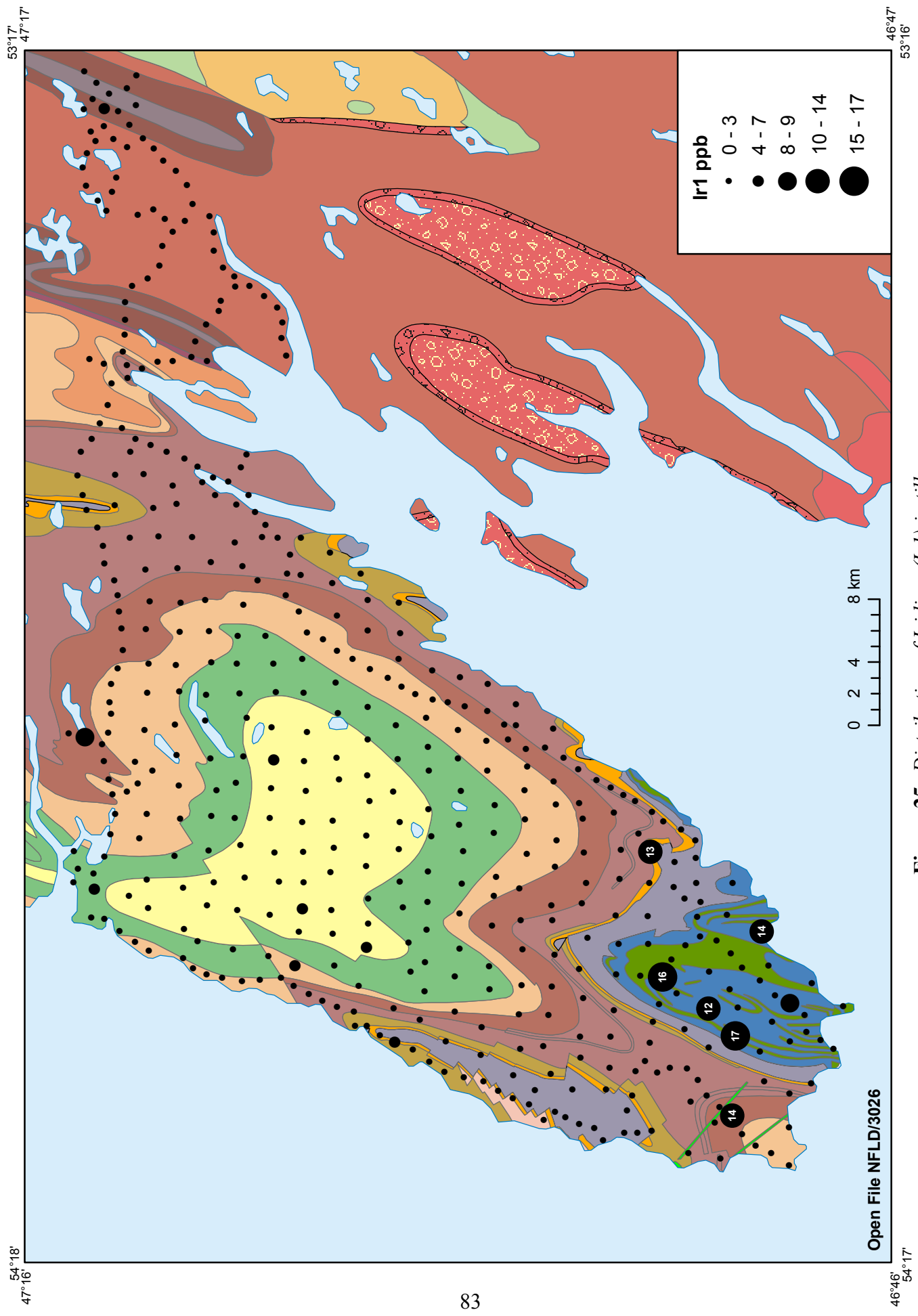


Figure 25. Distribution of Iridium (Ir-1) in till.

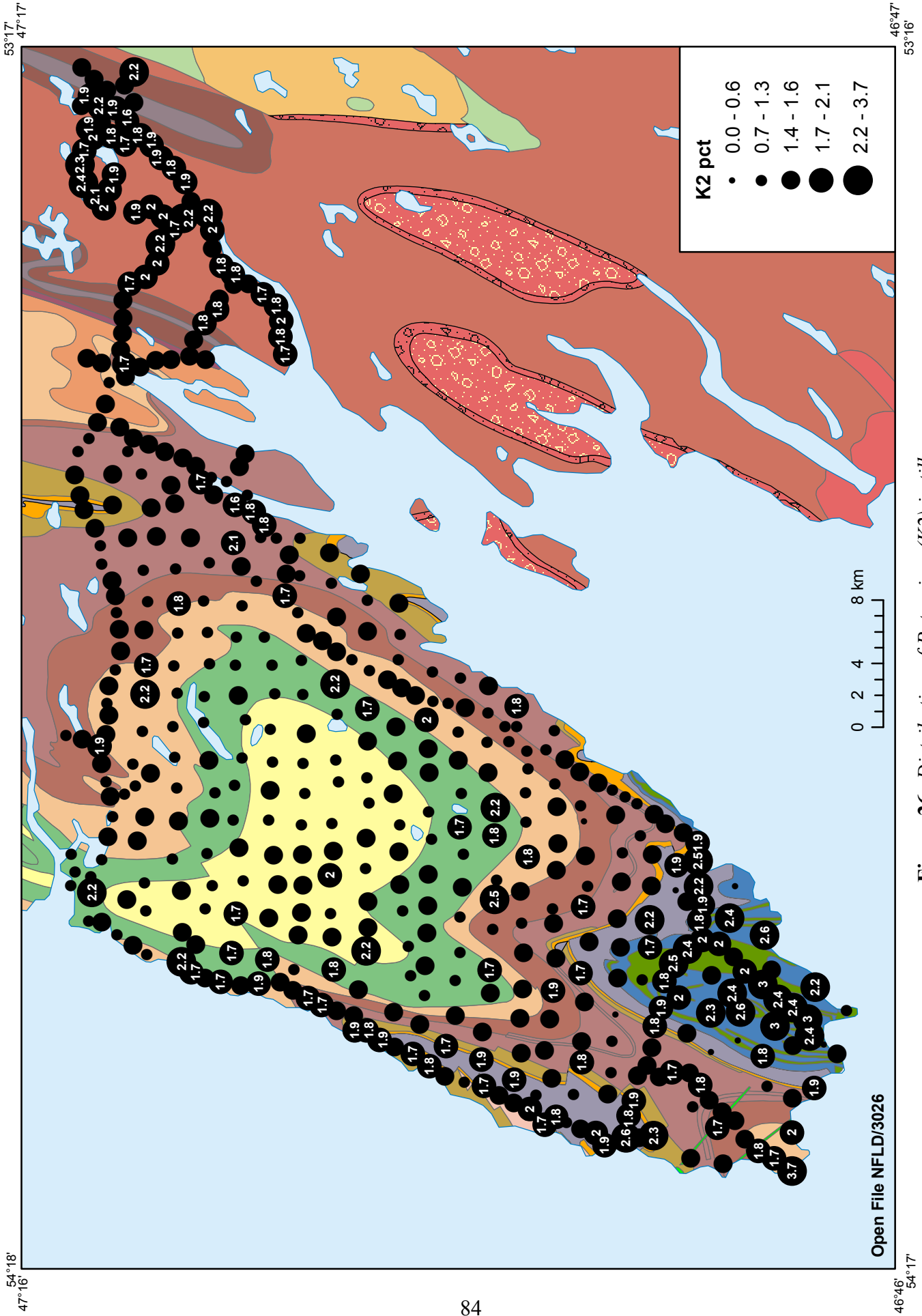


Figure 26. Distribution of Potassium (K2) in till.

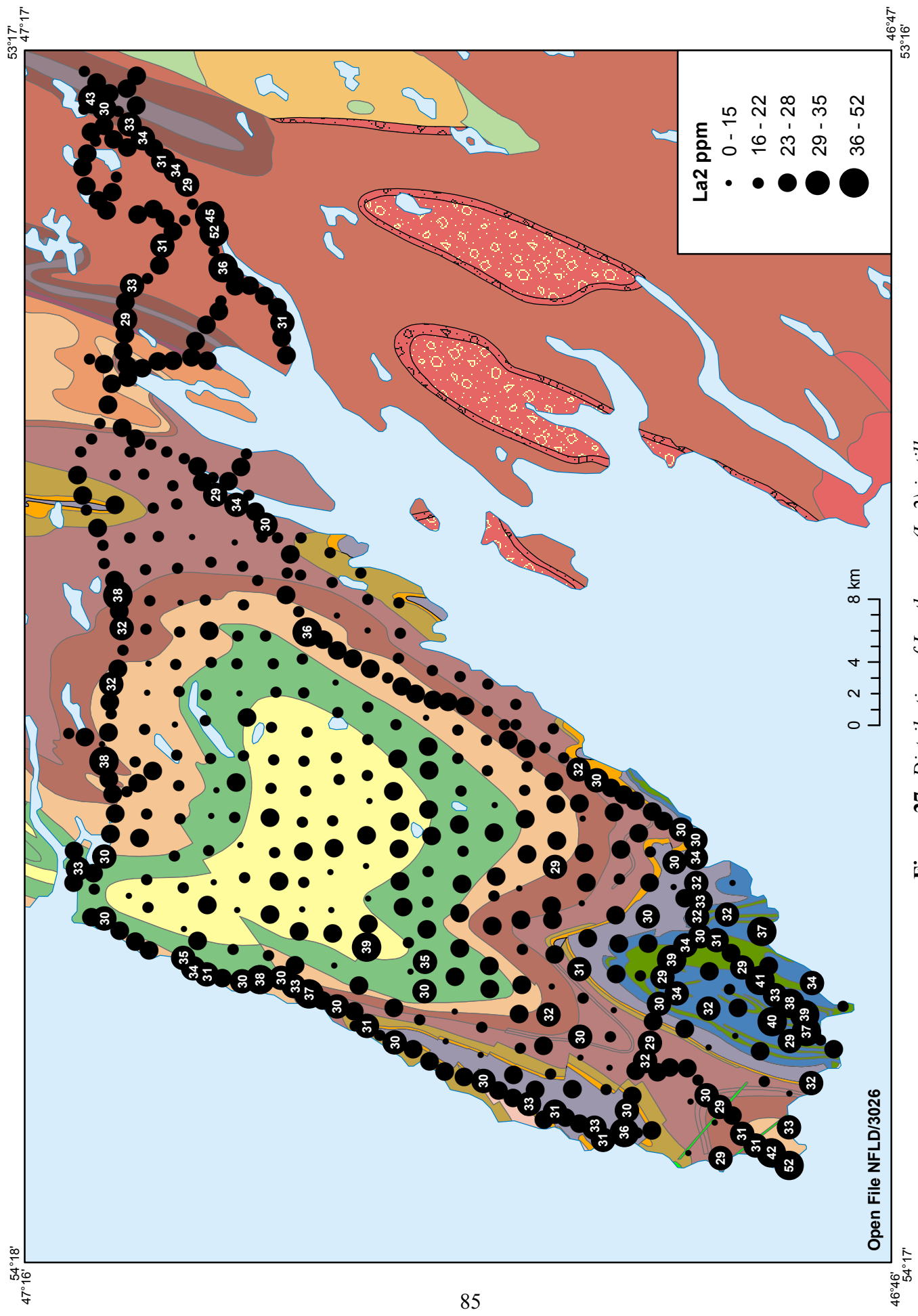


Figure 27. Distribution of Lanthanum (La2) in till.

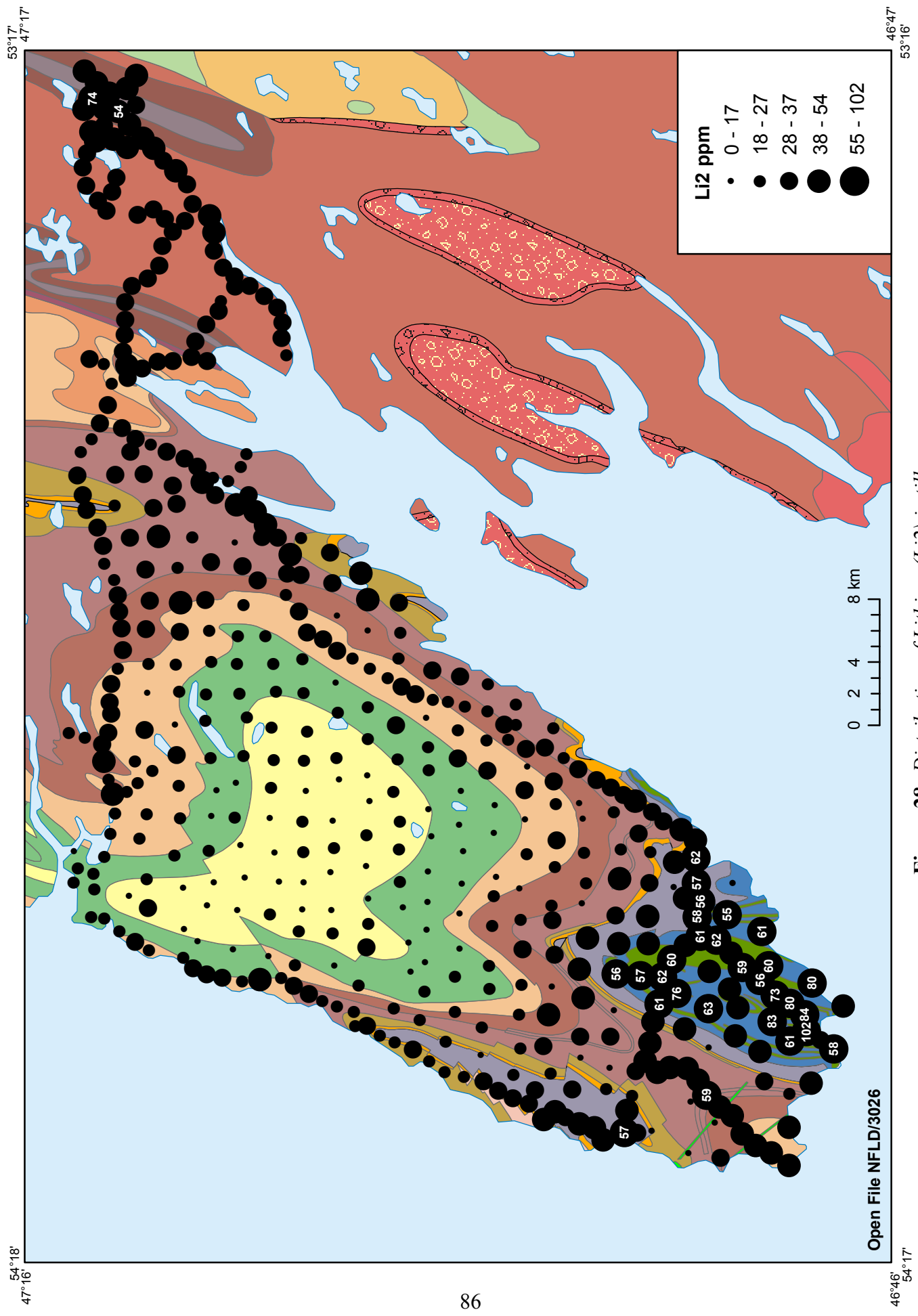


Figure 28. Distribution of Lithium (Li2) in till.

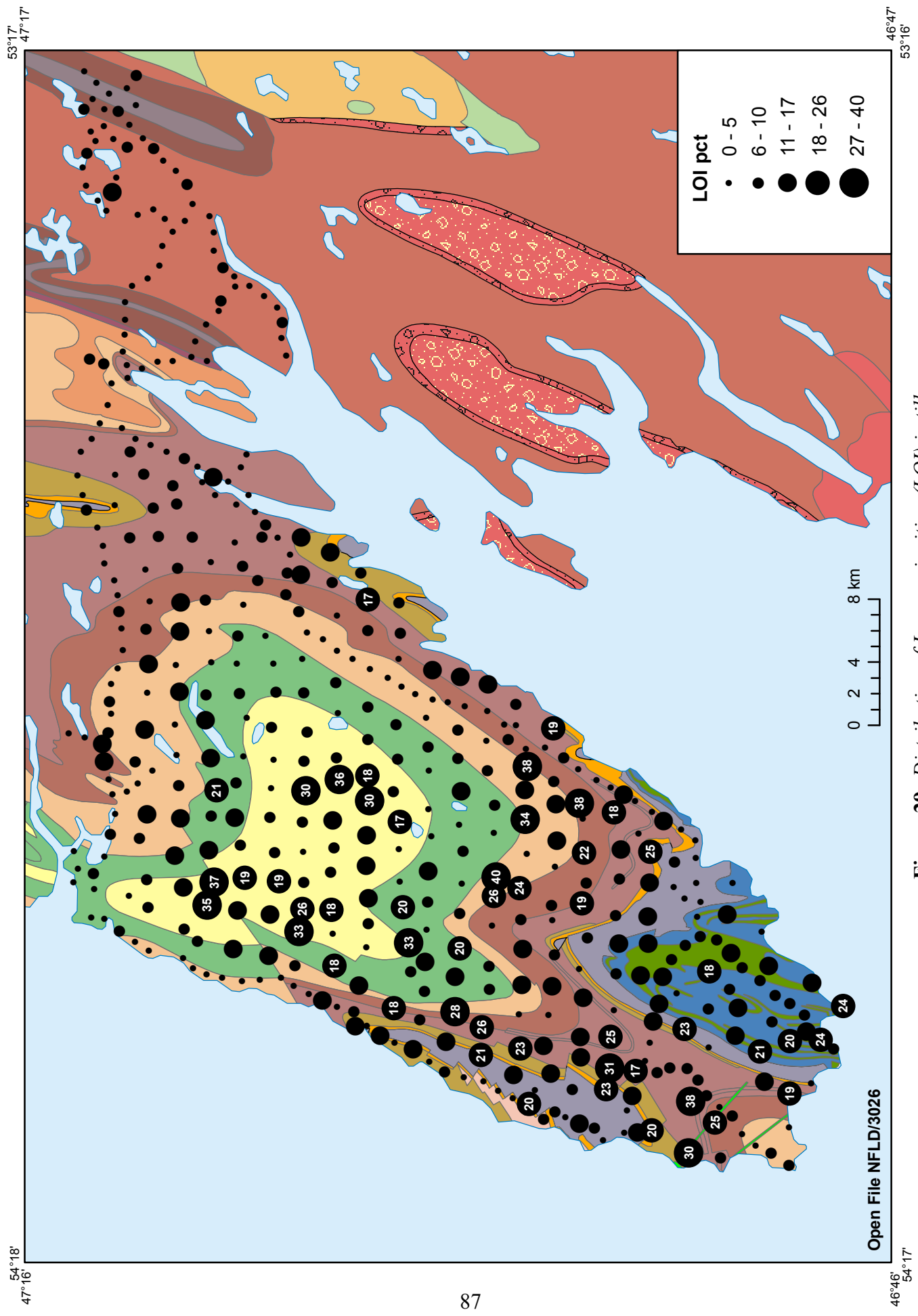


Figure 29. Distribution of Loss-on-ignition (LOI) in till.

53°17'
47°17'

54°18'
47°16'

46°47'
53°16'

46°46'
54°17'

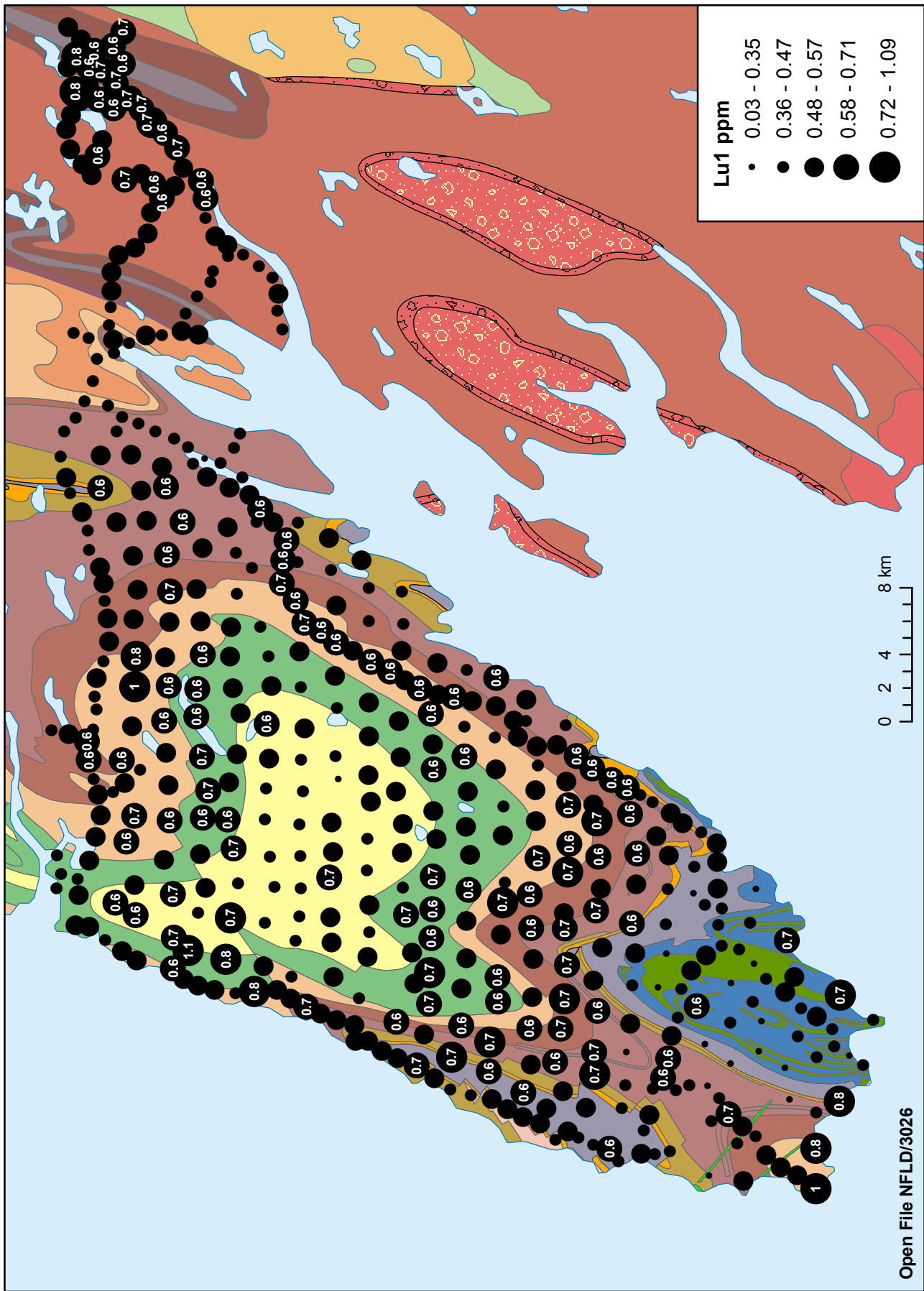


Figure 30. Distribution of Lutetium (Lu1) in till.

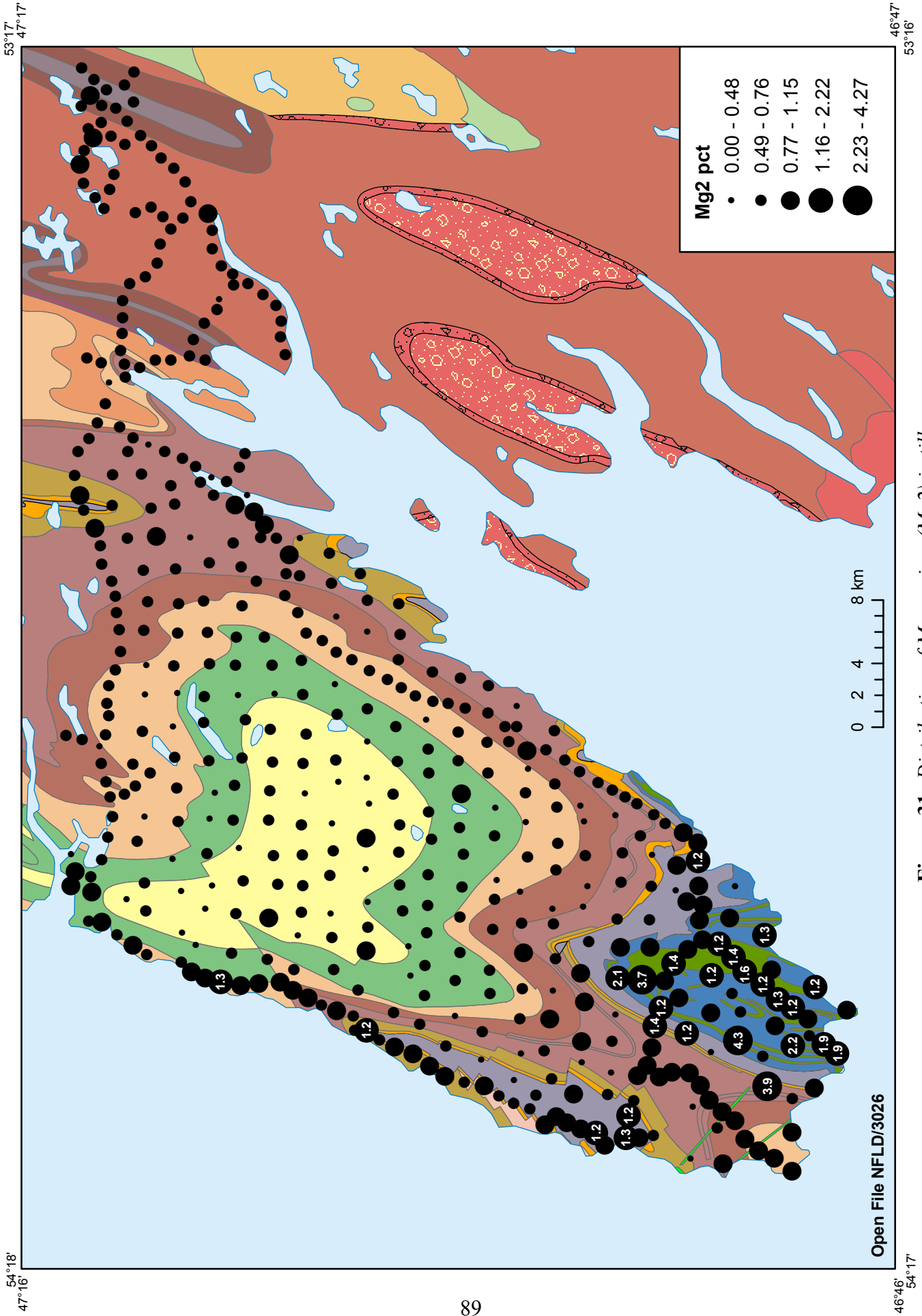


Figure 31. Distribution of Magnesium (Mg2) in till.

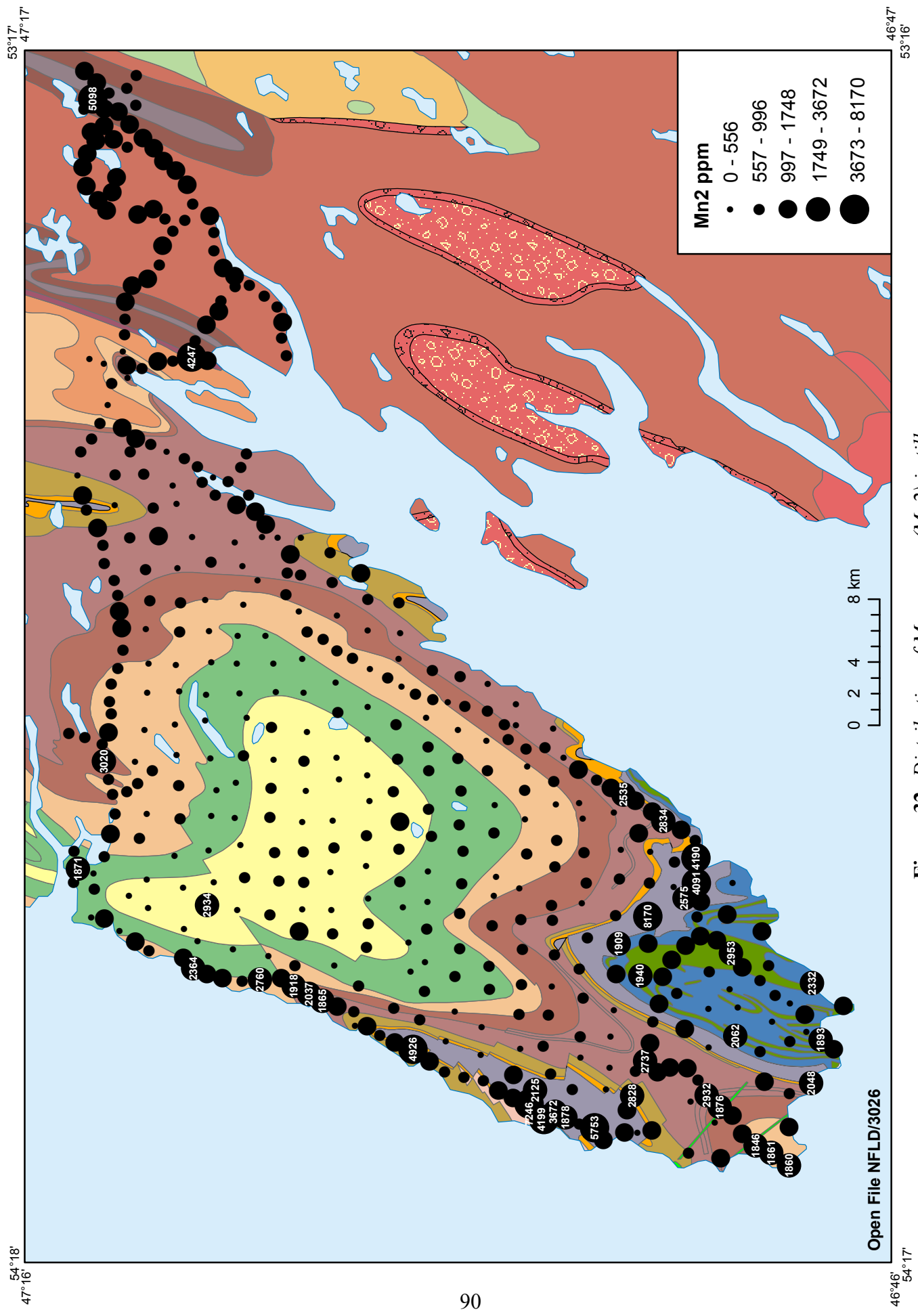


Figure 32. Distribution of Manganese (Mn2) in till.

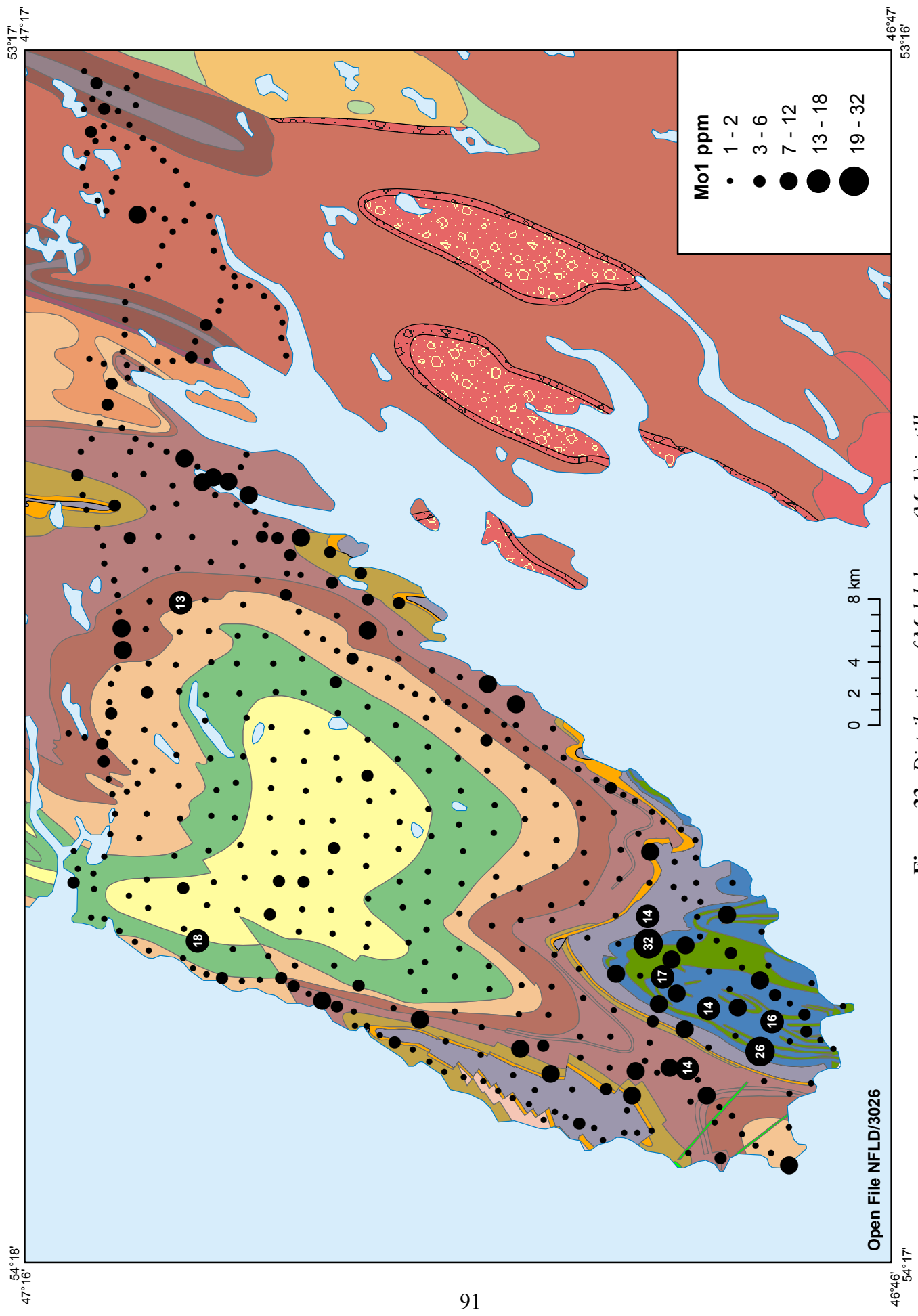


Figure 33. Distribution of Molybdenum (MoI) in till.

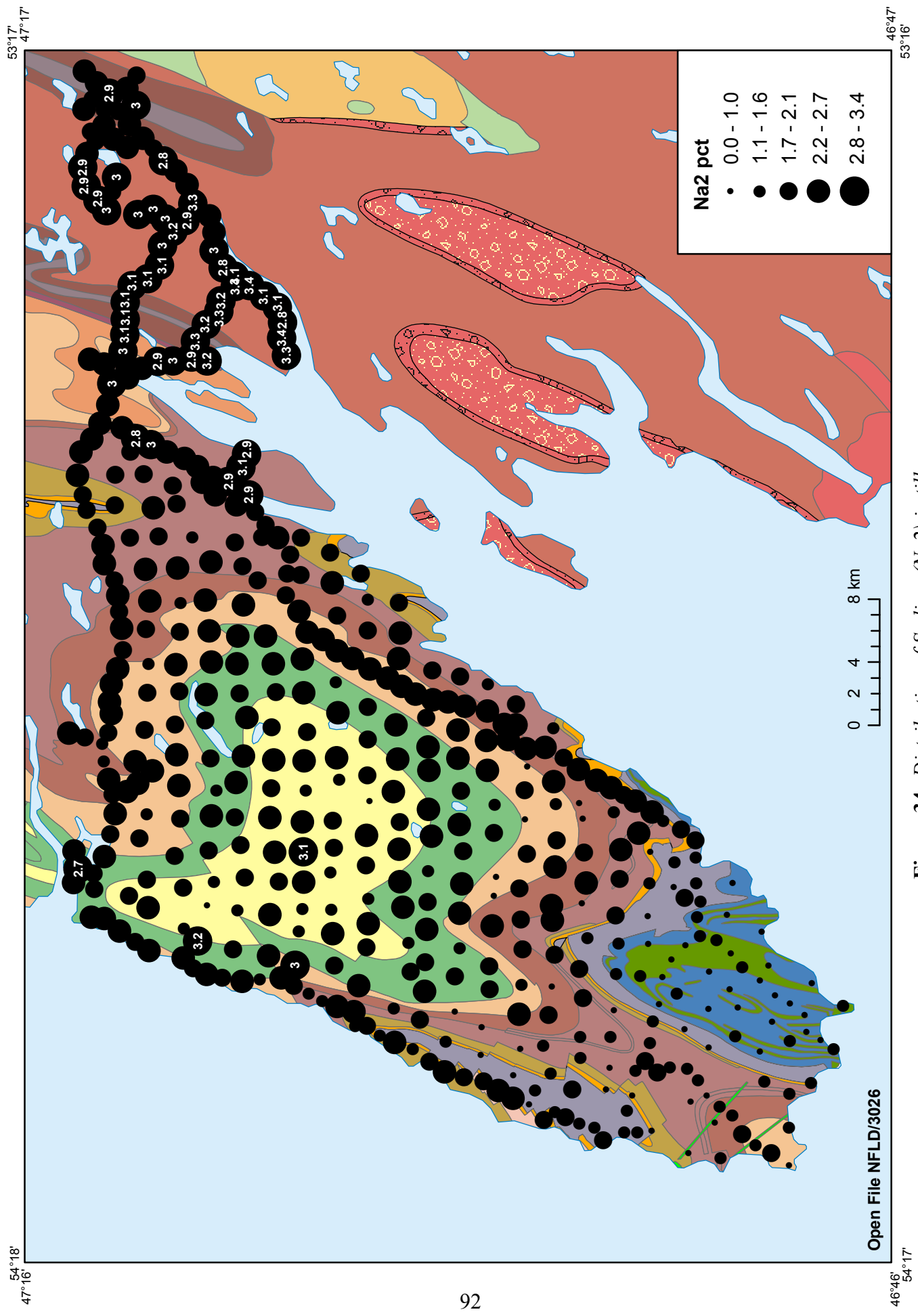


Figure 34. Distribution of Sodium (Na_2) in till.

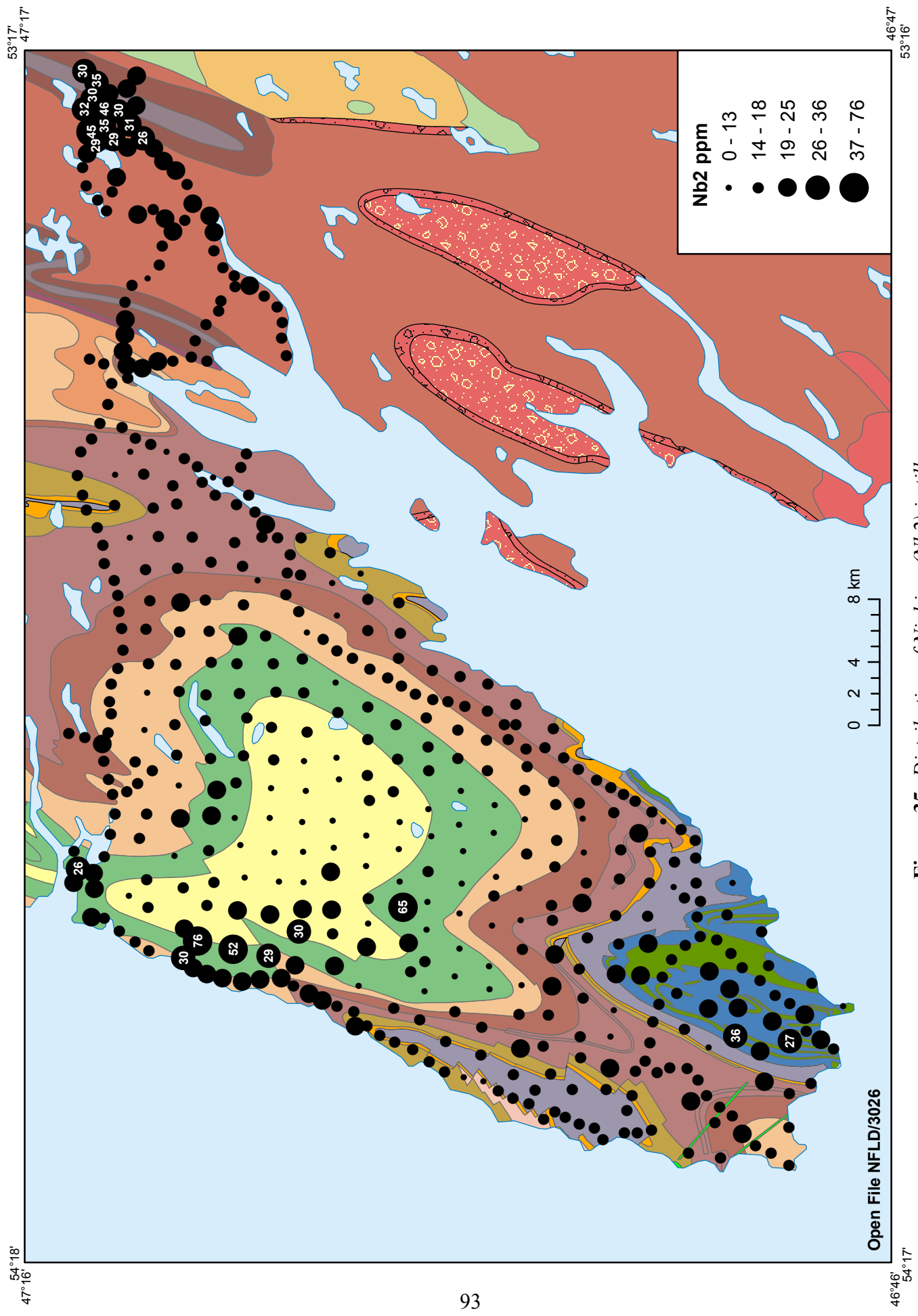


Figure 35. Distribution of Niobium (Nb2) in till.

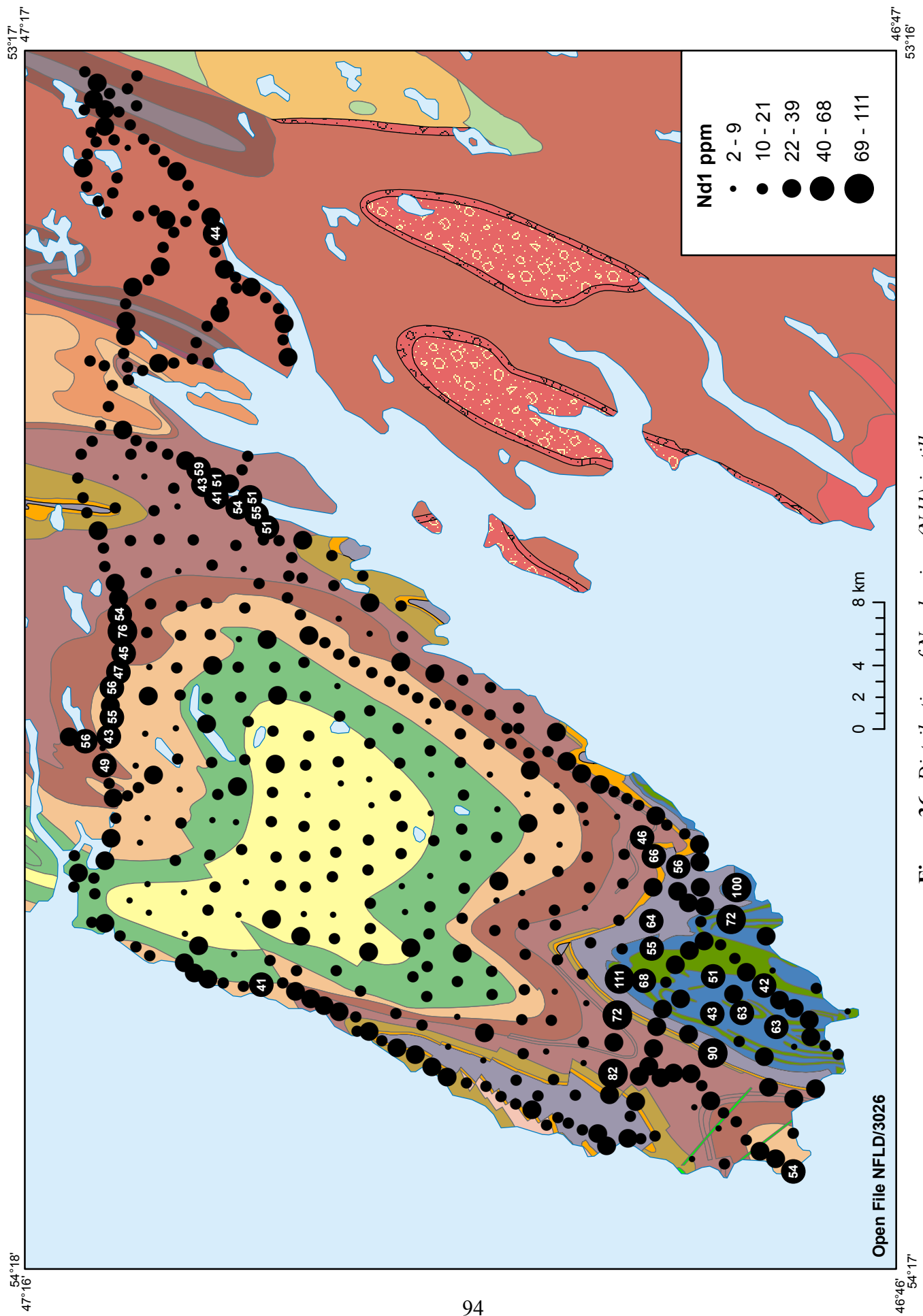


Figure 36. Distribution of Neodymium (Nd1) in till.

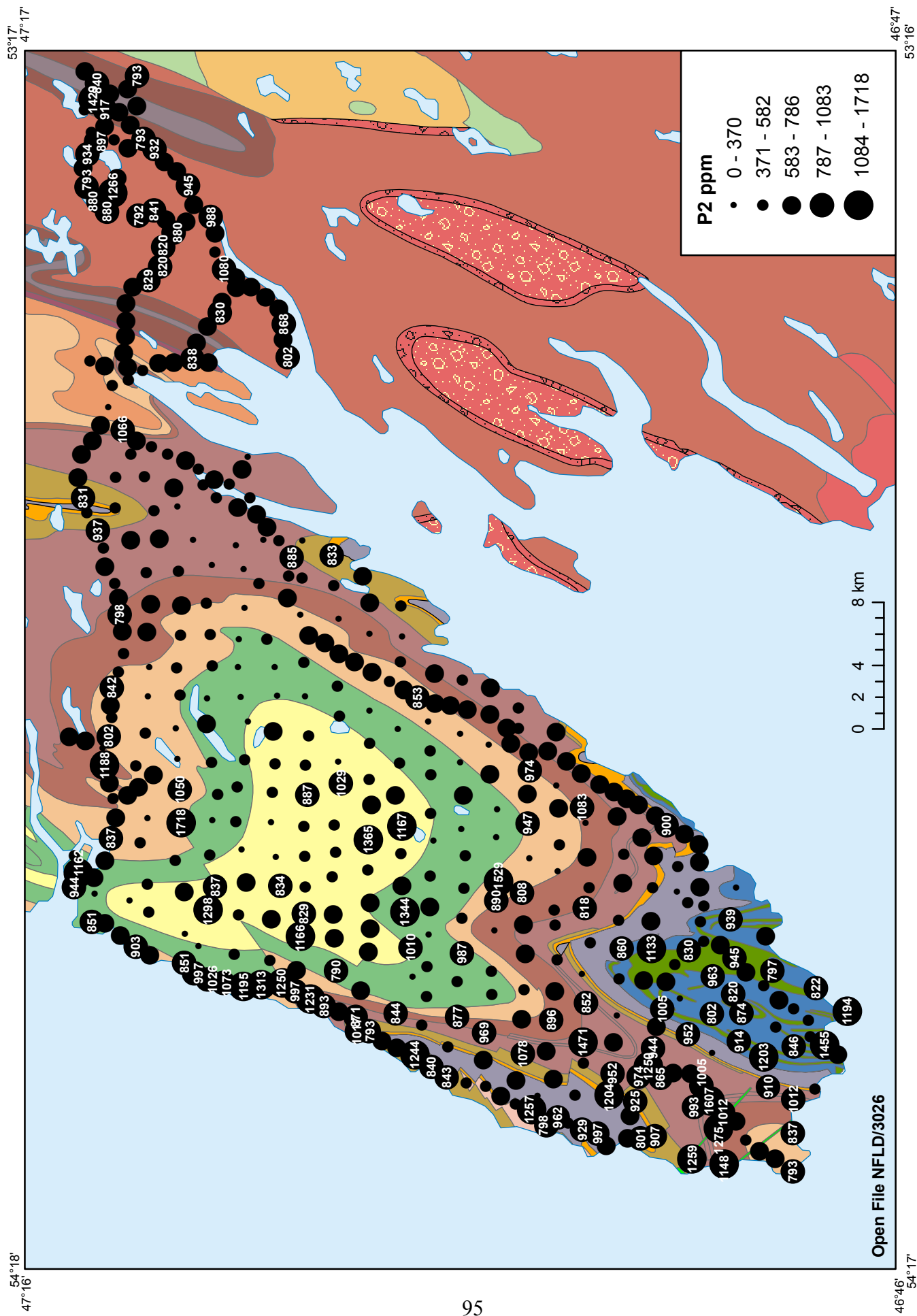
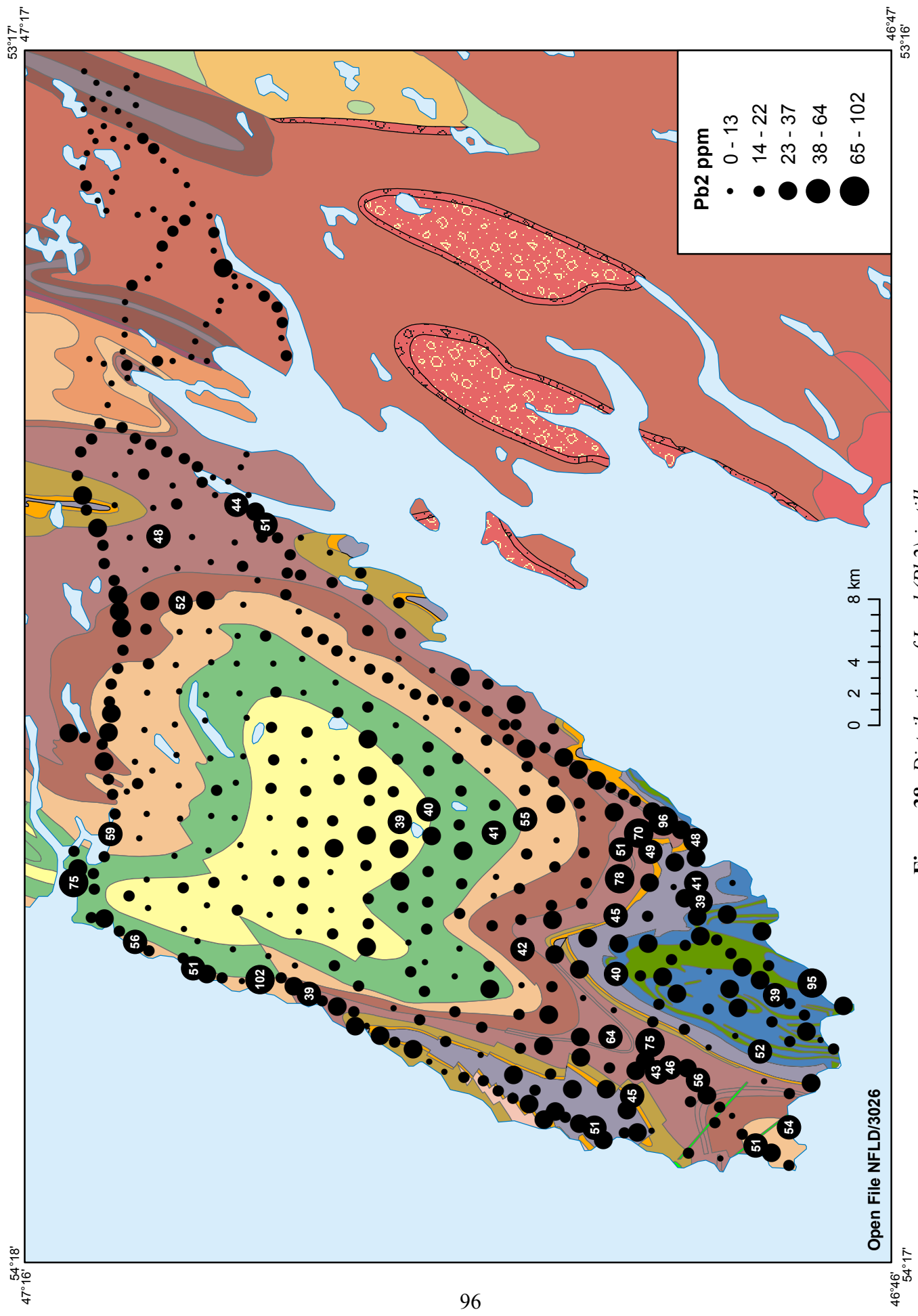


Figure 37. Distribution of Phosphorous (P2) in till.



Open File NFLD/3026

Figure 38. Distribution of Lead (Pb2) in till.

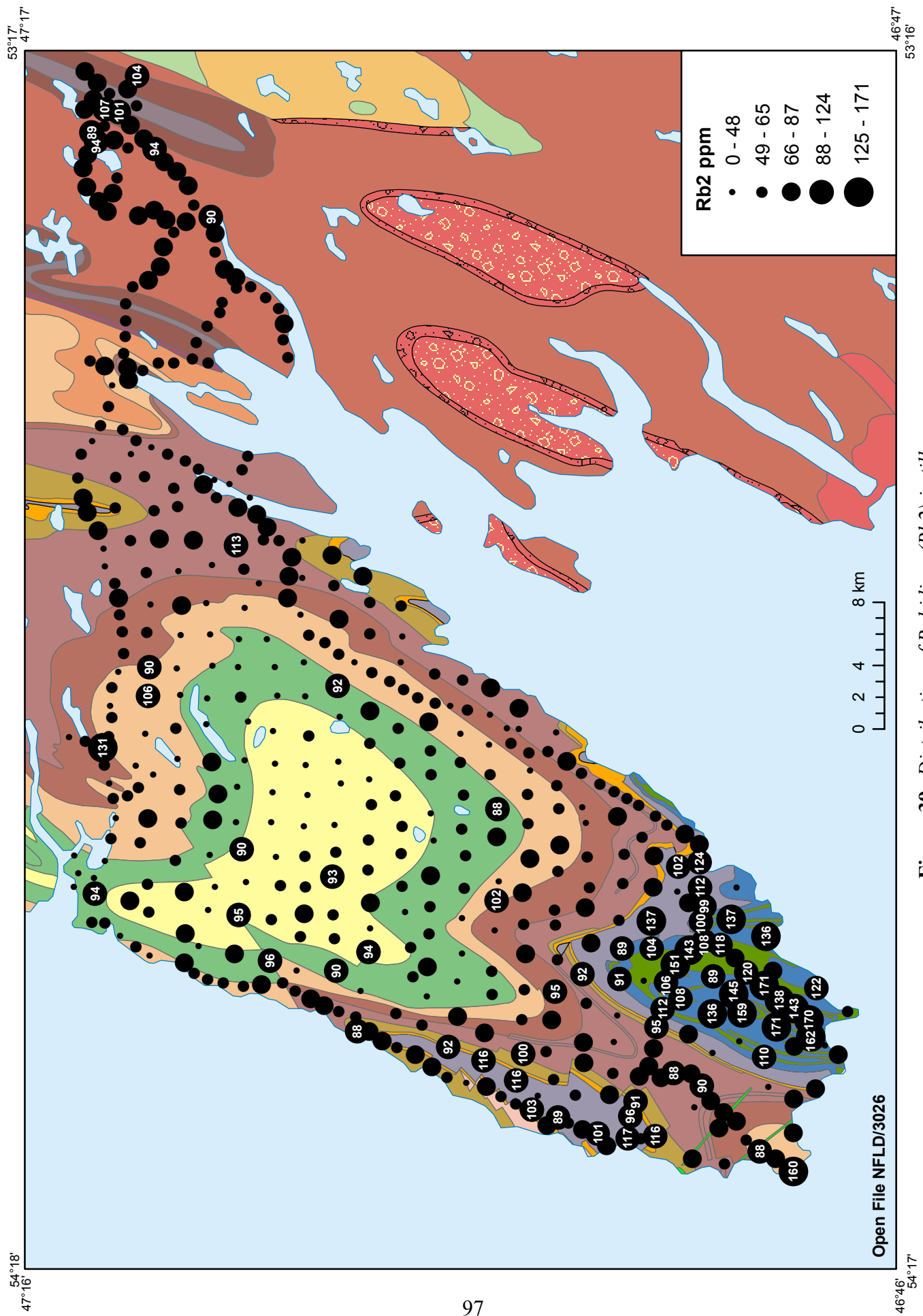
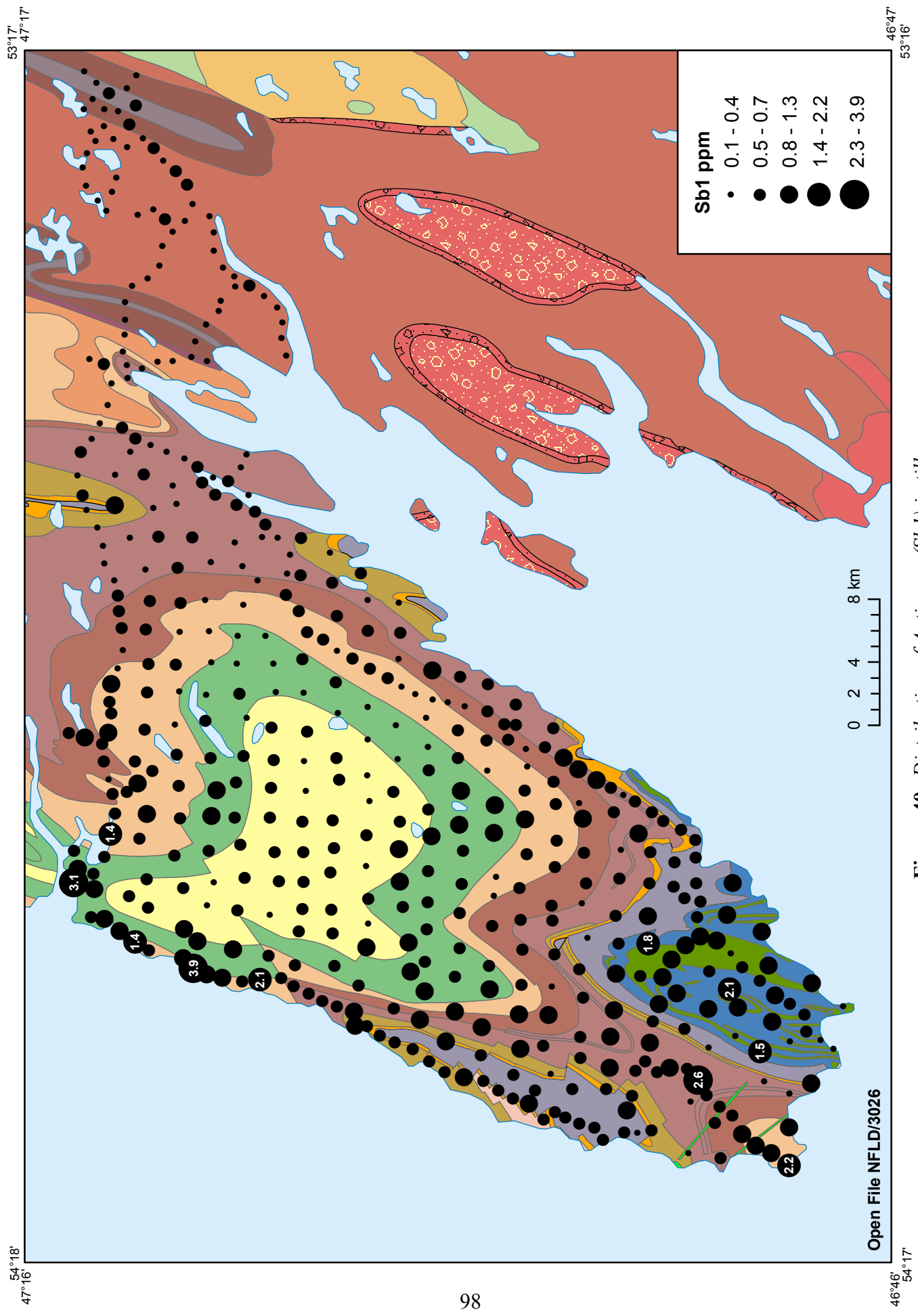


Figure 39. Distribution of Rubidium (Rb2) in till.



Open File NFLD/3026

Figure 40. Distribution of Antimony (Sb1) in till.

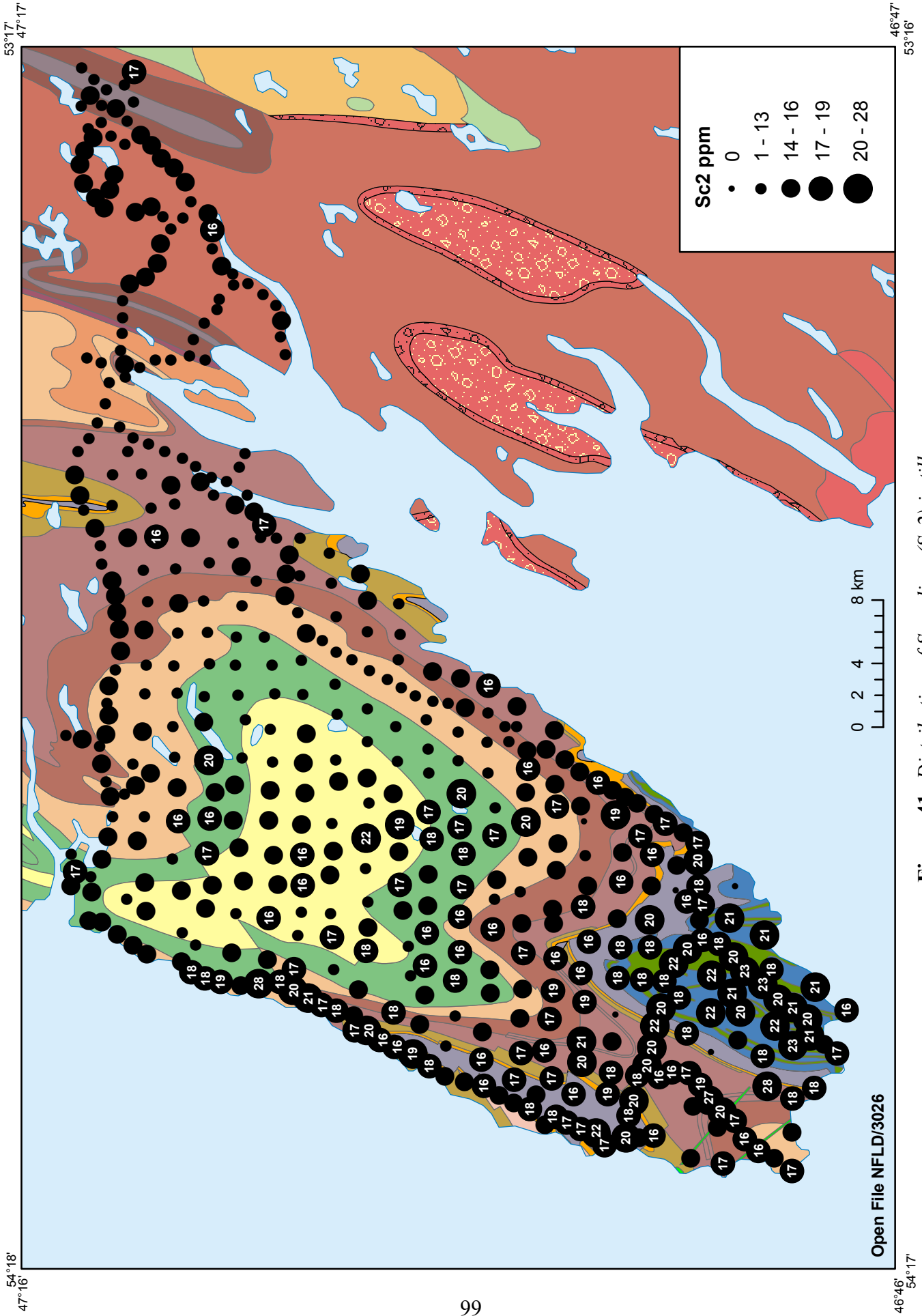


Figure 41. Distribution of Scandium (Sc2) in till.

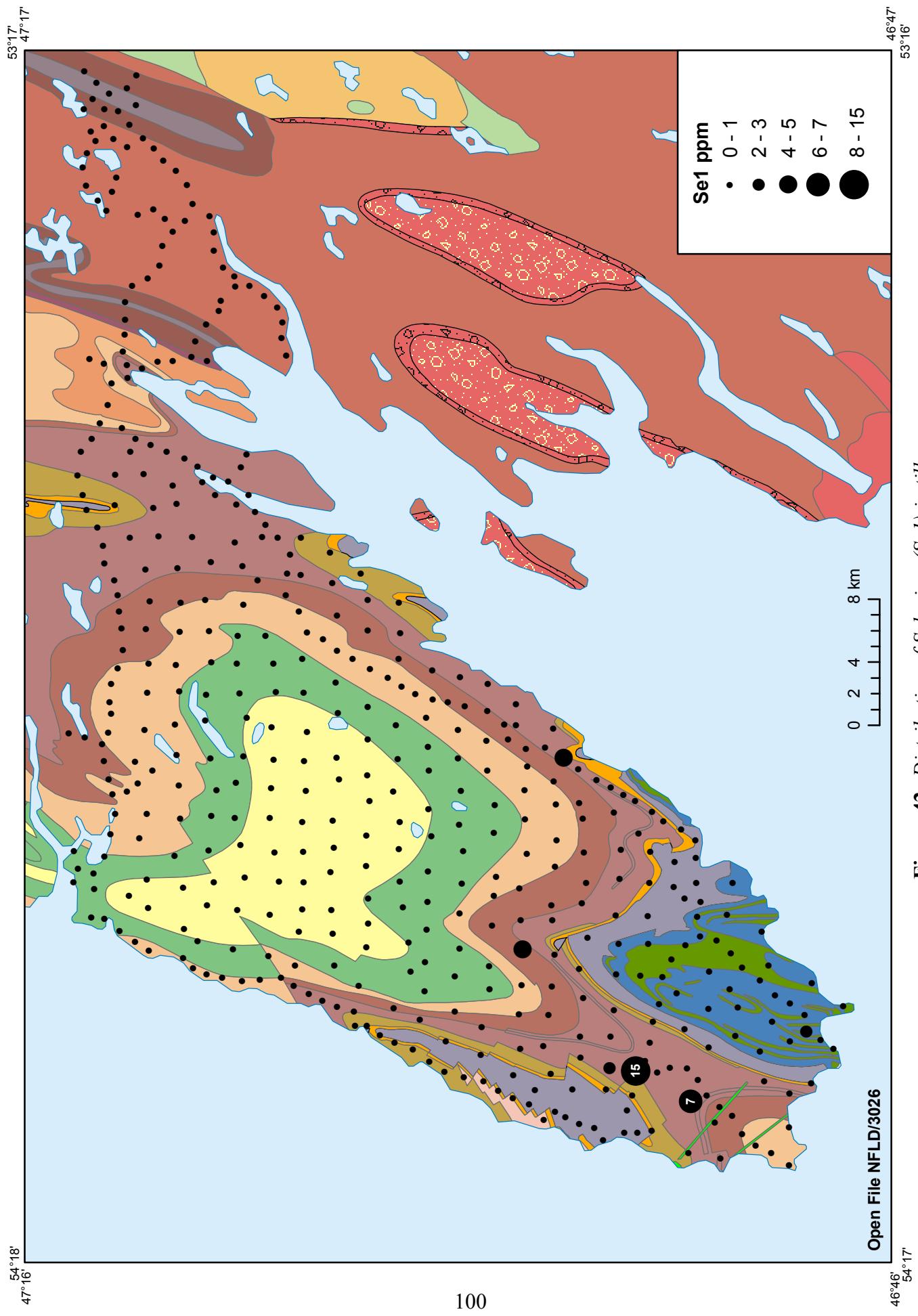


Figure 42. Distribution of Selenium (Se1) in till.

54°18'
47°16'

53°17'
47°17'

46°16'
54°17'

46°47'
53°16'

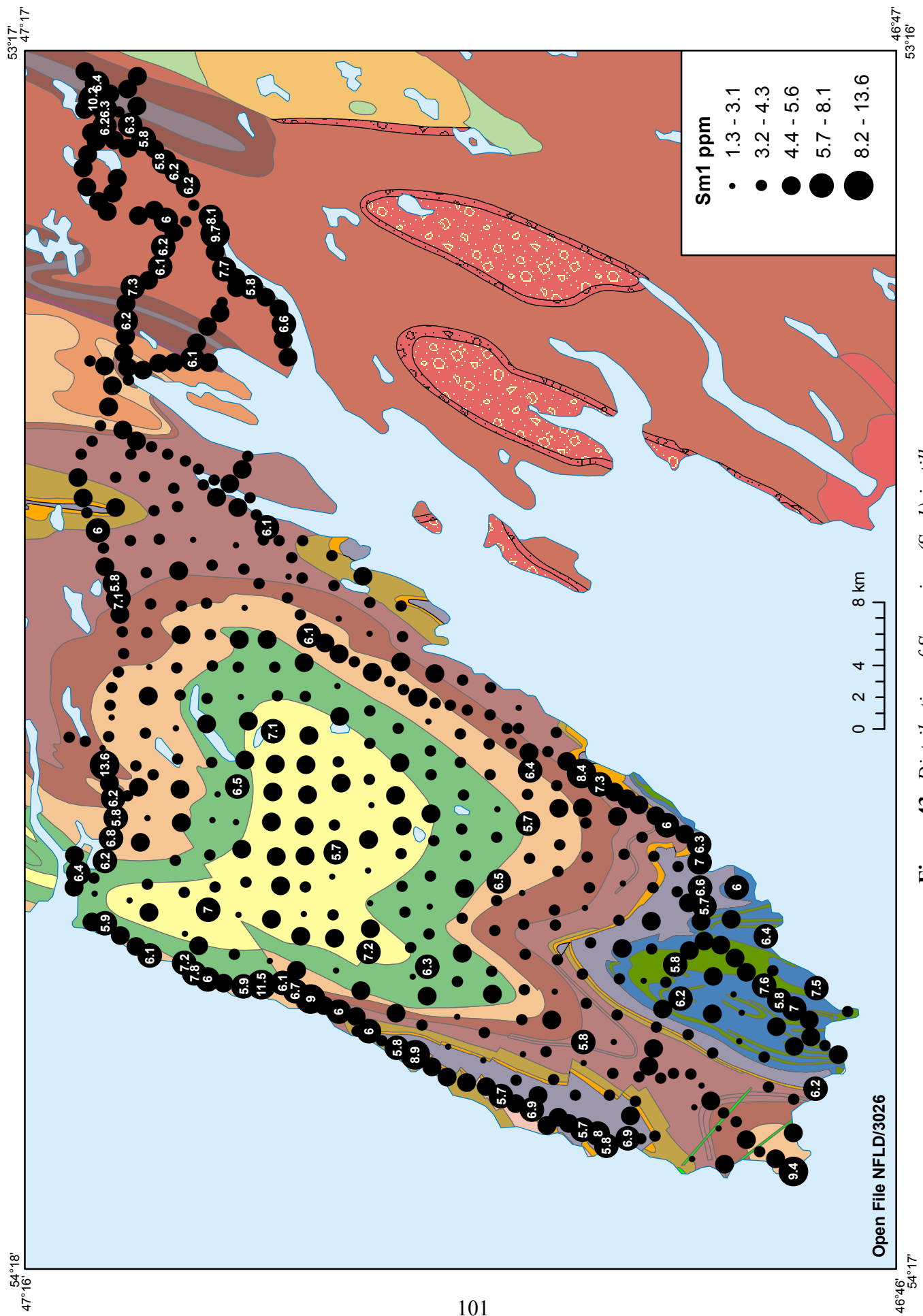


Figure 43. Distribution of Samarium (Sm1) in till.

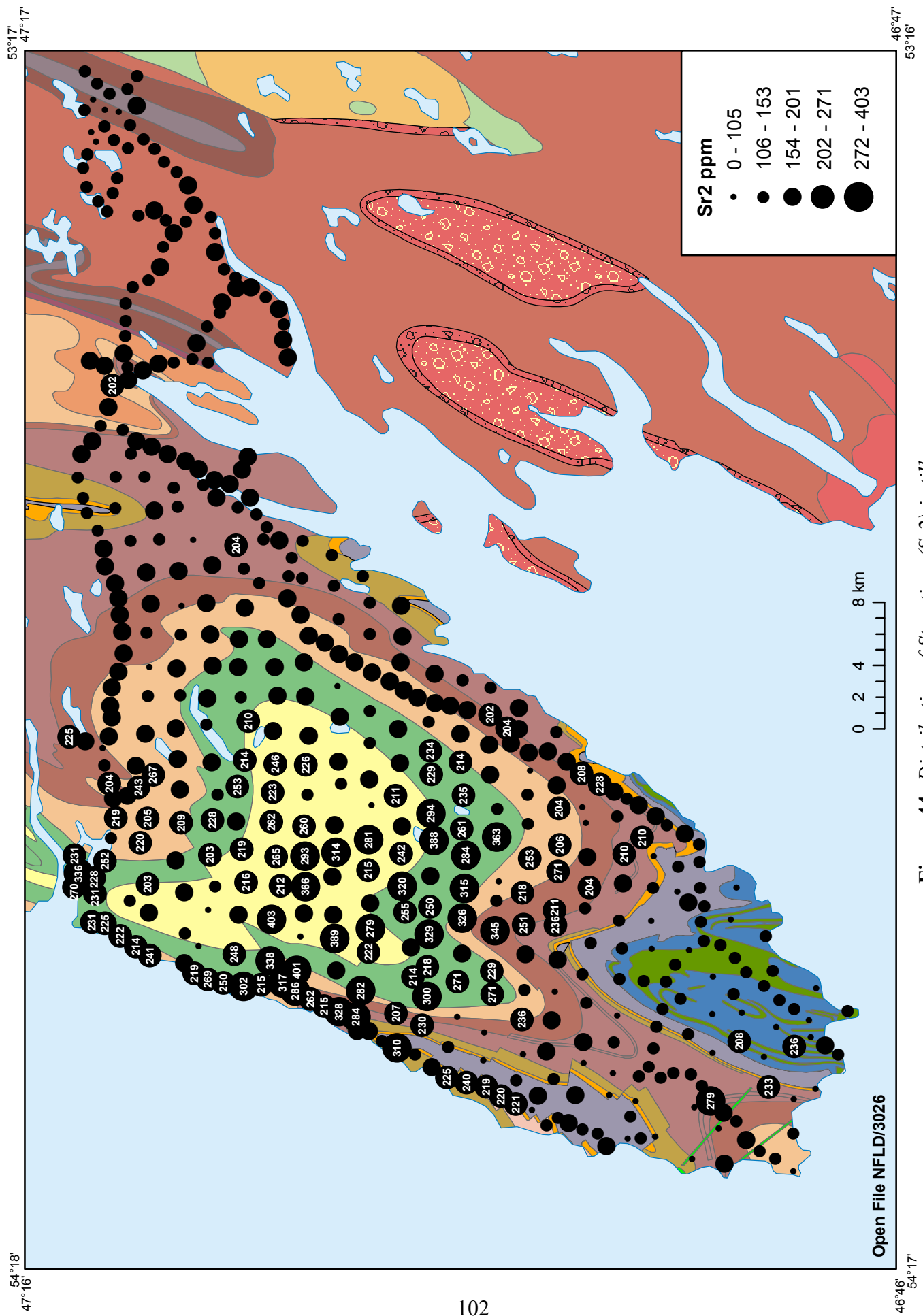


Figure 44. Distribution of Strontium (Sr2) in till.

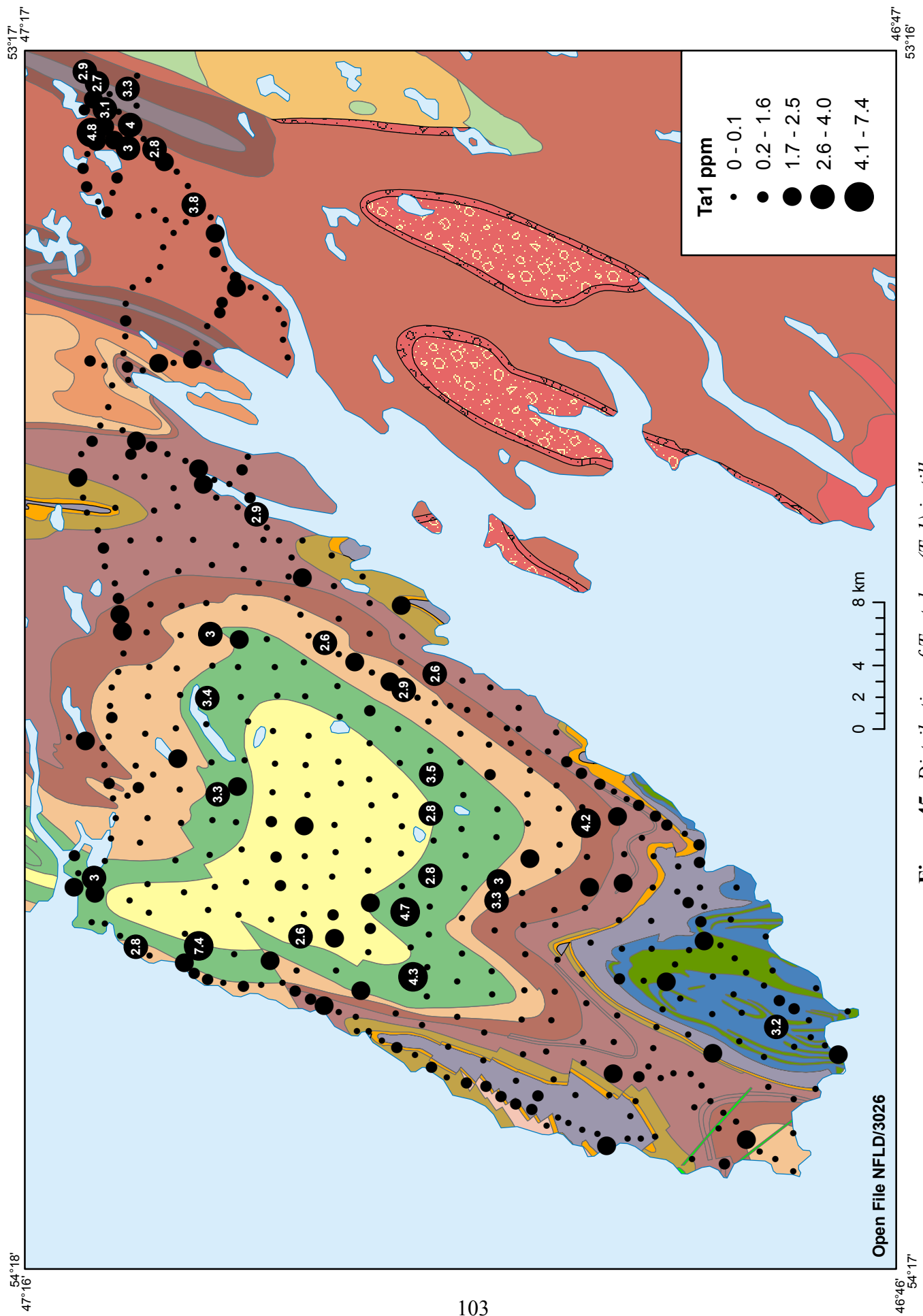


Figure 45. Distribution of Tantalum (Ta1) in till.

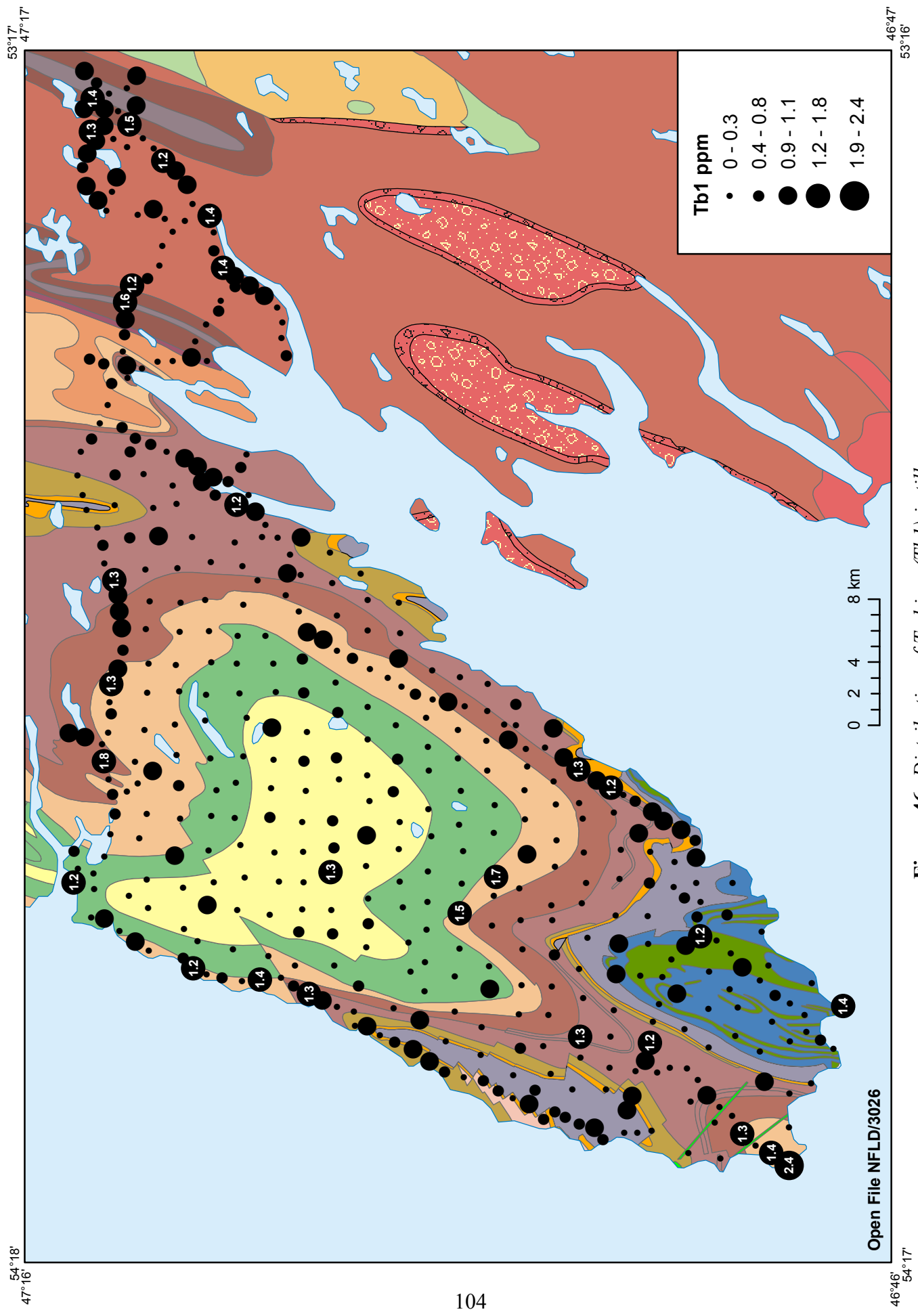


Figure 46. Distribution of Terbium (Tb1) in till.

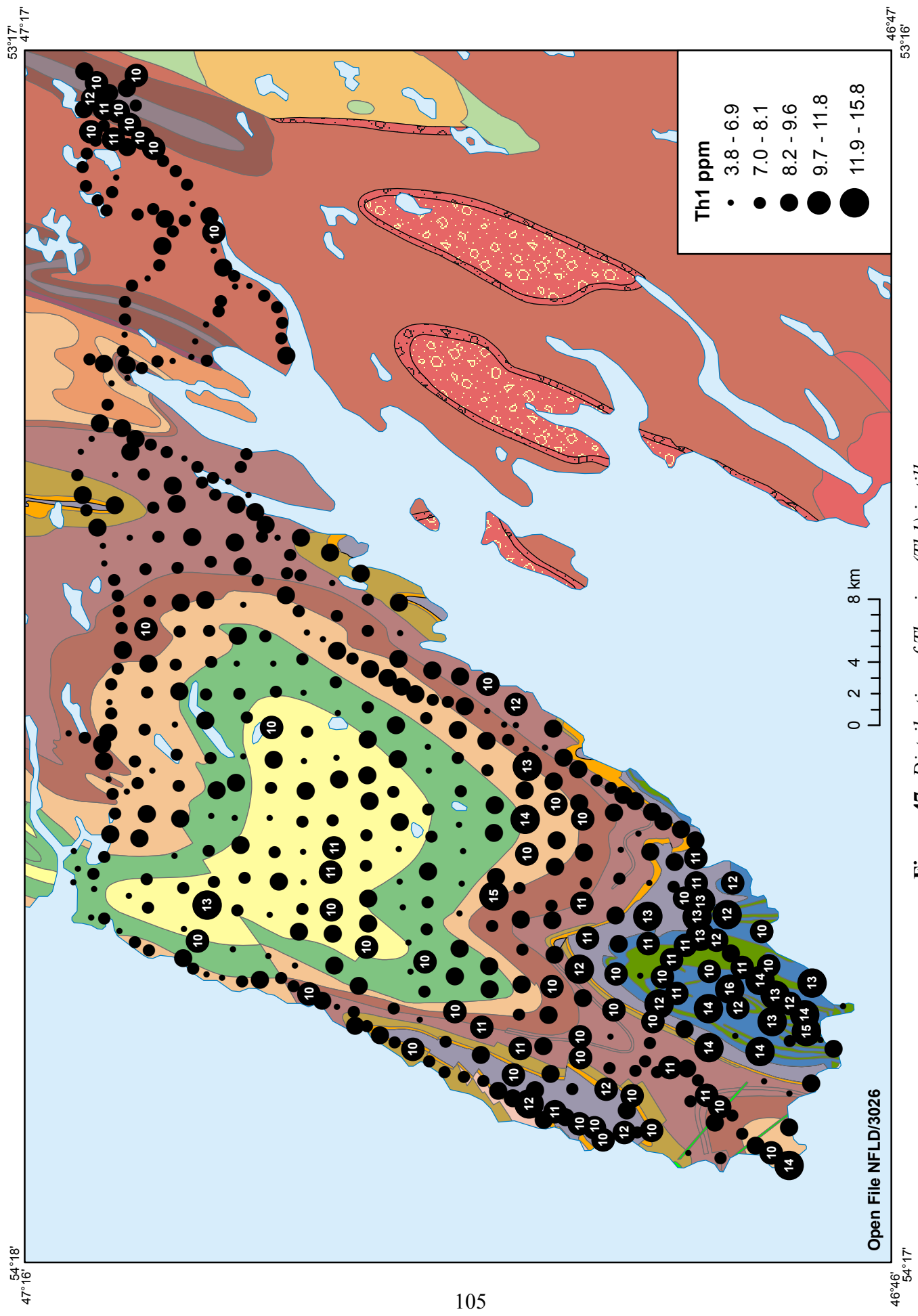


Figure 47. Distribution of Thorium (Th1) in till.

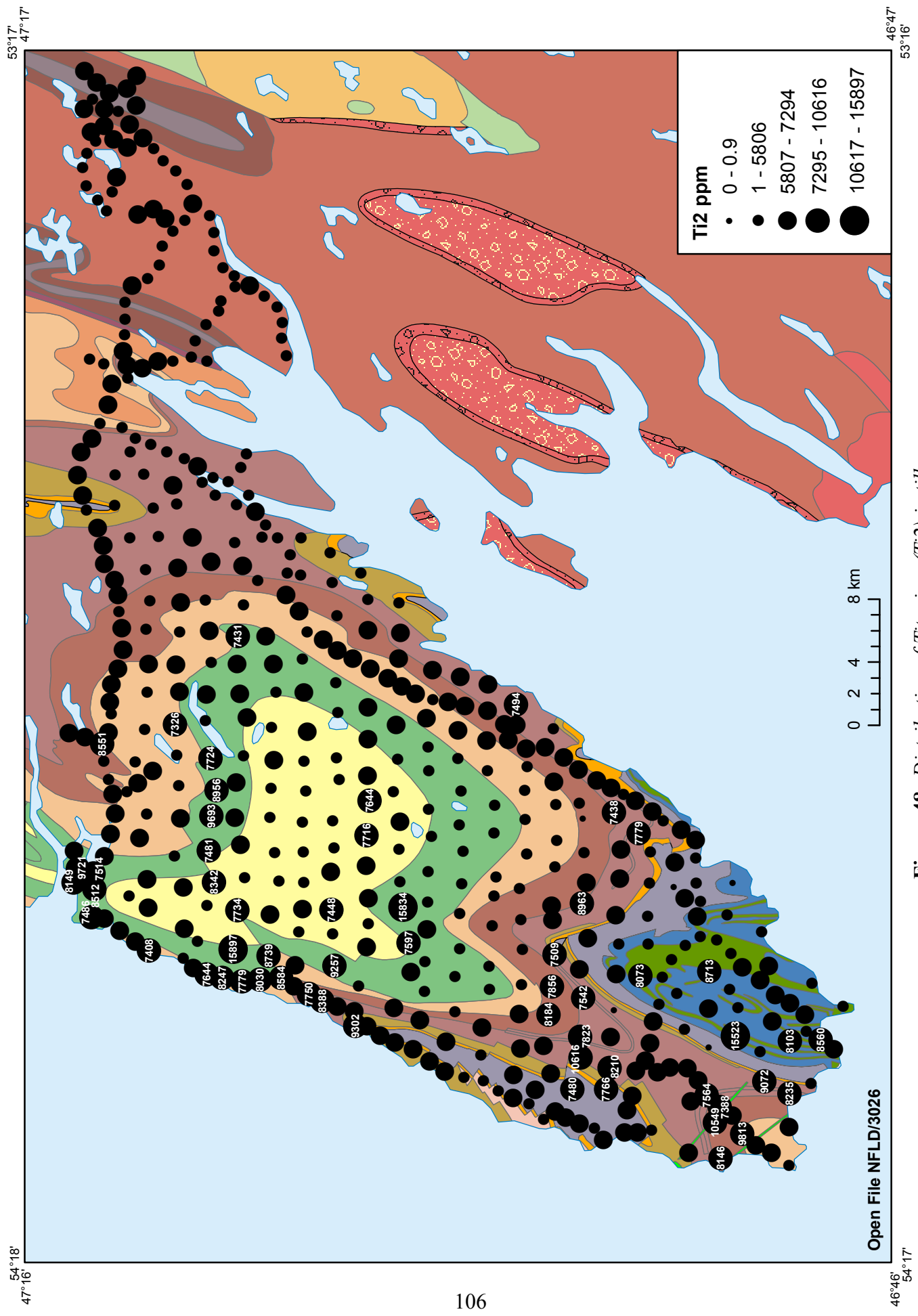


Figure 48. Distribution of Titanium (Ti2) in till.

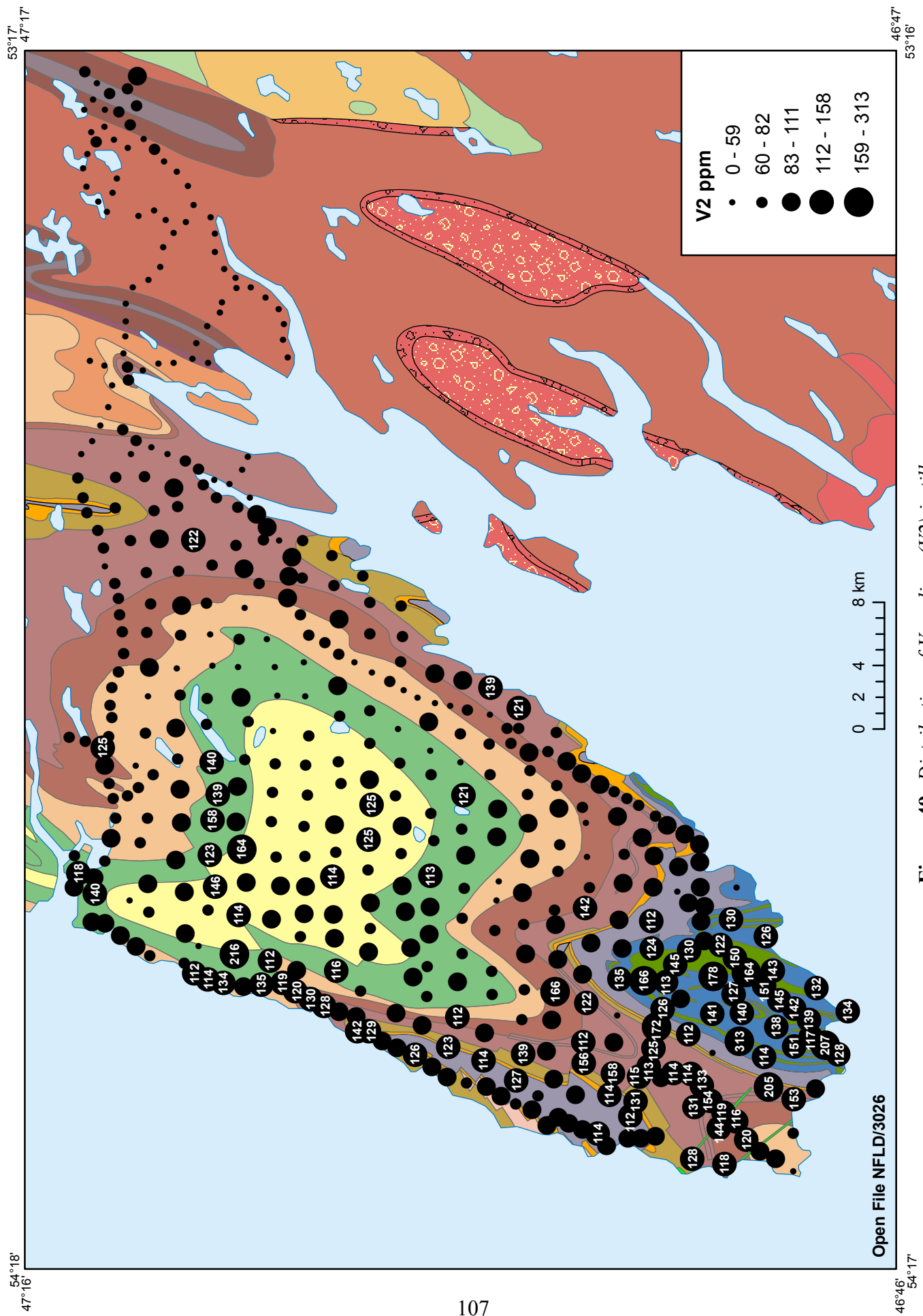


Figure 49. Distribution of Vanadium (V2) in till.

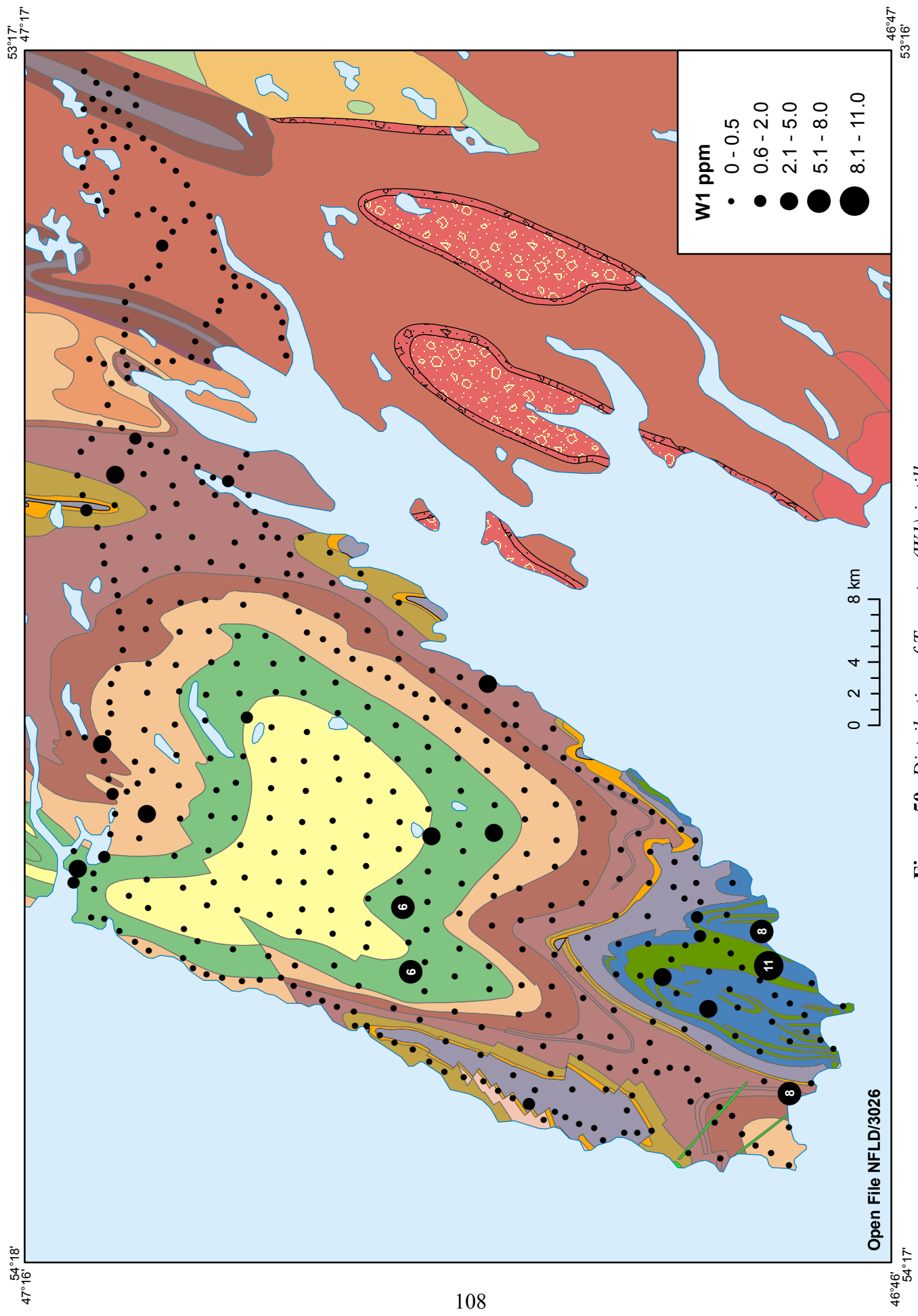


Figure 50. *Distribution of Tungsten (W1) in till.*

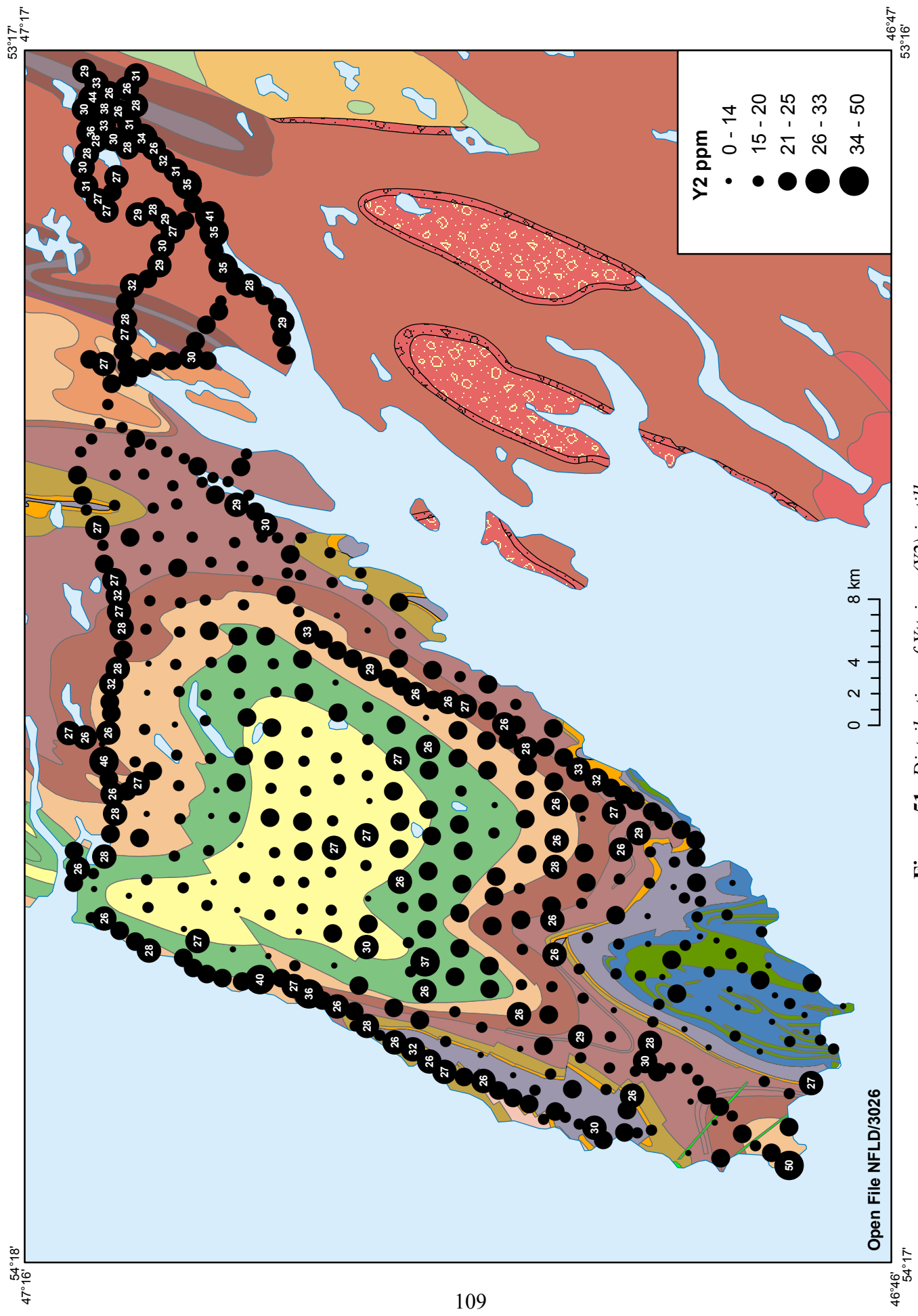


Figure 51. Distribution of Yttrium (Y2) in till.

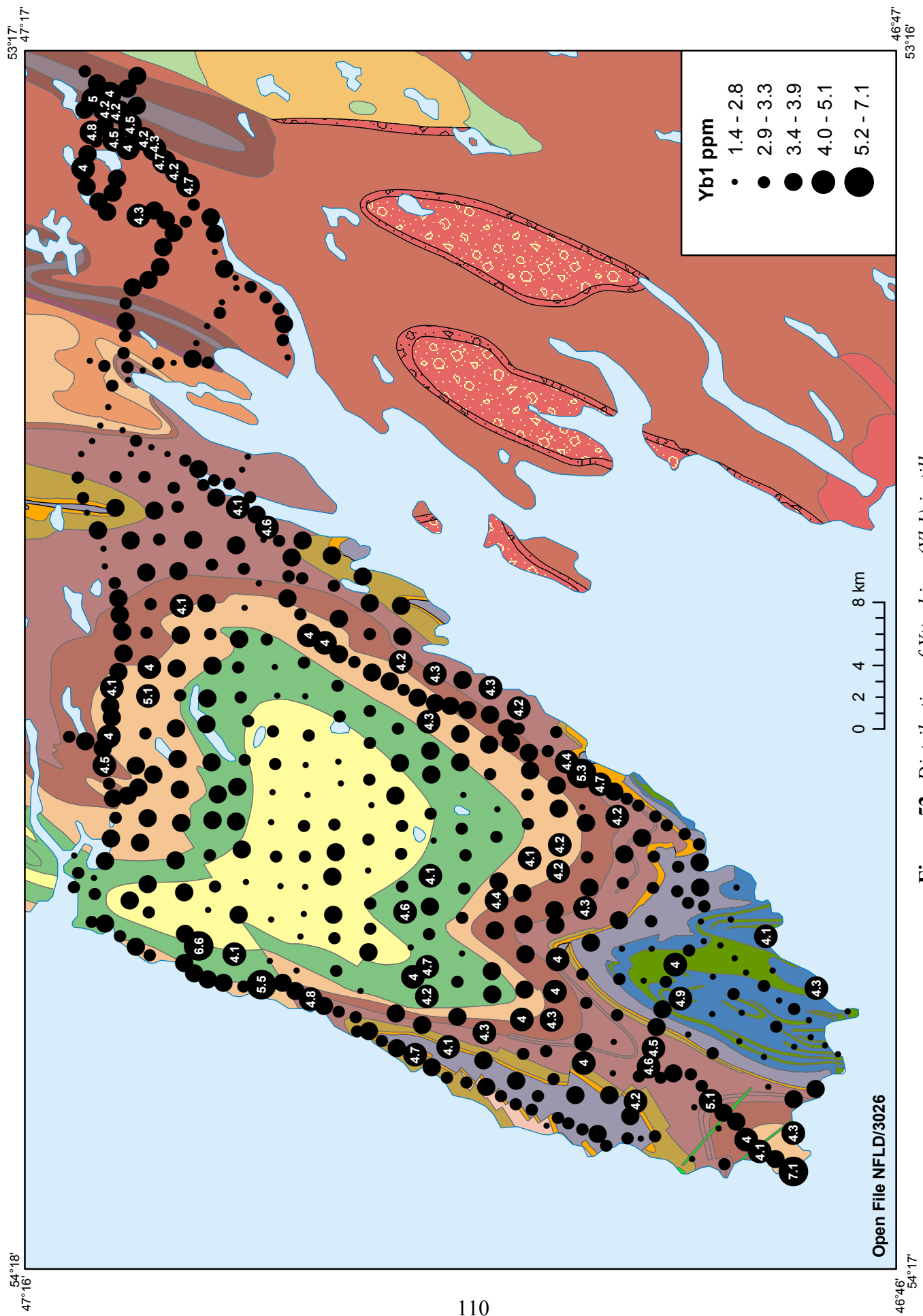


Figure 52. Distribution of Ytterbium (Yb1) in till.

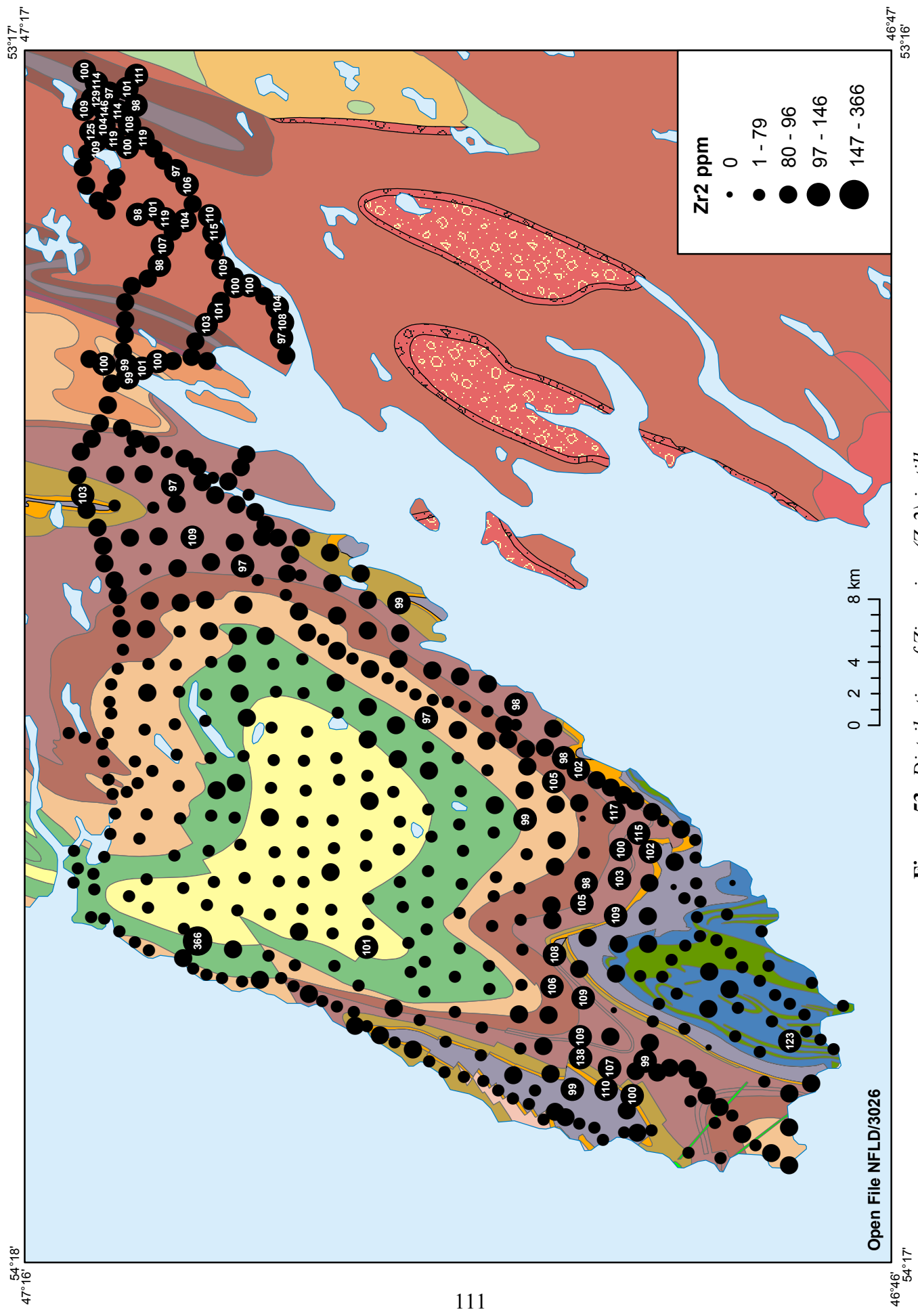
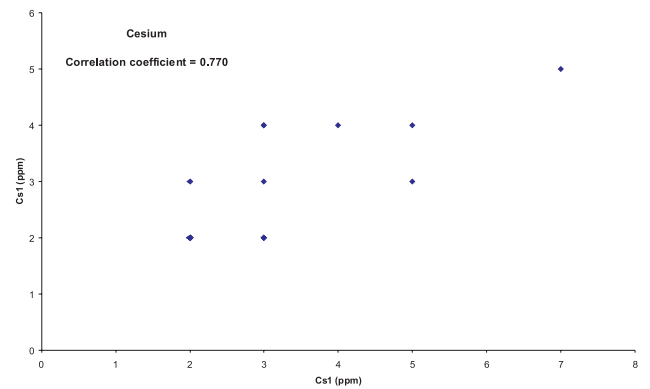
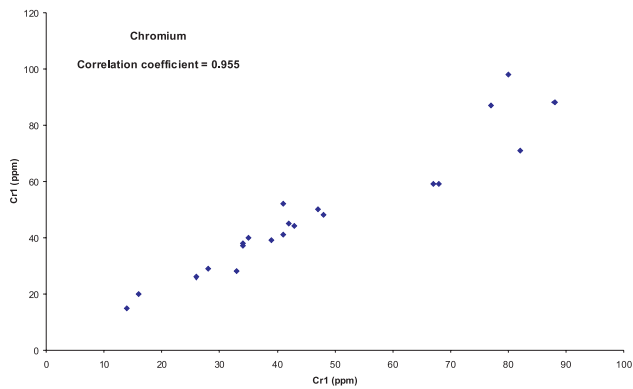
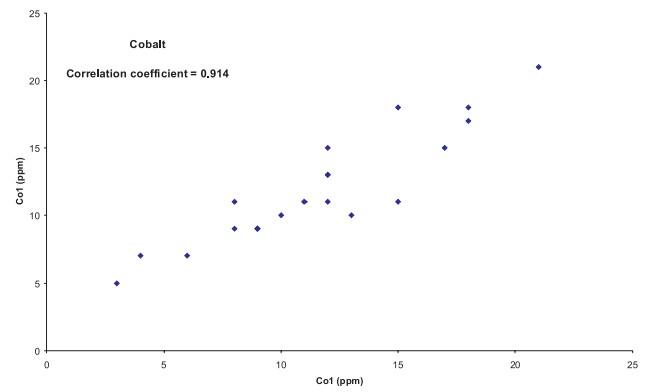
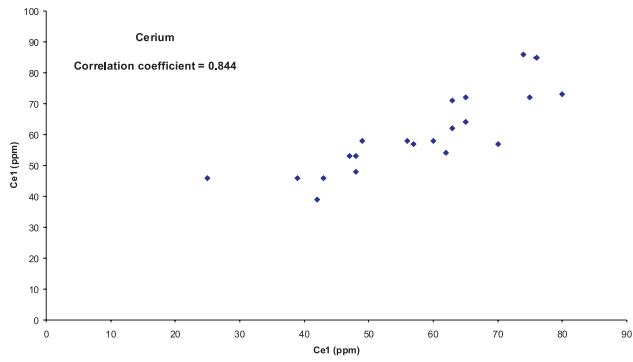
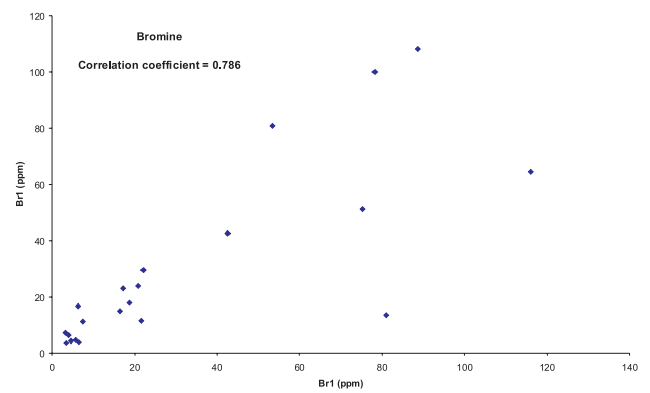
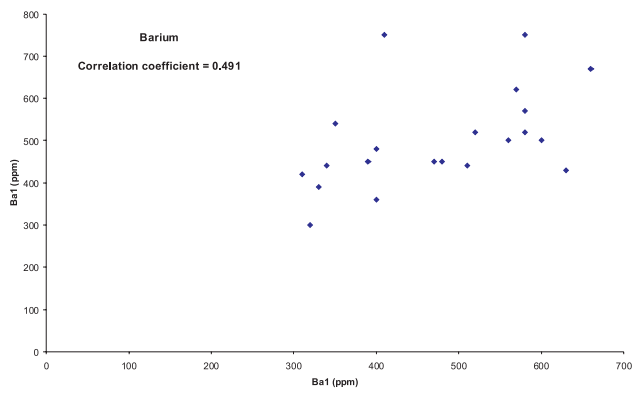
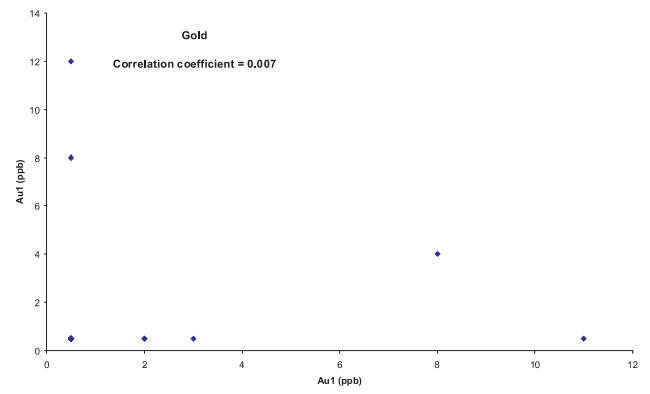
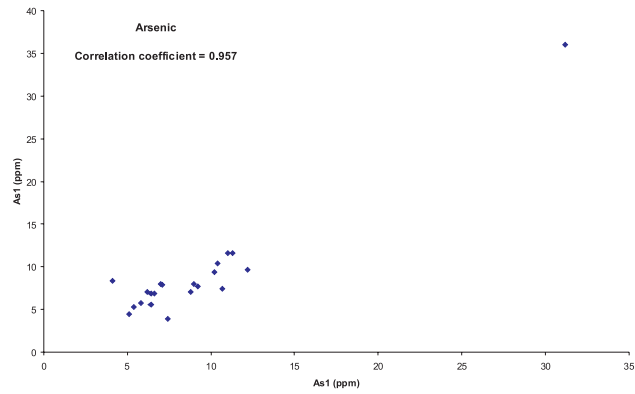


Figure 53. Distribution of Zirconium (Zr2) in till.

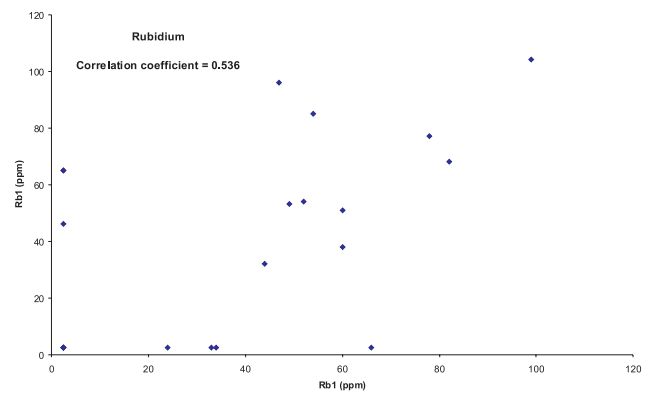
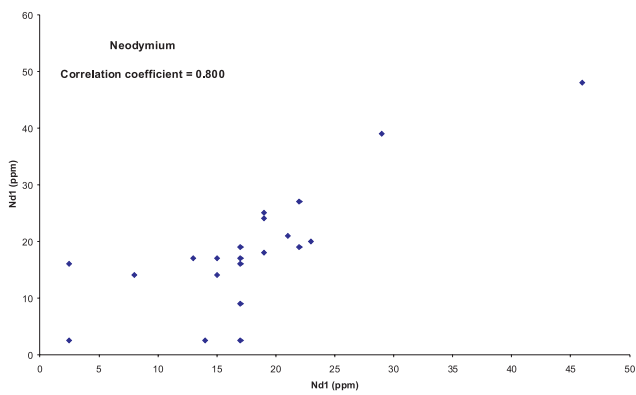
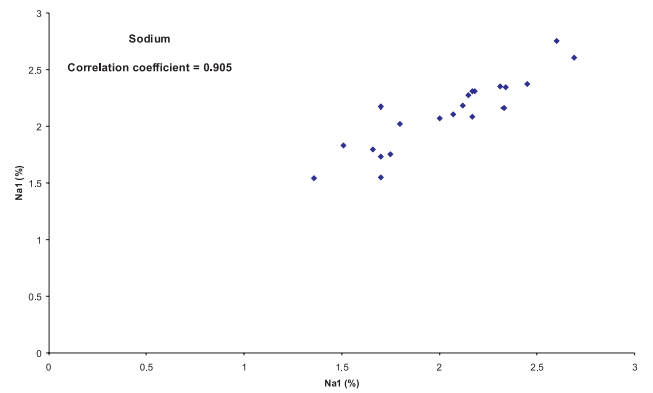
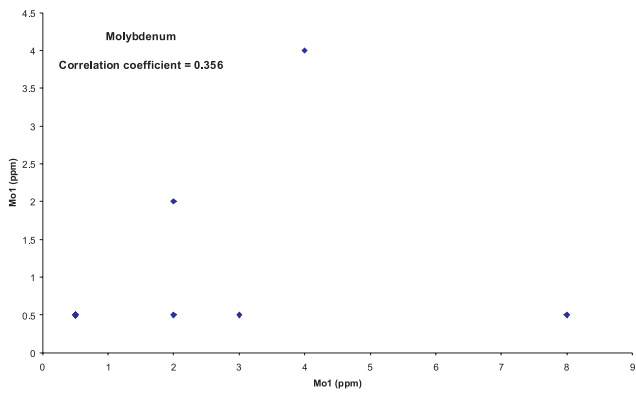
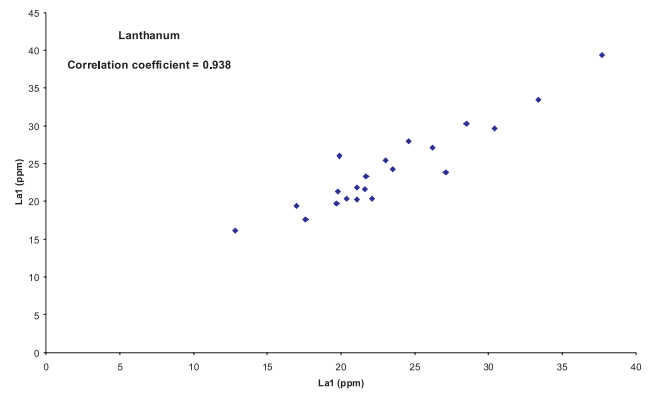
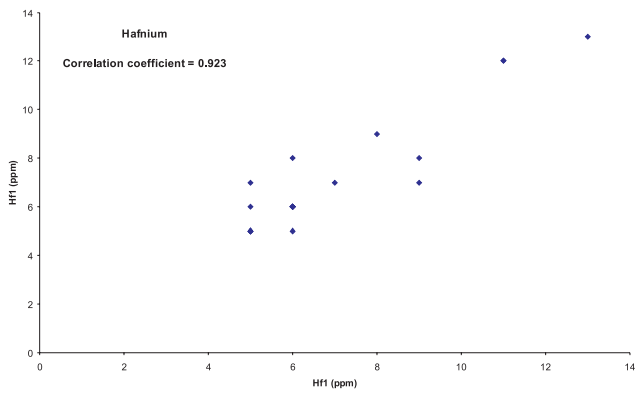
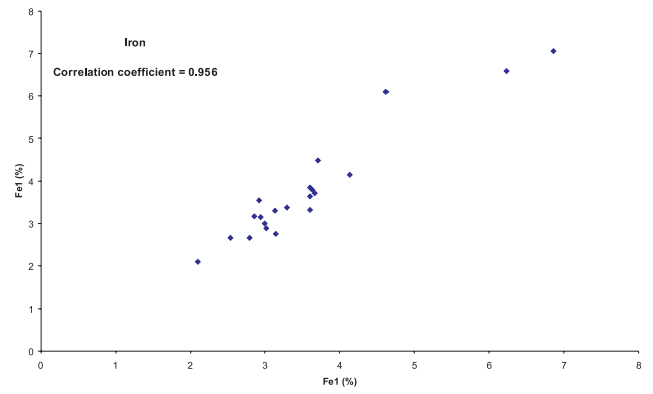
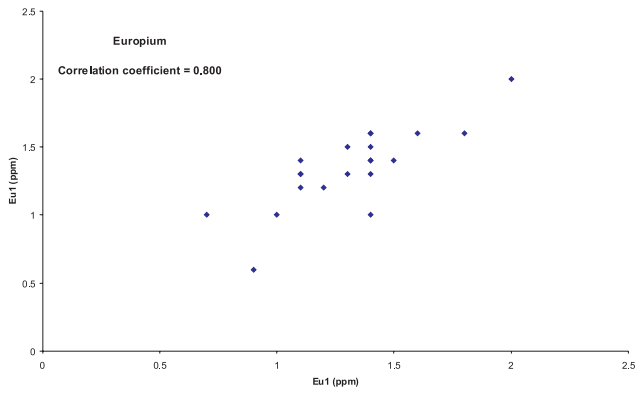
Appendix C

Comparison of Field Duplicates (n = 21)

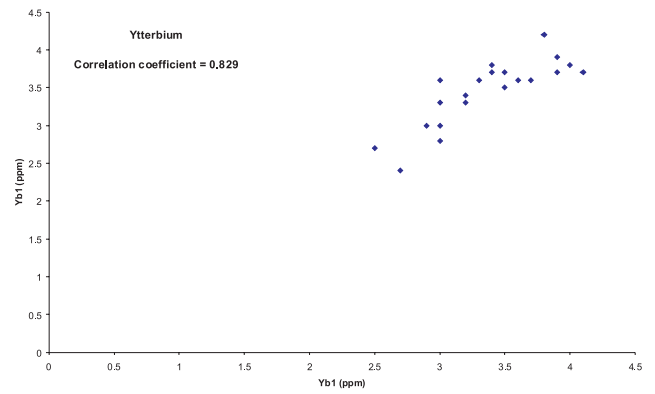
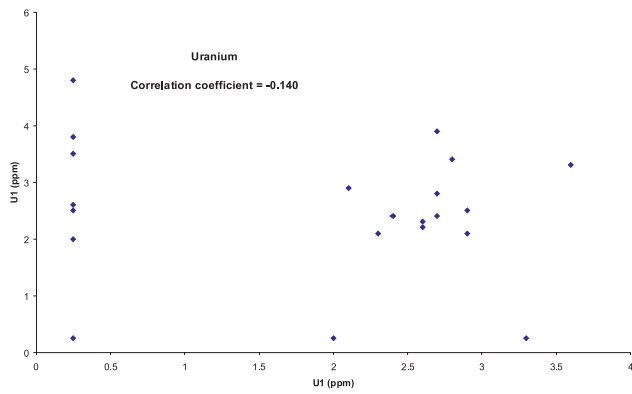
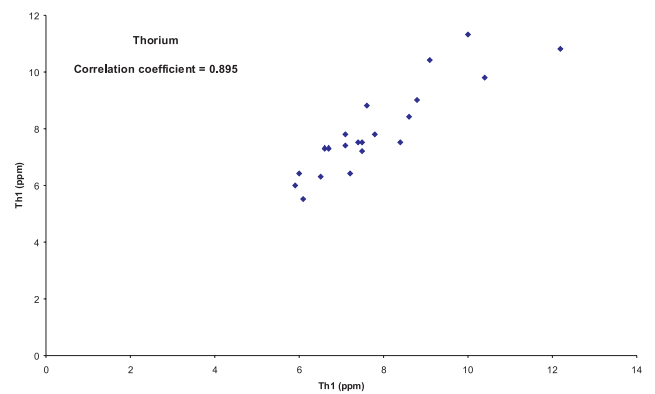
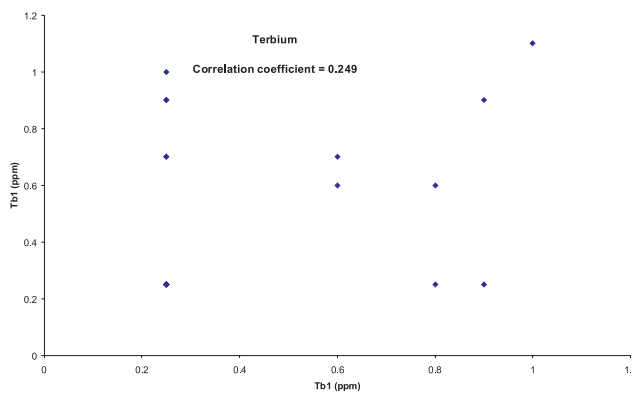
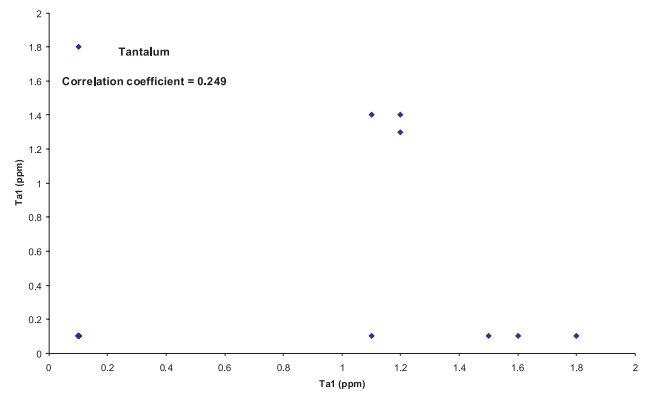
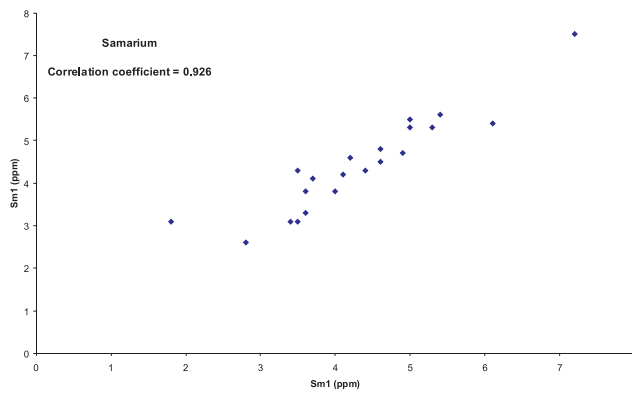
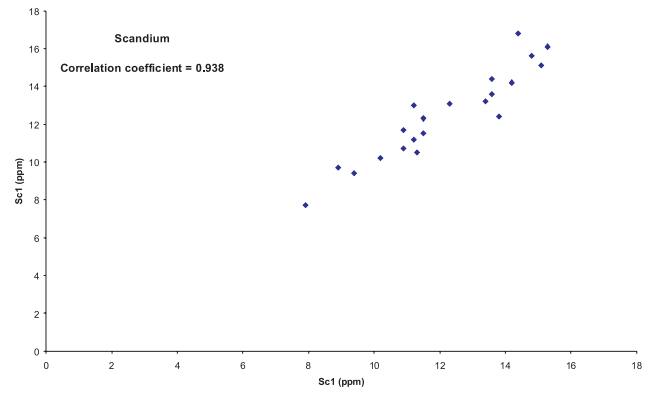
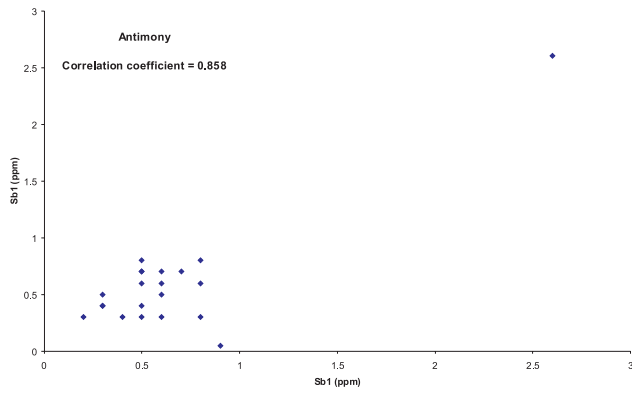
Appendix C: Continued



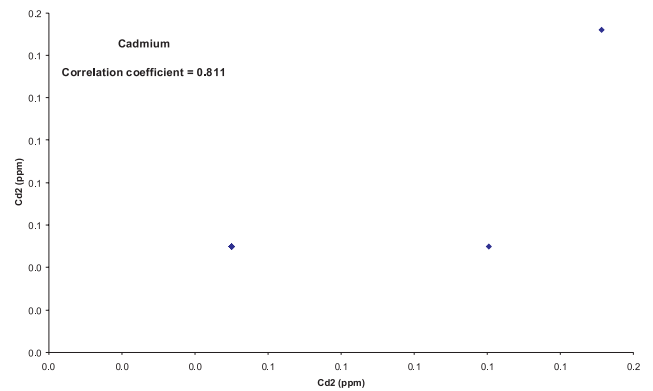
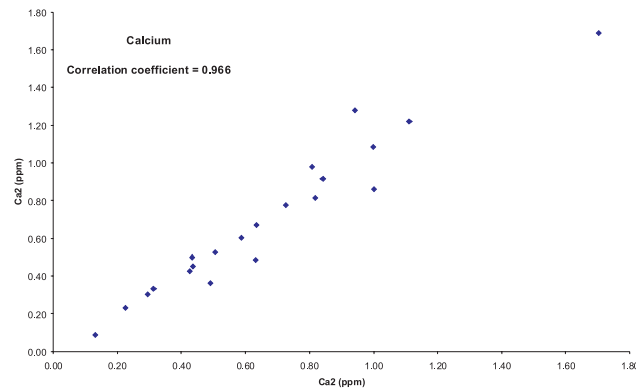
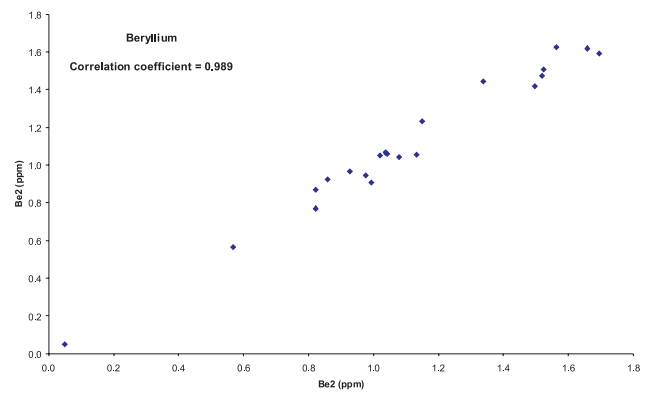
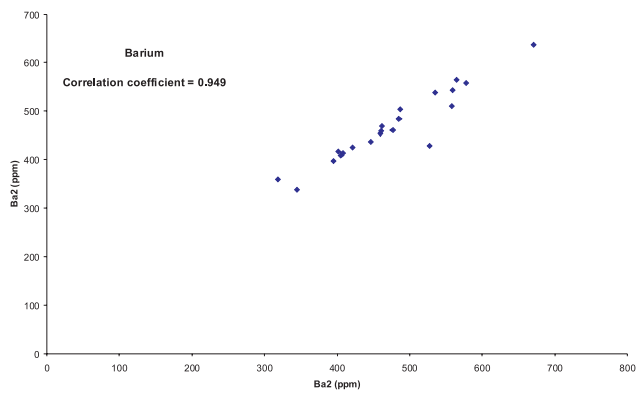
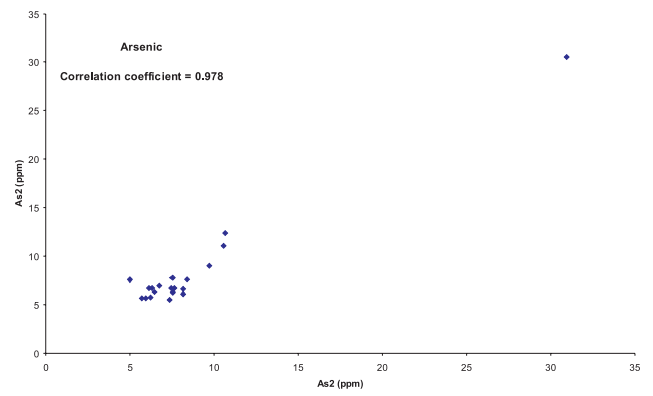
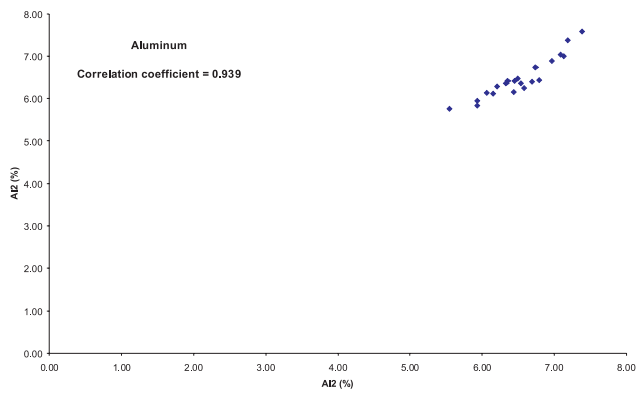
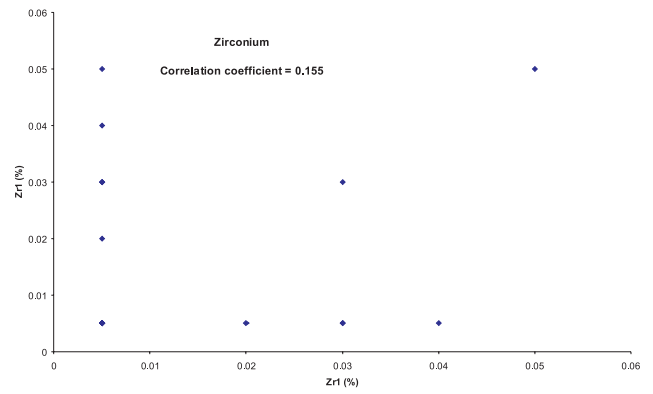
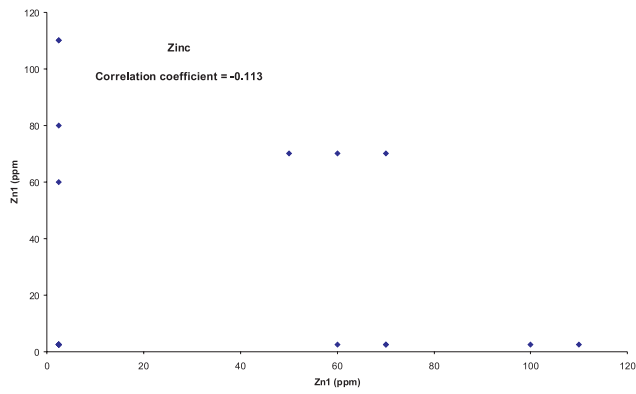
Appendix C: Continued



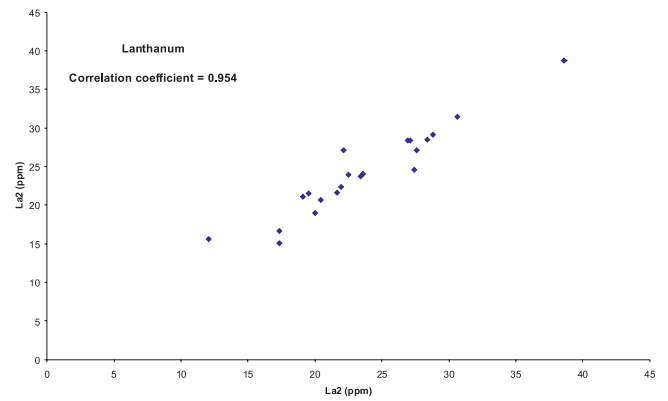
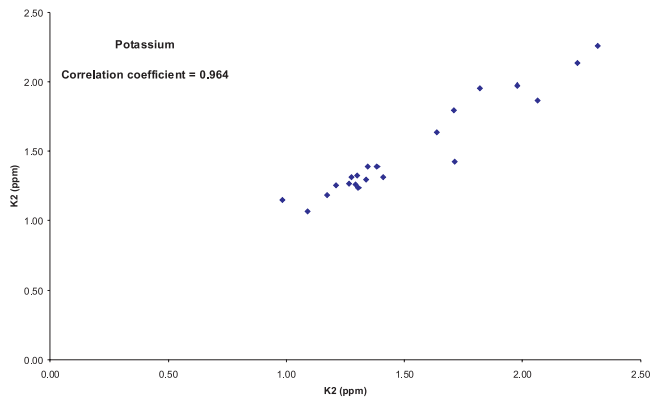
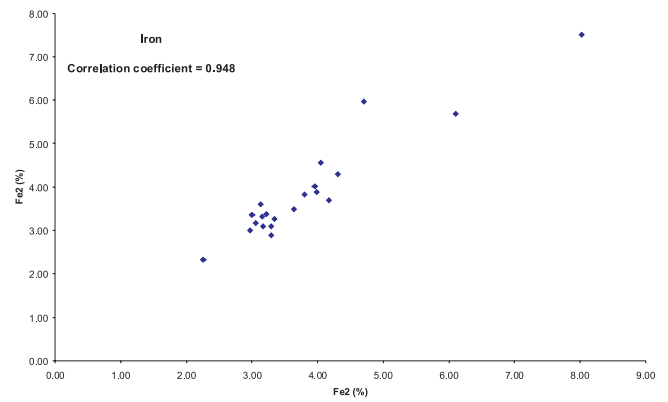
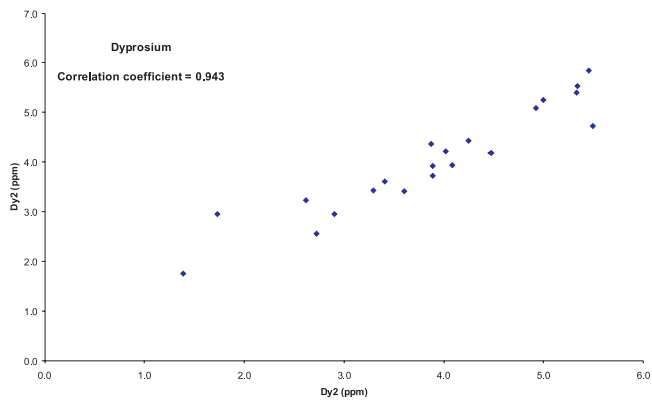
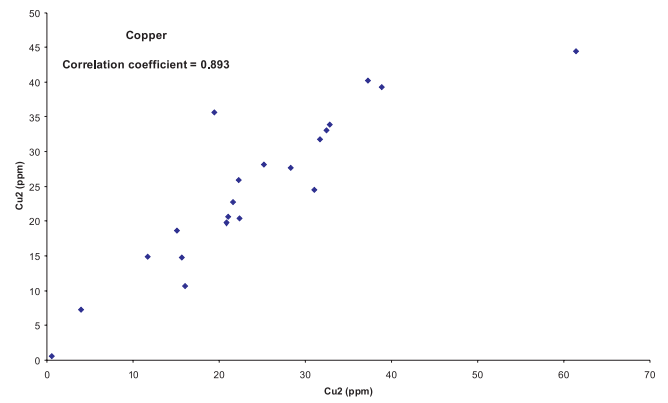
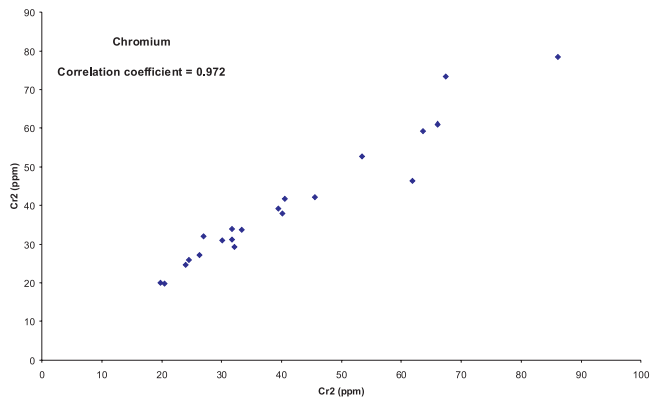
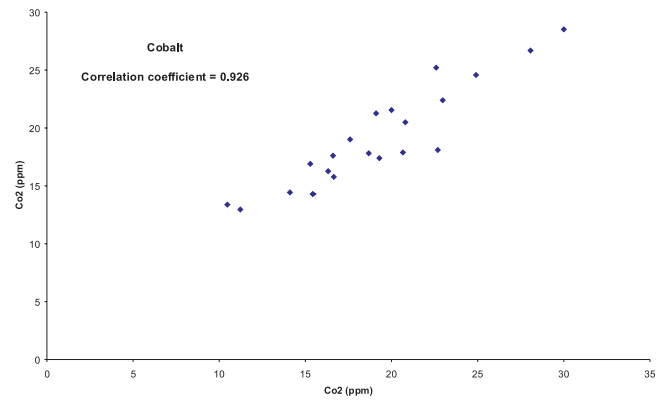
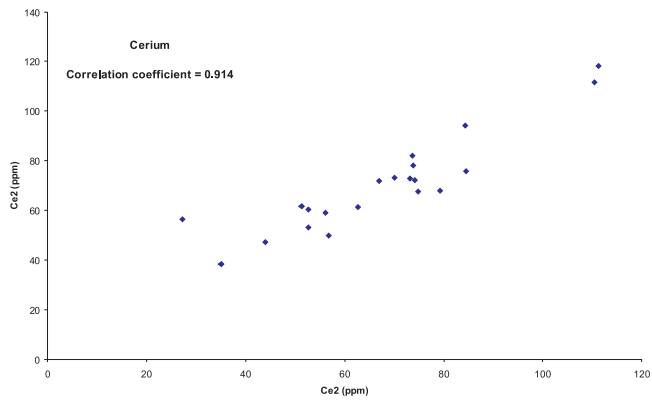
Appendix C: Continued



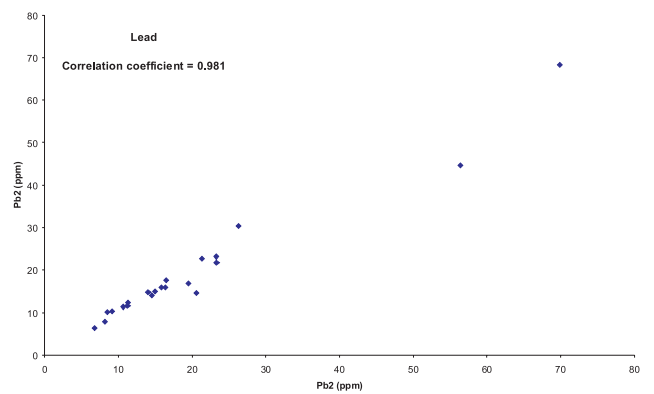
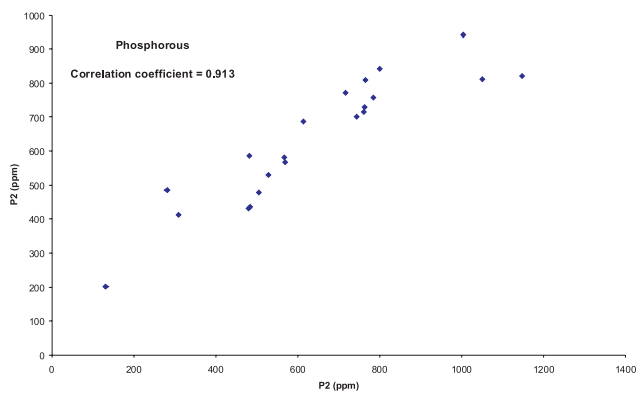
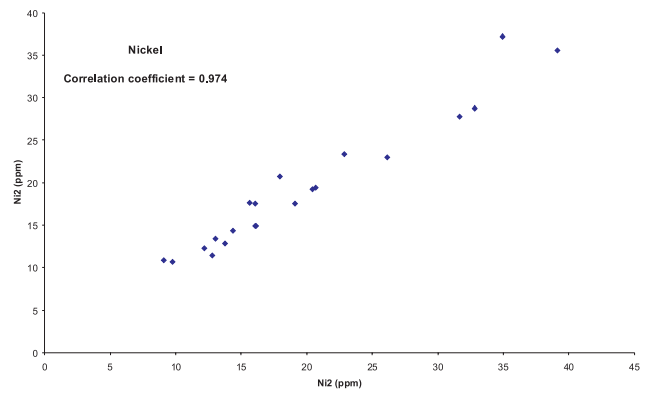
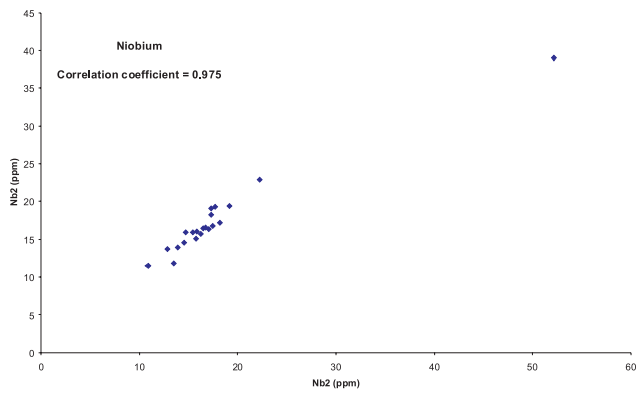
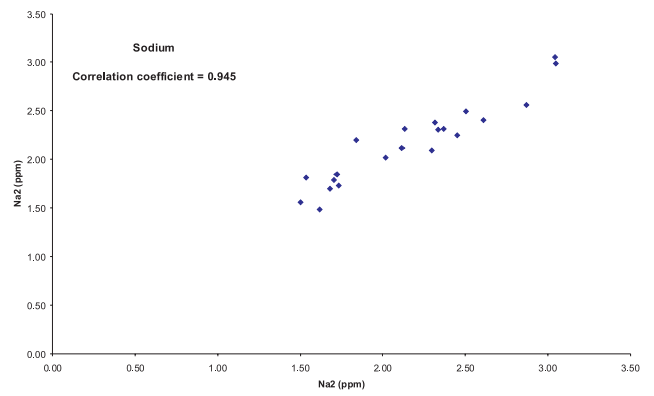
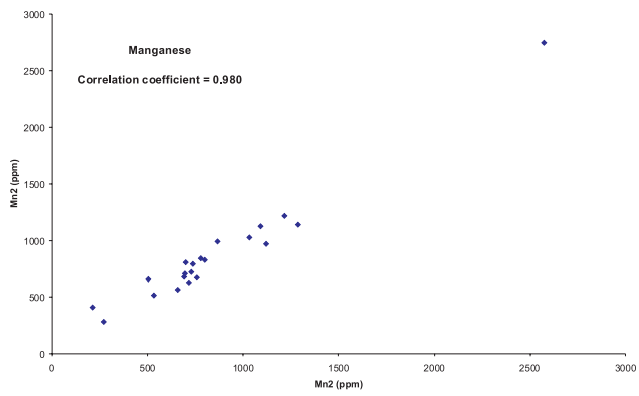
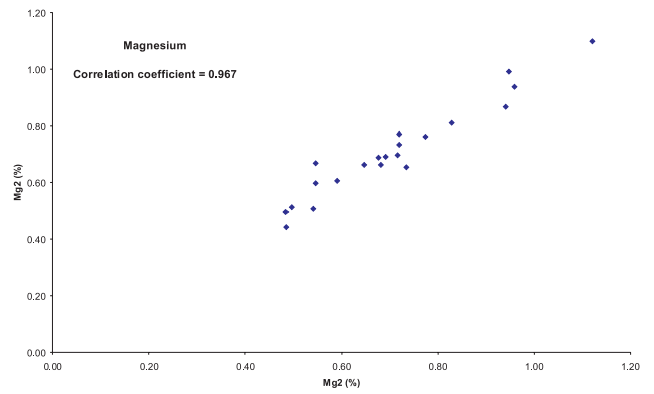
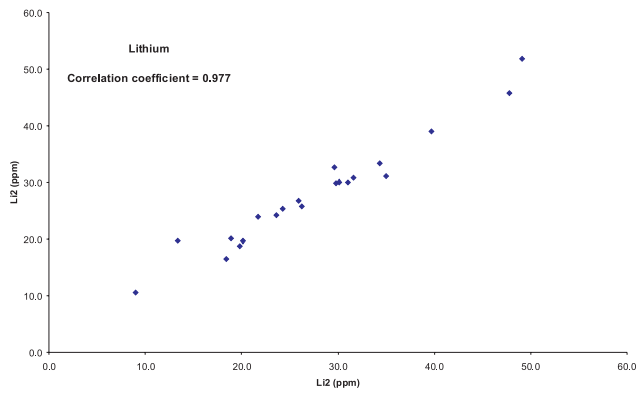
Appendix C: Continued



Appendix C: Continued



Appendix C: Continued



Appendix C: Concluded

