British Geological Survey
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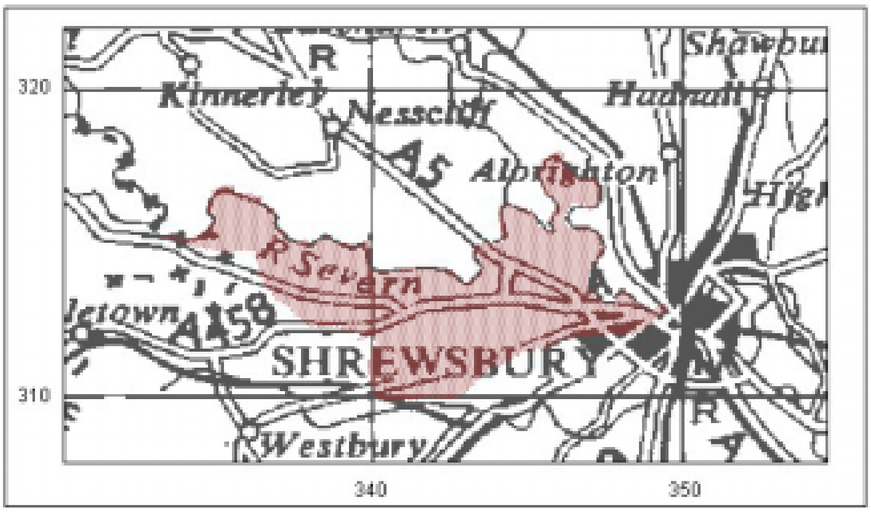
# A hydrogeological characterisation of the superficial deposits of the Severn valley upstream of Shrewsbury

Prepared for the Environment Agency
by the British Geological Survey

Commissioned Report CR/01/187



BRITISH GEOLOGICAL SURVEY

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# A hydrogeological characterisation of the superficial deposits of the Severn valley upstream of Shrewsbury

**D McC Bridge, M G Sumbler and M G Shepley**



*Bibliographical reference*

D McC Bridge, M G Sumbler, and M G Shepley, 2001. *A hydrogeological characterisation of the superficial deposits of the Severn valley upstream of Shrewsbury* Commissioned Report, CR/01/187.



Keyworth, Nottingham British Geological Survey 2001

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# Executive Summary

This report summarises the results of a collaborative study jointly funded by the Environment Agency and the British Geological Survey (BGS).

BGS was commissioned to carry out a geological and hydrogeological characterisation of the superficial drift deposits of the Severn valley, upstream of Shrewsbury.

The principal aims of the project were identified as follows:

- to assess the heterogeneity of the superficial deposits within the buried channel systems that underlie this part of the River Severn
- to identify hydrogeologically significant drift lithologies with respect to ground water storage and aquifer recharge, and
- to assess their spatial distribution.

A model of the sub-drift topography was constructed, based on information from over 700 boreholes. These revealed an irregular rockhead surface, deeply dissected locally by steep-sided, buried channels and broader, over-deepened depressions. The deepest of these is the Severn Trench, which probably links eastwards with a separate south-east-trending system of buried channels that passes beneath Shrewsbury.

The drift varies considerably in thickness but on the lower ground commonly exceeds 40 m and in places reaches 120 m. In the Severn Trench, the sediment infill is dominantly one of clays and silts, but in the more easterly channels there are substantial sand bodies, which provide hydraulic connection between the River Severn and the underlying Permo-Triassic aquifer.

A detailed assessment of the drift variation across the district was carried out from a study of borehole records. Despite the marked lateral and vertical variability encountered, it proved possible, by constructing a series of stratigraphic cross-sections, to rationalise and classify the drift into a relatively small number of hydrogeological domains and sub-domains. The resulting domain map distinguishes zones in which differing hydrogeological behaviour can be expected. For example, it shows where potential inflow from the River Severn via the drift to the Permo-Triassic aquifer is likely and where it is unlikely. It also indicates where precipitation recharge is likely to be restricted by the surface clays.

The results of the study will be used by the Environment Agency to build an investigative groundwater model of the Alberbury groundwater unit.

An electronic version of this report and digital outputs are to be found on the accompanying CD.

# Contents

# 1 Introduction

An Environment Agency report on the feasibility and need for developing groundwater models of the Shropshire Sherwood Sandstone aquifer (Streetly and Shepley, 2001) identified that the water balance of the Alberbury groundwater unit is poorly understood, in particular flow between the Sherwood Sandstone, the Severn Trench and the River Severn. The estimate of available water resources for the Alberbury groundwater unit, which is based on a standard recharge calculation used within the Environment Agency Midlands Region, is considerably less than the licensed and actual groundwater abstraction for public water supply. As a result, the unit could be considered over-abstracted. However, over-abstraction is not clearly confirmed by groundwater levels and therefore the validity of the current water resources calculation for the Alberbury groundwater unit is uncertain.

The Environment Agency of the Midlands Region commissioned this collaborative project because of the importance of the buried channel systems in relation to the water resources of the district. The Alberbury groundwater unit has been defined by the Environment Agency as the Permo-Triassic sandstones to the south of the River Severn by Shrewsbury, however, it is possible that the drift-filled Severn Trench and associated channels should be considered an integral part of this unit.

The results of the characterisation of the Severn Trench will be used by the Environment Agency to build an investigative groundwater model of the Alberbury groundwater unit including the Severn Trench. This model will be used to test what is the plausible range of water balances and how the geology of the district influences groundwater flow. It is anticipated that the results from the investigation will lead to a more consistent estimation of the water resources of the Alberbury groundwater unit

## 1.1 LOCATION AND TOPOGRAPHY

The district investigated covers a 10 x 20 km block of country extending along the Severn valley from Melverley [333 317] to just east of Shrewsbury (Figure 1). The River Severn forms the approximate northern boundary of the area and Rea Brook, which flows into the Severn at Shrewsbury, defines the southern boundary. The only other major stream is the River Perry, which enters the Severn near Mytton, but for most of its course, lies outside the area of study.

The topography is heavily dissected and on the lower ground, mainly drift-covered. The Permo-Triassic escarpment forms a prominent feature around Alberbury but the highest ground is found in the south-west, where Lower Palaeozoic rocks crop out at around 200 m above OD.

A Digital Terrain Model of the topographic surface (contoured at 10 m vertical interval) is illustrated in Figure 2.

## 1.2 PREVIOUS RESEARCH

Descriptions of the geology of the district are given in two survey memoirs (Pocock and Wray, 1925; Pocock et al., 1938). A sand and gravel assessment survey (Cannell, 1982) contains reliable subsurface information on the drift deposits in the east of the area. In a more recent overview, Thomas (1989) reconstructs the glacial evolution of the region from a study of landform-sediment assemblages. The hydrogeological setting of the district is described by Streetly and Shepley (2001), and there are a number of internal unpublished geophysical reports covering parts of the district.

# 2 Geological summary

## 2.1 SOLID GEOLOGY

The Solid (bedrock) geology map (Figure 3) is a compilation based on six-inch scale County Series sheets, surveyed between the 1920s and 30s. It covers parts of four published 1:50 000 sheets (Wem, Welshpool, Shrewsbury and Oswestry). No attempt has been made to create a seamless map or to revise it in the light of new borehole information. The principal formations present at outcrop or beneath superficial cover are listed in Table 1.

The central and northern parts of the district are underlain by up to 800 m of Late Permian and Triassic rocks forming part of the sedimentary cover to the Ternhill Terrace, a fault-bounded block, transitional between the Stafford Basin to the south-east and the deep Cheshire Basin to the west. The sequence thickens north-eastwards, reaching between 800 and 1000 m in the northern part of the district. The Hodnet Fault, which has a considerable westerly downthrow, forms the eastern boundary of the Ternhill Terrace, and is the demarcating structure between the Cheshire Basin and Stafford Basin to the south-east. The north-western margin of the terrace is defined by the Wem Fault, which throws down the base of the Permo-Triassic sequence by some 1600 m to the north-west, and locally juxtaposes the Mercia Mudstone against the Kinnerton Sandstone.

West of the Hodnet Fault, the nomenclature of the Permo-Triassic Formations follows that used in the Cheshire Basin. The Sherwood Sandstone Group comprises the Kinnerton Sandstone, the Chester Pebble Beds, the Wilmslow Sandstone and the Helsby Sandstone. East of the Hodnet Fault, the approximate time equivalent of the Kinnerton Sandstone is the Permian Bridgnorth Sandstone. In the Stafford Basin, this formation is excluded from the Sherwood Sandstone Group.

The nomenclature of the late Carboniferous units has been standardised for the Midlands ((Powell, et al., 2000). Local names (now obsolete) are shown in brackets in Table 1.

## 2.2 SUPERFICIAL DEPOSITS

The superficial deposits were mainly laid down during the Late Devensian glaciation in an area of coalescence between Irish and Welsh Ice sheets (Thomas, 1989). The resulting deposits vary rapidly in thickness and sediment type. However, Thomas (1989) has shown that the geometry and lithological characteristics of the glacigenic deposits form predictable patterns of sedimentation that can be linked to sub-glacial and supraglacial deposition at an oscillating ice margin

On the published maps (Figure 4) the glacigenic deposits comprise three main components, namely, till, glaciofluvial outwash and glaciolacustrine deposits.

**Till** is the most widespread superficial deposit, forming sheets and morainic ridges in places over 18 m thick. Typically, it comprises a hard, reddish brown or greyish brown 'sandy clay'. The reddish brown till contains northerly-derived clasts, whereas the greyish brown till contains clasts derived from mid-Wales. Both are believed to be lodgment tills. The sand fraction is generally fine- to medium-grained. In borehole logs, a distinction can be drawn between these stiff lodgment tills and thinner deposits of soft, grey to reddish brown clay or silty clay (usually less than 5 m thick), which occur interstratified with, or capping outwash, and may represent resedimented ablation tills.

**Glaciolacustrine deposits c**onsist of soft, brown, pebble-free, laminated clays. They are commonly recorded in boreholes, particularly in the west of the district, but are not widely mapped. Many of the deposits recorded as silty clay in this report may have originated in a glaciolacustrine environment, suggesting that localised ponding of meltwaters by ice was a frequent occurrence during deglaciation.

**Glaciofluvial outwash deposits** occur in a variety of settings; they include ice-contact deposits, outwash fans and valley train deposits. The deposits range from coarse gravel, through pebbly sands to clayey sands. The most extensive deposits occur around Montford and Shrewsbury. The sands and gravels of the Montford area were probably laid down as alluvial fans or fan deltas in front of an ice-sheet that lay to the north. The deposits around Shrewsbury are probably also outwash deposits and form part of a more extensive body of sand and gravel that fills a buried channel system beneath the Severn, hereabouts. The proven thickness of sand and gravel is commonly in excess of 20 m. Valley train deposits are mainly restricted to the valley of Rea Brook.

*Post-Glacial Deposits*

During the 13 000 years since the ice retreated, silts, sands and gravels, derived in part from the glacigenic deposits have been reworked and incorporated in alluvium and river terrace deposits.

**River Terrace Deposits** form three benches rising 3–6 m, 6–12 m, and 12–18 m above the Severn. The Third Terrace can only be traced upstream as far as Shrewsbury. It consists predominantly of fine- and coarse gravel of about 4.5 m thickness.

The Second Terrace ranges from 2 to 5 m in proven thickness. It consists of brown sandy pebbly clay overlying a 'clayey' gravel.

The First Terrace can be traced upstream to Montford

Bridge [343 315] and consists of brown silty or sandy clay overlying coarse grained gravel. The deposit is 4 m thick.

**Alluvium** consists of gravels, sands, humic silts and clays. It occurs as a continuous deposit on the floor of the Severn valley, where it ranges up to 8 m but is commonly about 5 m thick

**Peat** occurs in hollows within the moundy drift, notably to the north-west of Shrewsbury around Berwick and Bicton [344 315].

| Age | Group | Formation | Principal lithologies | Hydrogeological classification |
|---|---|---|---|---|
| Triassic | Mercia Mudstone Group | Eldersfield Mudstone | Silty mudstone and siltstone, red-brown, mainly structureless | Non-aquifer |
| | | Tarporley Siltstone | Siltstone, red-brown, with subordinate sandstone and mudstone | Minor aquifer |
| | Sherwood Sandstone Group | Helsby Sandstone | Sandstone, with sporadic conglomerates, particularly towards the base; some interbedded siltstones | Major aquifer |
| | | Wilmslow Sandstone | Sandstone, red-brown to brick red, fine- to medium-grained, generally pebble-free, cross stratified, with sporadic siltstones | |
| | | Chester Pebble Beds | Pebbly sandstone and conglomerate, rare mudstone | |
| Permian | | Kinnerton Sandstone | Sandstone, red-brown to yellow, generally pebble-free, fine- to medium-grained, cross-stratified. Dominantly aeolian. | |
| | | Bridgnorth Sandstone | Sandstone, red-brown, aeolian | |
| | | Alberbury Breccia | Breccia, pinkish purple, and associated pebbly feldspathic sandstone | Minor aquifer |
| Carboniferous | | Salop Formation:<br>Enville Member<br>Alveley Member<br>(formerly Enville Formation and Keele Formation) | Mudstone and sandstone, red-brown, with minor conglomerate: Enville Member sandstone rich; Alveley Member mudstone rich | |
| | | Halesowen Formation<br>(Coed-yr-Allt Beds) | Sandstone and mudstone, grey-green and red, thin coals | |
| Devonian-Silurian | | Lower Old Red Sandstone | Ssandstone, mudstone and conglomerate, red-brown | |
| | | Raglan Mudstone | Mudstone with sandstones and calcretes, red-brown | |
| Silurian | | Upper Ludlow Shales | Mudstone and siltstone, olive-grey, calcareous | Non-aquifer |
| | | Lower Ludlow Shales | | |
| | | Llandovery rocks | Undifferentiated | |
| Ordovician | | Caradoc rocks | Undifferentiated | |
| Precambrian | | Bayston-Oakswood Formation | Sandstone, purple, coarse-grained, with subordinate purple mudstones and siltstones | |
| | | Haughmond Conglomerate Member | Pebbly grits with conglomeratic lenticles | |
| | | Stanbach Conglomerate Member | | |
| | | Darnford Conglomerate Member | | |
| | | Portway Formation | Shaly mudstones and siltstones with sandstone bands, purple and greenish grey; sandstones are locally massive particularly near the base. | |

Table 1 **Bedrock formations**

# 3 Rockhead relief and drift thickness

The rockhead surface (Figure 5) was generated from borehole records held in the National Geosciences Records Centre at BGS. The locations of the boreholes are shown in Figure 1 and a full listing is included in Appendix 2.

373 boreholes penetrated the base of the superficial deposits and are identified by the letters RH (Appendix 2, Rockhead_type field); an additional 350 boreholes terminated above rockhead and are identified by the letters TD. An initial hand contour-plot was drawn from the posted values. This was subsequently digitised, recombined with the borehole data and outcrop boundary lines, and then gridded. The final surface was generated by re-gridding to take account of those boreholes that terminated above rockhead. The reliability of the rockhead surface can be judged from the distribution of the boreholes. In the west and south-centre of the district, the surface is poorly constrained and, in these areas, the surface strongly reflects the original hand-contouring. Elsewhere, control is better and the surface is likely to be considerably more reliable.

The rockhead surface is eroded into deep channels that formed during ice-advance, and, in places, cut down to below sea-level. A significant feature is the Severn Trench, which runs through Melverley [333 317] towards Shrawardine [339 315]. This broad depression is almost certainly of glacial origin, suggested by its overdeepening and its width. At its deepest proven point at Duglands (SJ31NE/16), its base lies at -53 m OD. Towards Shrawardine, rockhead rises rapidly to around 40 m above OD (borehole SJ41NW/48) and the eastward continuation of the channel is less well defined.

A subsidiary channel system enters the district around Mytton and can be traced south-eastwards to beyond Shrewsbury. The channel has an uneven floor, and a humped longitudinal profile. Deep scours (to -10 m OD) occur to the south-east of Mytton, west of Gravel Hill and in a trench that strikes south-eastwards through the centre of Shrewsbury. This channel system is here referred to as the Mytton -Shrewsbury System.

A third much shallower and ill-defined depression trends north-eastwards from near Ford.

Up to 120 m of drift is present in the deeper parts of the Severn Trench, and thicknesses of around 75 m occur in the Mytton-Shrewsbury system. The drift cover is thin or absent on the higher ground in the south-west of the district, along the valley of the Rea Brook and north of Shrewsbury. The variation is detailed in Figure 6, which was generated by subtracting the rockhead grid from the DTM grid.

The timing and sequence of events leading to the incision and filling of the various channel systems remain unclear. The Mytton-Shrewsbury channel system lies approximately along the zone of confluence between the Irish Sea and Welsh ice sheets and may have formed during uncoupling of these two ice sheets. The restriction of thick sequences of glaciolacustrine sediments to the western end of the Severn Trench indicates meltwaters were impounded in a temporary lake basin, that may have been dammed against a declining ice margin to the east. Subsequent overflow into the Mytton -Shrewsbury System is presumed to have occurred although the rockhead topography provides few clues as to the course of this overflow channel.

## 3.1 DRIFT CHARACTERISATION

The characterisation of the drift was carried out by inspection of serial cross sections. Examples are given in Appendix 1. These were constructed by combining digitally encoded borehole data with the DTM and rockhead grids. Individual downhole profiles are coloured to reflect inferred transmissivity; background colours show a stylised correlation of the principal lithostratigraphical units (till, glaciofluvial deposits and alluvium).

# 4 Hydrogeological domains

The concept of domains has been applied successfully to characterise the spatial variability of Quaternary sequences (e.g McMillan et al., 2000) and is adopted in this study. The method depends on subdividing the sequence into sediment associations whose hydrogeological behaviour can be predicted from knowledge of the thickness and composition of the constituent lithologies.

Following a detailed review of the borehole data for the Alberbury district, nine basic hydrogeological domains were identified (Table 2), some of which were further subdivided.

| **Hydrogeological domain** | | **Sub-domain** | | **Characteristics** | **Thickness** |
|---|---|---|---|---|---|
| 1 | Bedrock at or near surface | 1.1 | Major aquifer | Defined according to Aquifer Vulnerability Map | |
| | | 1.2 | Minor aquifer | | |
| | | 1.3 | Non-aquifer | | |
| 2 | Thin till and other deposits | 2.1 | Thin drift on major aquifer | Mainly till but includes minor outwash and alluvial deposits | Thickness generally less than 5 m |
| | | 2.2 | Thin drift on minor or non-aquifer | | |
| 3 | Alluvial deposits overlying bedrock | 3.1 | Alluvial floodplain deposits resting directly on major aquifers | Fine-grained silty clay on sand, gravel or gravelly sand | Generally about 6 m thick along the River Severn |
| | | 3.2 | Alluvial floodplain deposits resting directly on minor or non-aquifers | Sand to clay ratio variable (estimated at 50:50) | |
| 4 | Buried channel<br>(defined approximately by 40 m OD contour) | | Glaciolacustrine-till | Interbedded laminated clay, silty clay and till, mainly in the Severn Trench.<br>Gravelly sand and sand beds up to 20 m present locally in base of channel. Generally the domain can be regarded as a thick aquiclude. | Average 68 m but up to 116 m proved in deepest part of channel |
| 5 | Buried channel | | Till-glaciofluvial outwash | Upper till up to 25 m thick, overlying sand and gravel. Best developed in the northern part of the Mytton-Shrewsbury Channel System. | Average 45 m |
| 6 | Buried channel | 6.1 | Glaciofluvial outwash (including associated River Terrace Deposits and Alluvium) resting on major aquifer | Thick sequences of sands, gravelly sands and silty sands in presumed hydraulic continuity with a major aquifer. Found in the central part of the Mytton-Shrewsbury Channel System and between Great Ness and Ensdon.<br>Major control of groundwater movement with hydraulic connection between River Severn and bedrock. | Average 30 m |
| | | 6.2 | As above but resting on minor aquifer | Found in the southern part of the Mytton-Shrewsbury Channel System | Average thickness 30 m |
| 7 | Till | | Morainic ridge and till plain | Thick till unit resting directly on bedrock and forming a prominent ridge in the south-centre of the district; smaller outcrops in the north and north-east | Average 21 m |
| 8 | Ice-contact | | Till-sand-till | Discontinuous upper till sheet overlying alternating asssemblage of outwash sands, laminated clays, and wedges of till. | 20–30 m |
| 9 | Outwash | 9.1 | Sand-till | Outwash fan deposits on thick till | 35 m |
| | | 9.2 | Sand-till. | Valley train outwash including Terrace Deposits, locally overlying thin till, but commonly resting directly on bedrock. | 16 m |

Table 2 **Domain classification**

## 4.1 AMPLIFICATION OF THE STATUS OF THE SEPARATE DOMAINS

The distribution of domains and their spatial relationships one to the other is shown in Figure 7. It should be emphasised, however, that whilst some domains can be readily delineated, others are less easily defined and there is much gradation between them.

*Domain 1: Bedrock at or near surface*

The subdivisions 1.1 to 1.3 relate to the vulnerability class of the outcropping formation. Despite the age of the base geological maps, the domain boundaries are considered to be reasonably accurate.

*Domain 2: Thin till and other deposits (less than 5 m thick)*

In areas of thin drift, recharge and interflow is likely to be determined by the properties of the underlying bedrock. Accordingly, two sub-domains are depicted; one where Permo-Triassic rocks lie beneath thin drift (Sub-domain 2.1), the other, where the underlying bedrock is a minor or non-aquifer and therefore of lower transmissivity (Sub-domain 2.2).

In both sub-domains, till is the most widespread superficial deposit and fluid flow is likely to be concentrated along fissures and through weathered or leached horizons.

The boundaries of this domain were derived from the drift thickness model and are considered to be accurate at the scale required.

*Domain 3: Alluvial deposits overlying bedrock*

Permo-Triassic sandstone is exposed, or present beneath alluvium in the bed of the River Severn, at four localities - Shrawardine [339 315], Montford [342 314], Leaton Shelf [346 318] and on the outskirts of Shrewsbury at Hencott [349 315]. At these localities, there is the potential for significant groundwater flow between the river and the Permo-Triassic rocks, and these areas are classified as Sub-domain 3.1. In other sections of the river, as in the meander loops through Shrewsbury where the channel is incised in rocks classified as minor or non-aquifer, the alluvial deposits are classified as Sub-domain 3.2.

*Domain 4: Buried channel: Glaciolacustrine-till*

Beneath the alluvial flats centred on Pentre [336 317] is the buried channel known as the Severn Trench. This is infilled with up to 116 m of dominantly soft clays and laminated silty clays (Section 3). Sands are present locally in the floor of the trench and there are isolated sand bodies, up to 10 m thick, present locally at higher levels in the sequence. Thin, interbedded tills typically divide the lacustrine sequence. Accumulation is thought to have occurred in a glaciolacustrine setting, when meltwaters were impounded in a temporary lake basin dammed against the declining ice margin to the south-east at Shrawardine.

Recharge through these sediments is expected to be small and the hydrogeological domain probably behaves as an aquitard with limited flow in the horizontal direction along sandier laminae.

*Domain 5: Buried channel; Till-glaciofluvial outwash*

The till-glaciofluvial outwash hydrogeological domain occurs in the northern part of the Mytton-Shrewsbury channel system between Mytton and Bicton. Its boundaries are defined approximately by the 40 m OD rockhead contour. On the evidence of the available sparse borehole data, the channel in this area appears to be filled in its lower part by sand, but capped by an upper till-dominated unit, up to 35 m thick. Although there is unlikely to be significant recharge through the till, there is likely to be hydraulic connection between the underlying sands and the sands in the adjoining domain (Domain 6).

*Domain 6: Buried channel: Glaciofluvial outwash*

This hydrogeological domain is best developed within the Mytton-Shrewsbury Channel System, where an extensive body of sand and gravel is in hydraulic continuity with the strata of the Permo-Triassic aquifer (Sub-domain 6.1). The deposits are around 30 m thick and mainly comprise sand and gravel with subordinate silty sands and discontinous till layers (Section 4). The till units within the sequence appear to be laterally impersistant and are unlikely to significantly affect groundwater flow. The River Severn flows across this domain for a distance of around 6 km and there is likely to be good hydraulic connection between the river, the outwash sequence and the underlying aquifer. This domain is, therefore, believed to exercise a major control on groundwater movement and is important from the point of view of groundwater storage and aquifer recharge. The Hodnet Fault brings Upper Carboniferous rocks to subcrop beneath the drift towards the southern end of the channel and in this sector a separate Sub-domain (6.2) is shown.

A separate small area, also defined as Sub-domain 6.1, is identified in the vicinity of Ensdon [341 317] where boreholes indicate that there is a substantial thickness of outwash overlying the aquifer (Section 3)

*Domain 7: Till*

The till domain comprises thick sheets of hard, red-brown pebbly or sandy clay most commonly averaging 21m in thickness. The domain is best developed in the south of the district where it forms a morainic ridge close to the limit of expansion of Irish and Welsh ice streams. Other occurrences of more limited aerial extent form more subdued topography in the east and north-east.

Recharge through these sediments is expected to be small and the hydrogeological domain probably behaves as an aquitard with limited flow in the vertical direction along fissures.

*Domain 8: Ice-contact; till-sand-till*

This domain is the least well constrained and lithologically is the most diverse. It comprises alternating lenses and wedges of till and and thickening units of outwash and lacustrine sediment that pass transitionally into the till-cored moraines of Domain 7 (see, for example, sections 3 and 5). The domains occur as two north-east trending belts on either side of the main Mytton-Shreswsbury channel system

The gravels and sands within the profile constitute the main flow horizons and flow will be mainly horizontal constrained by interbedded tills and clays. The ground water within the gravels may be locally confined by the surface ablation till which covers most of the area of the domain. Recharge is likely through the patches of sand and gravel that occur as windows in the upper till. The degree of interconnectivity of the gravels with each other and with the underlying bedrock is uncertain. The variability of the deposits, as evidenced in the closely spaced boreholes of Section 2a, makes this domain the most unpredictable in terms of its hydrogeological character.

*Domain 9: Outwash: sand -till*

This domain encompasses the large areas of outwash fan deposits around Montford (Sub-domain 9.1) and the outwash, and terrace deposits that lie to the north-east and south-west of Shrewsbury (Sub-domain 9.2). In the Montford area, the sands overlie a thick basal till, but this is discontinuous and may be cut out along an eastern extension of the Severn Trench , so there may well be connectivity to the underlying aquifer (Section 3). In the Shrewsbury area, the sub-domain is drawn to include a variety of sand-rich deposits (outwash, terrace and valley train deposits). In places, a basal till is present (Section 2c). Thicknesses are very variable.

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Most of the references listed below are held in the Library of the British Geological Survey at Keyworth, Nottingham. Copies of the references may be purchased from the Library subject to the current copyright legislation.

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# Figures

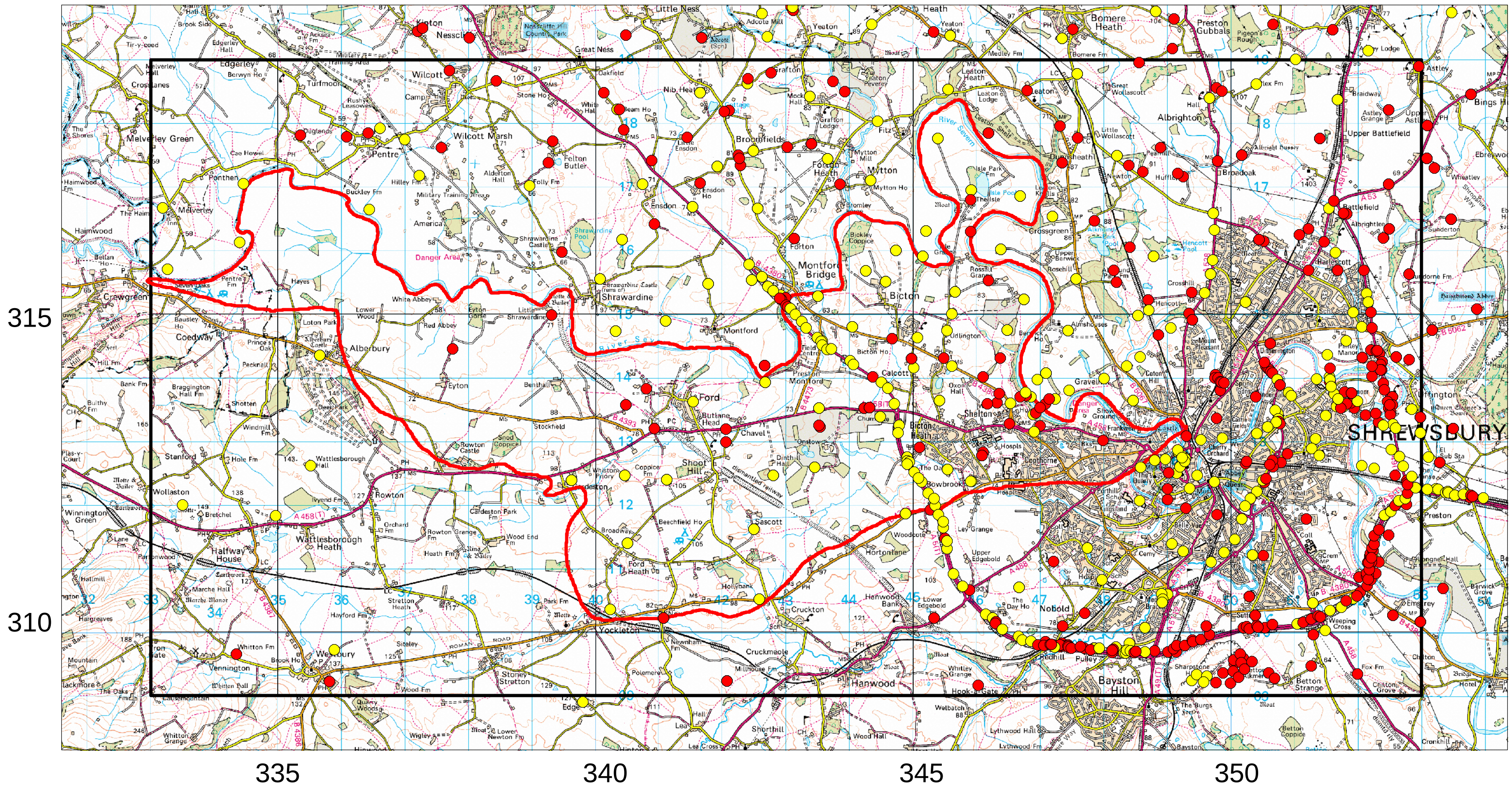



Figure 1. Borehole distribution

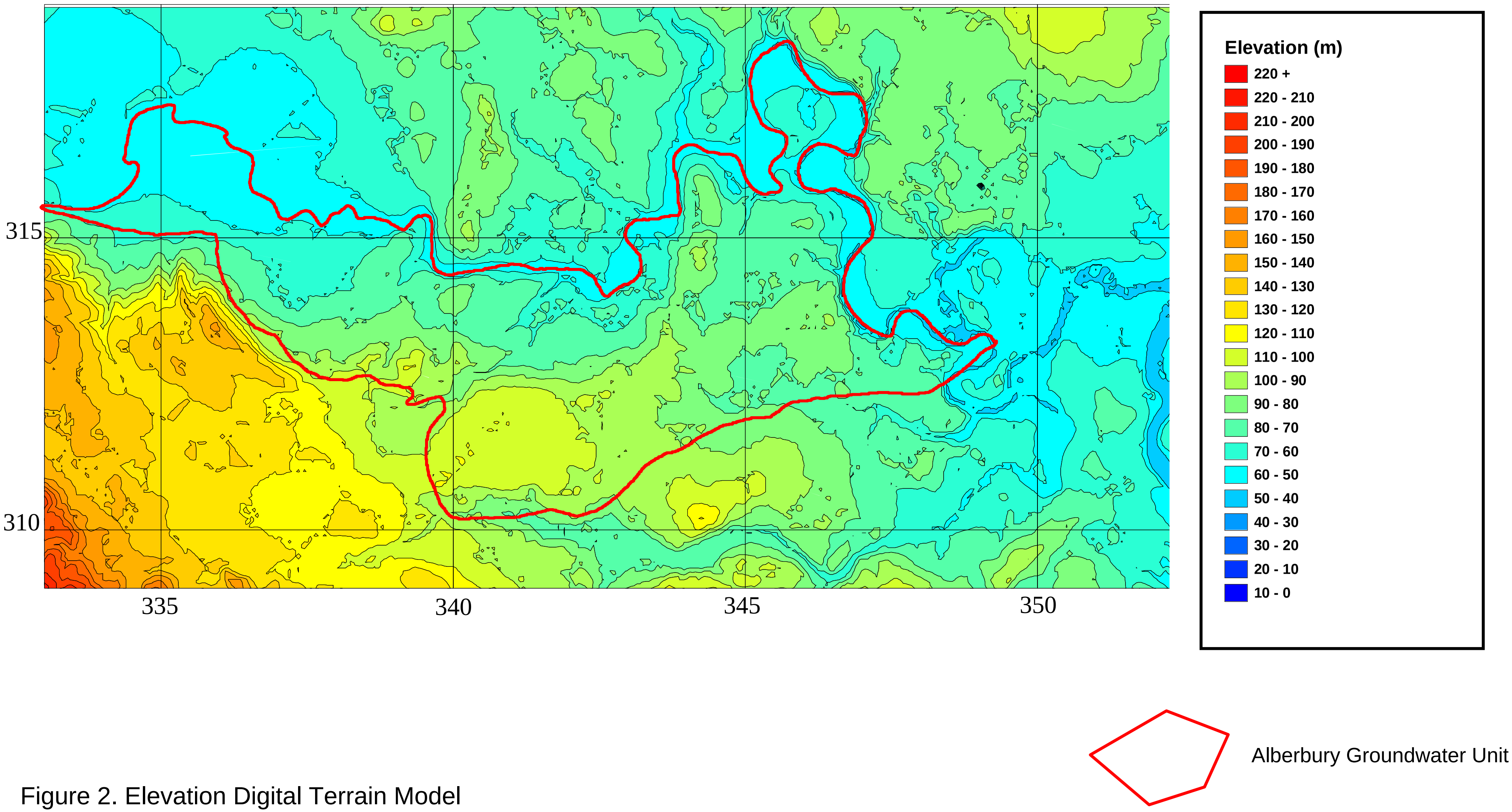



Figure 2. Elevation Digital Terrain Model

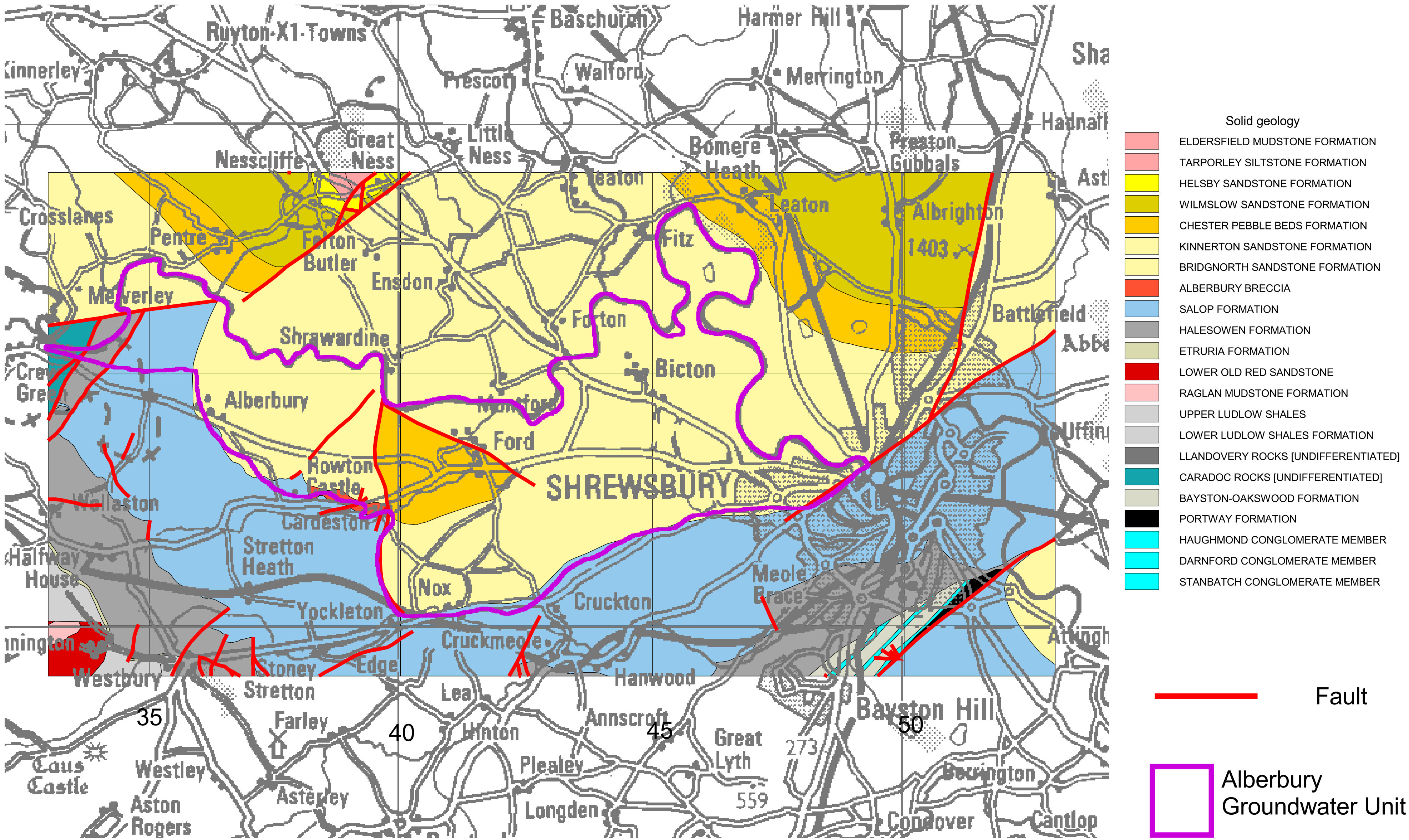



Figure 3. Solid Geology

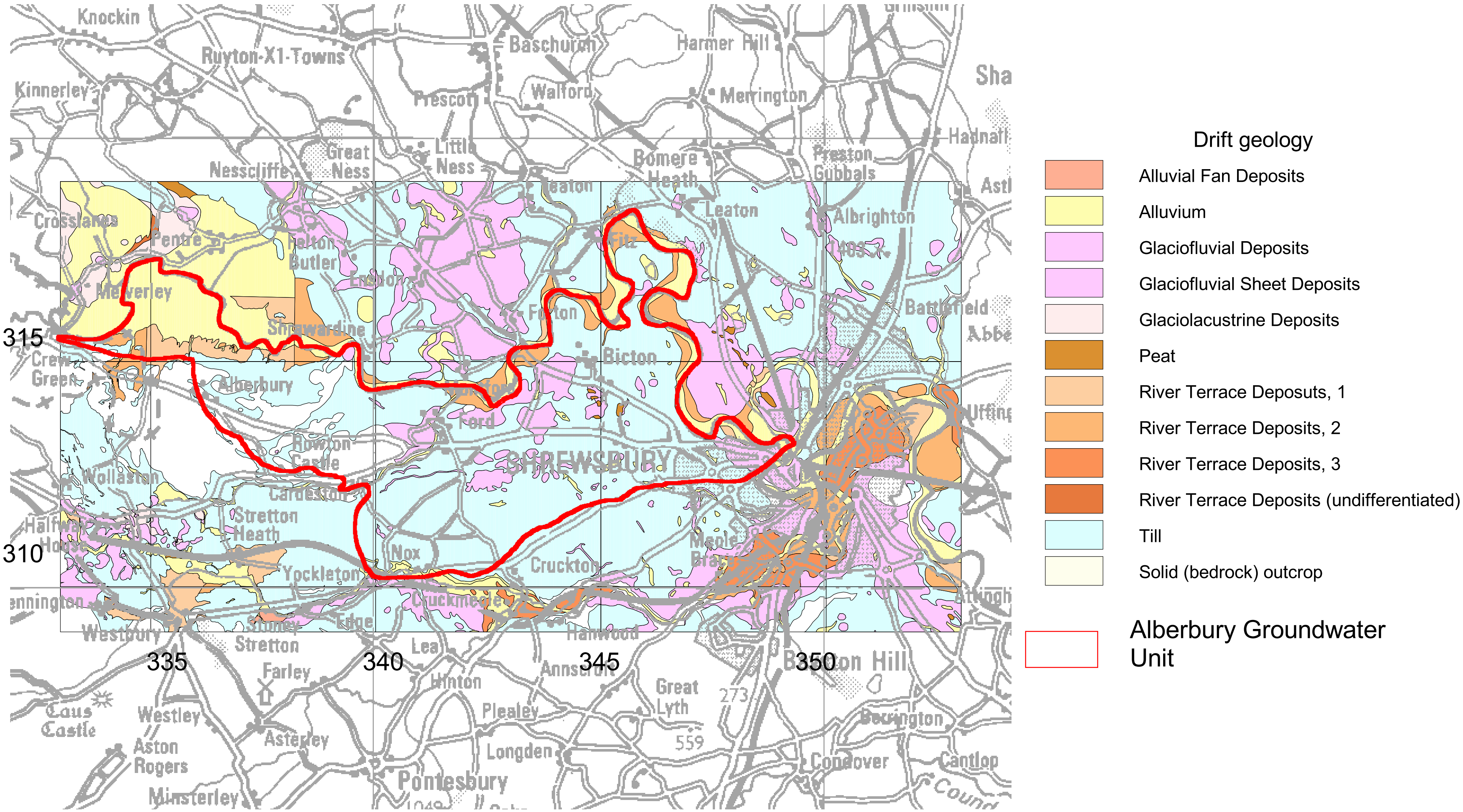



Figure 4. Superficial (drift) deposits

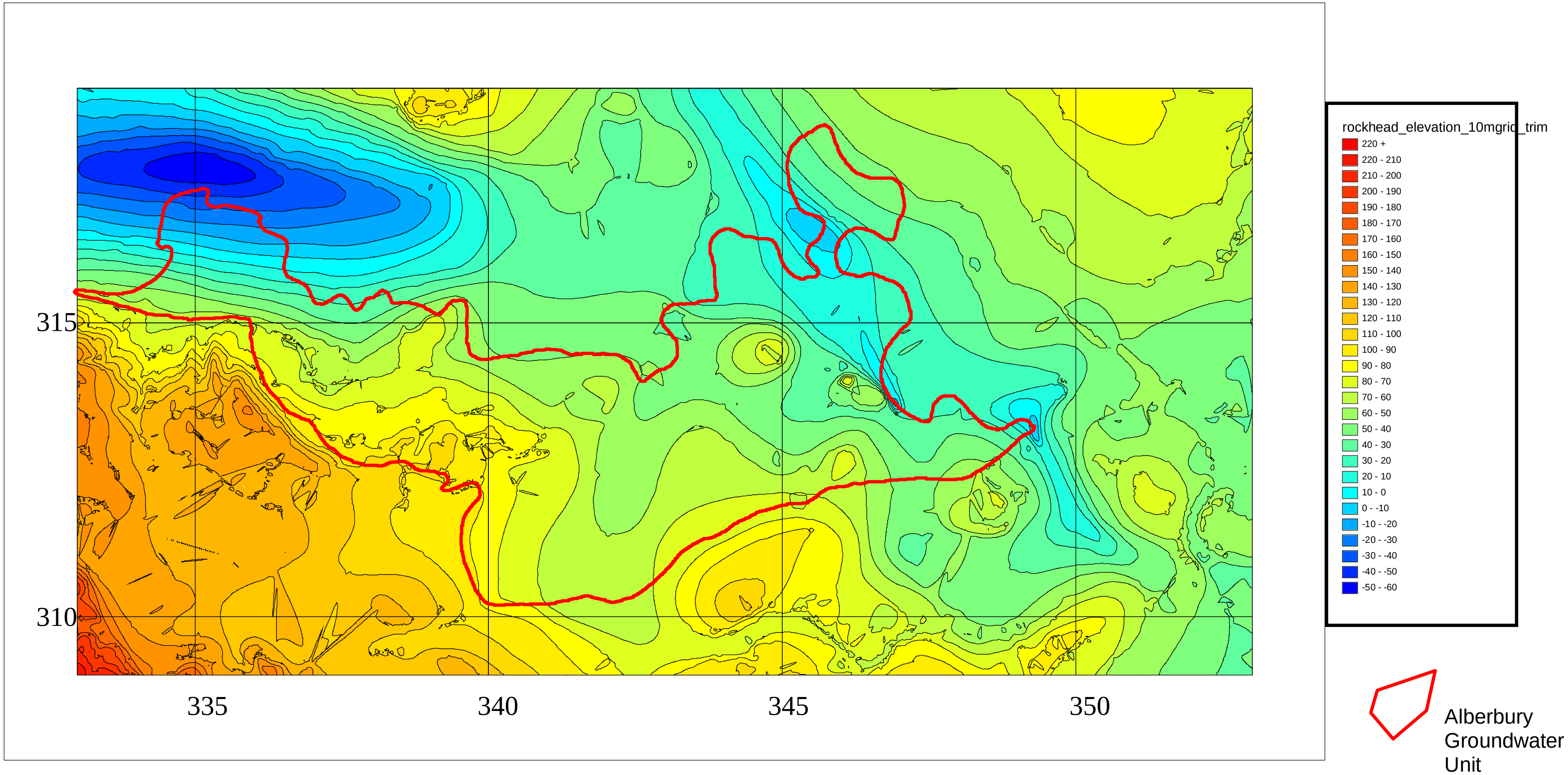



Figure 5. Rockhead elevation

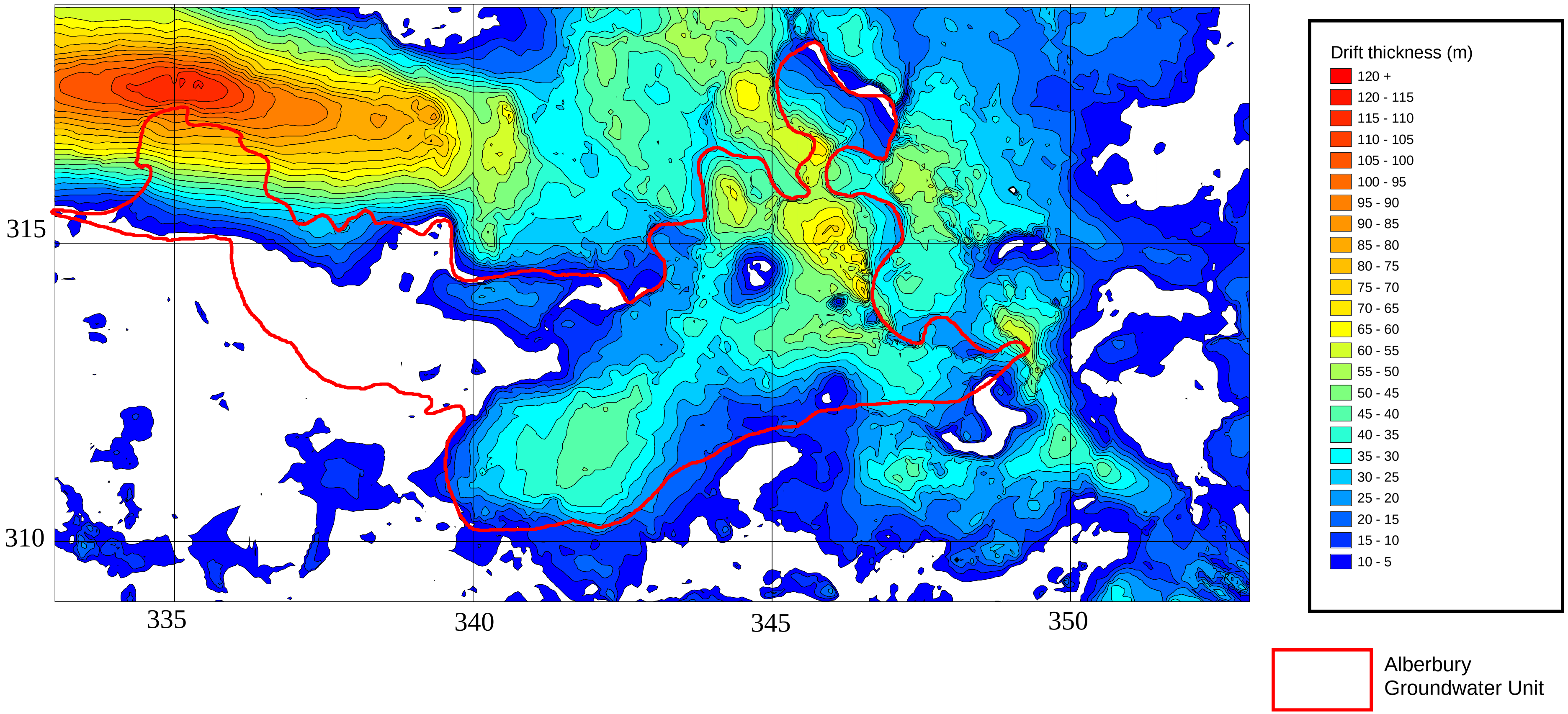



Figure 6. Drift thickness

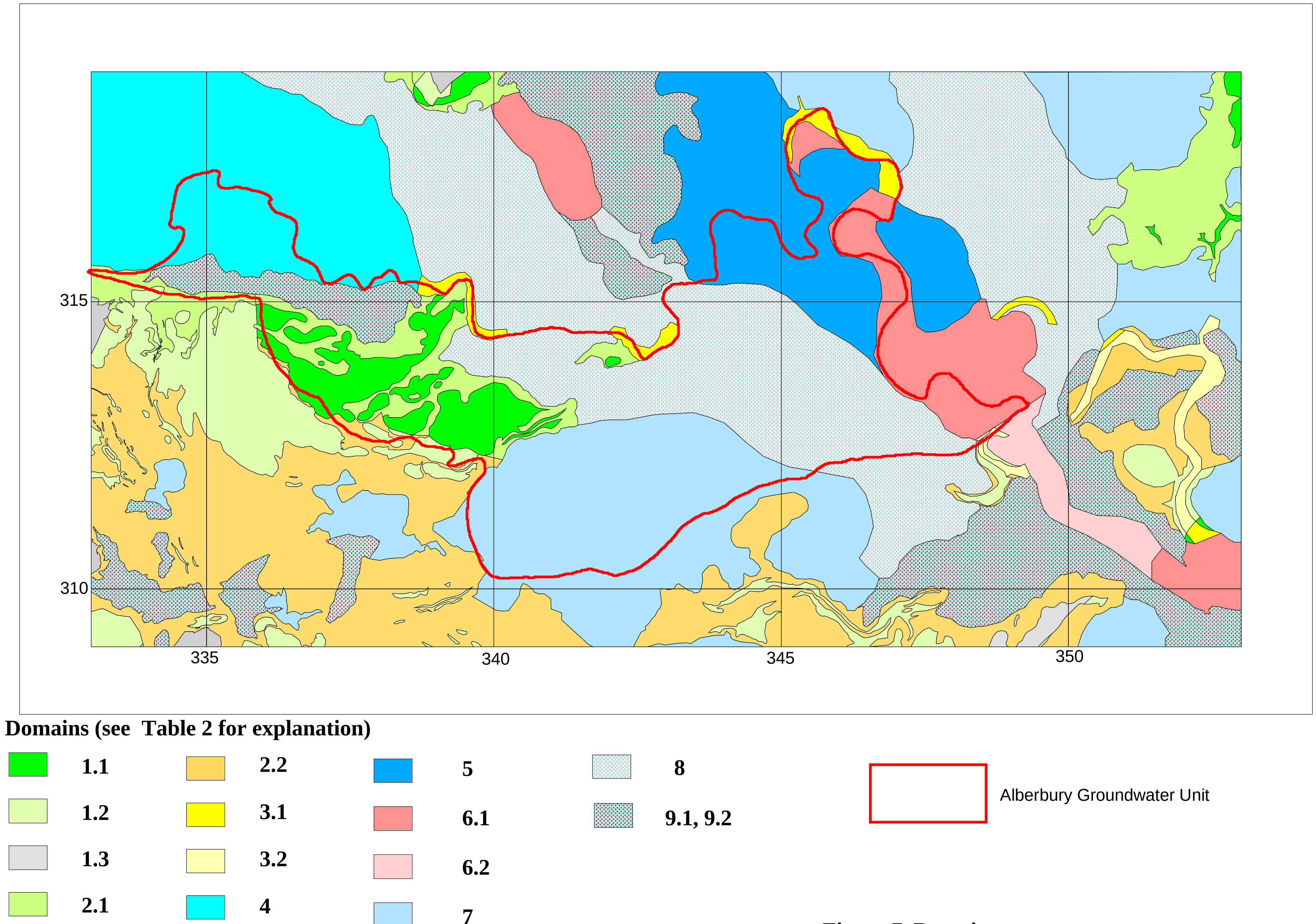
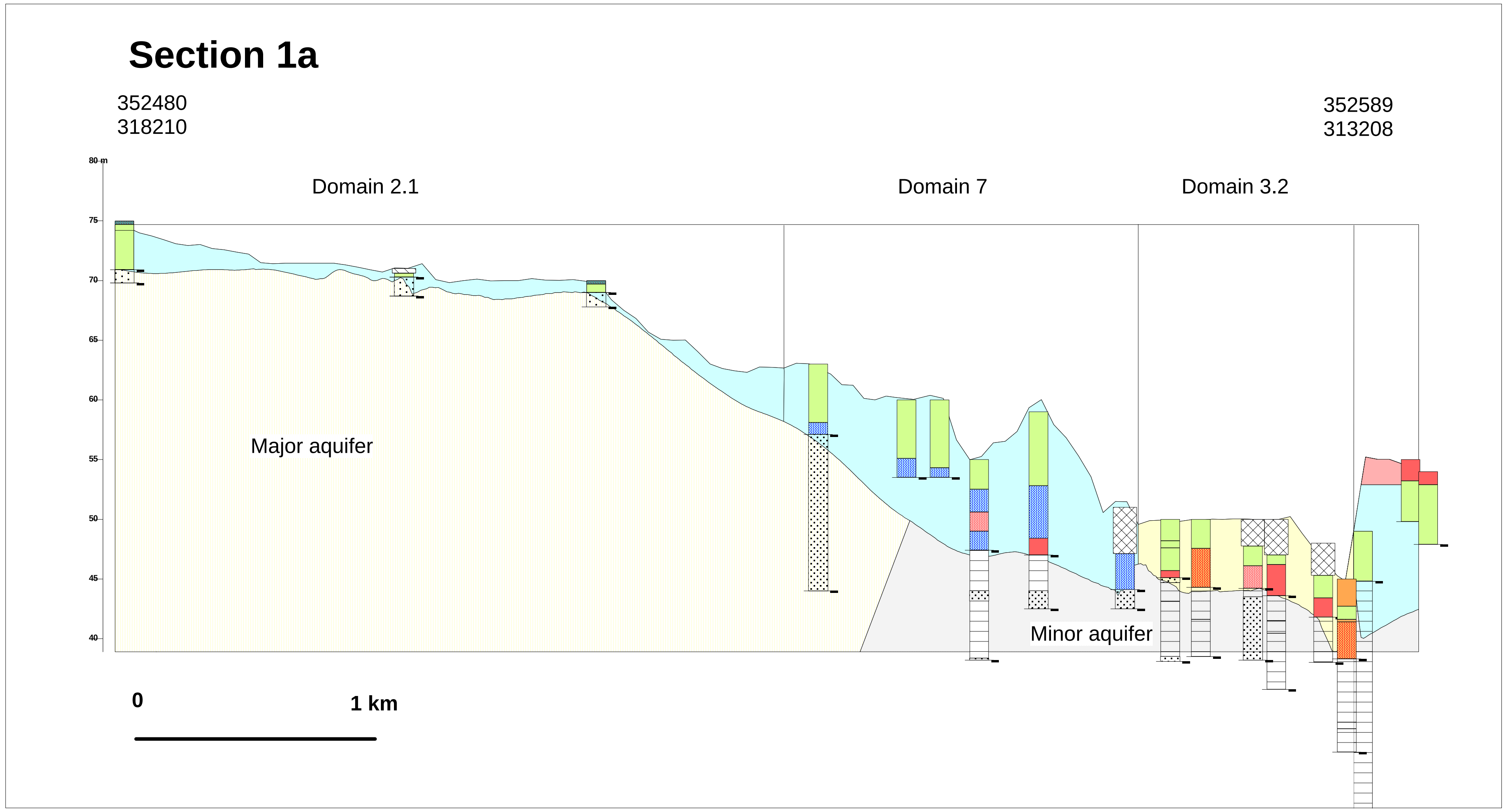
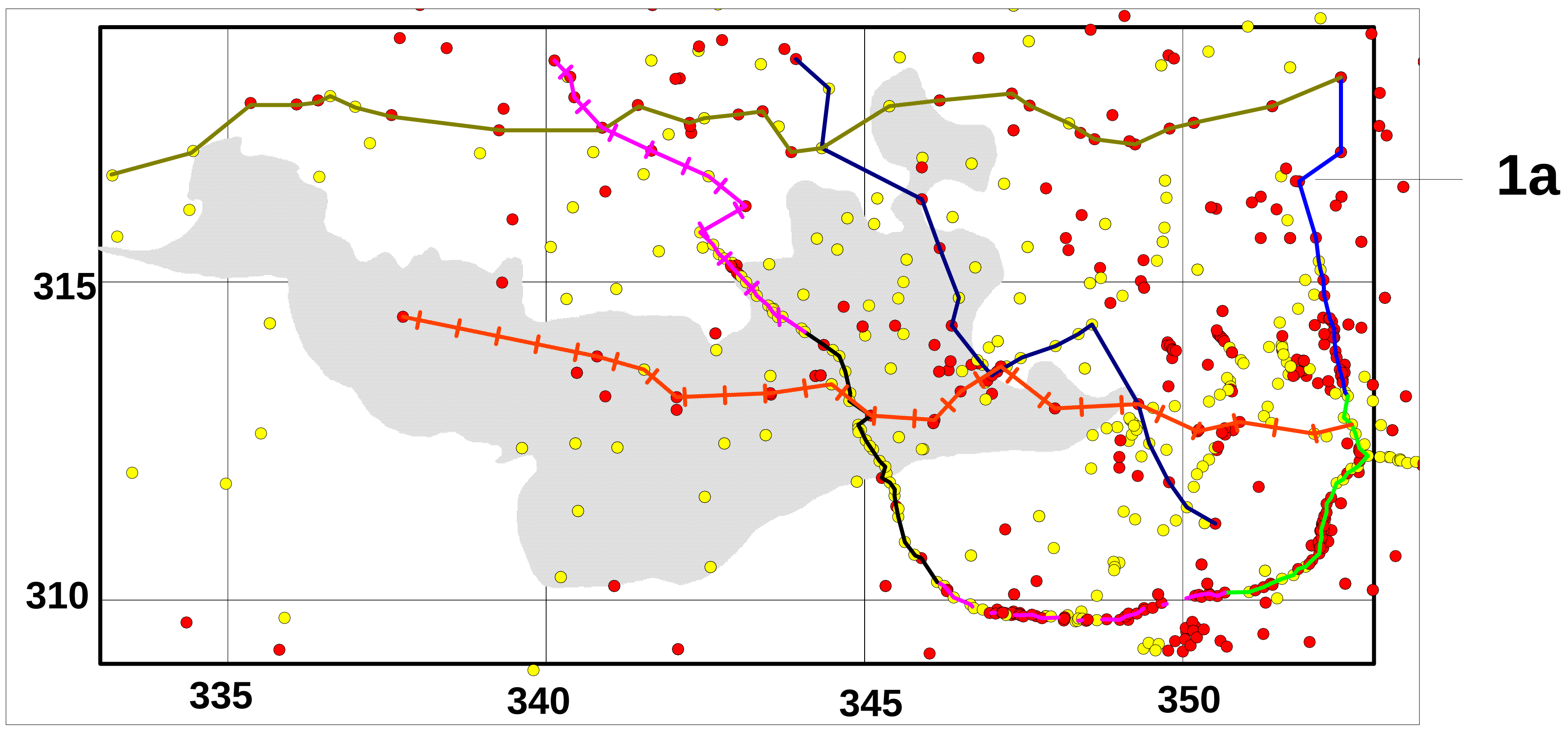



**Figure 7. Domain map**

# Appendix 1   Cross-sections



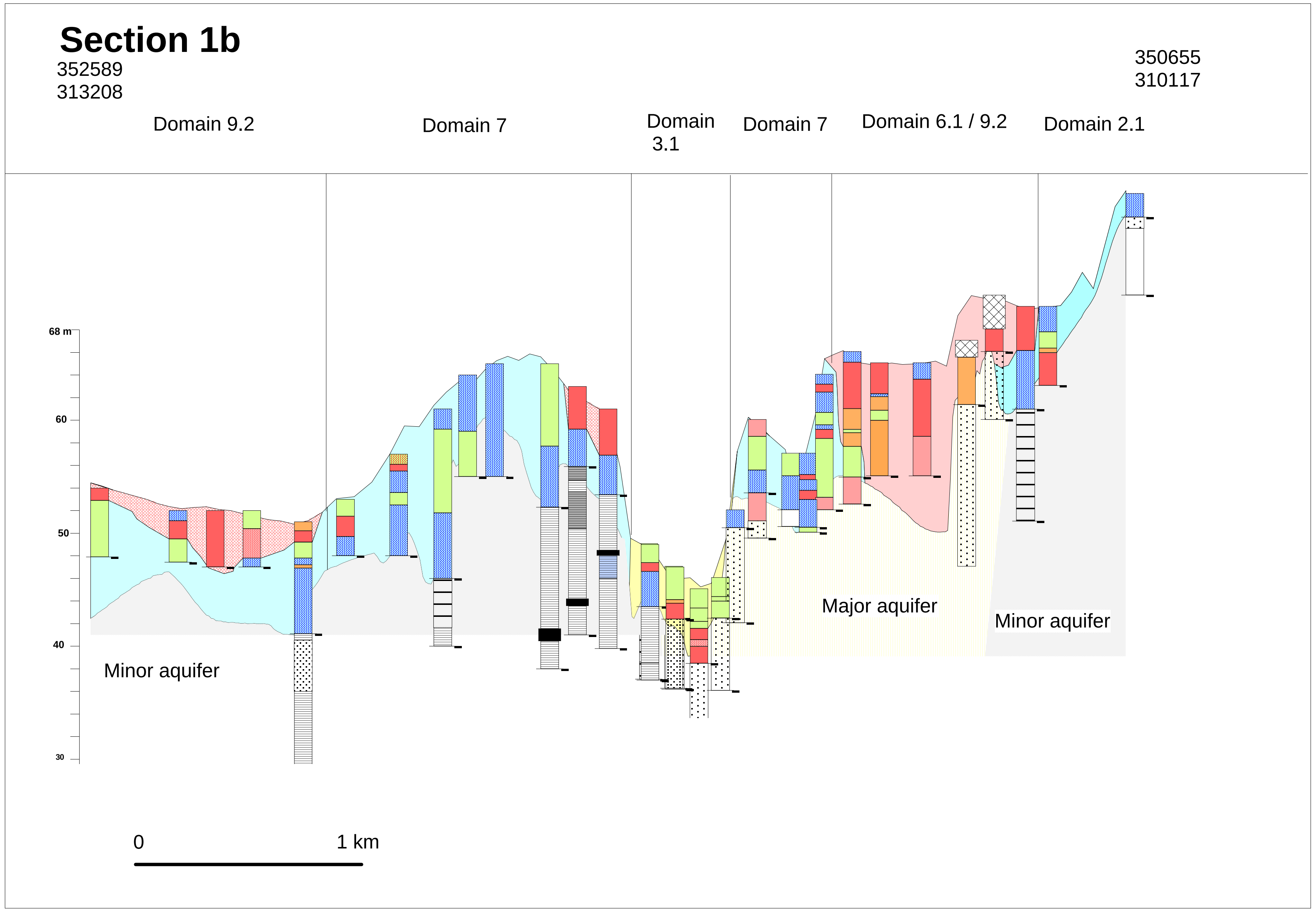



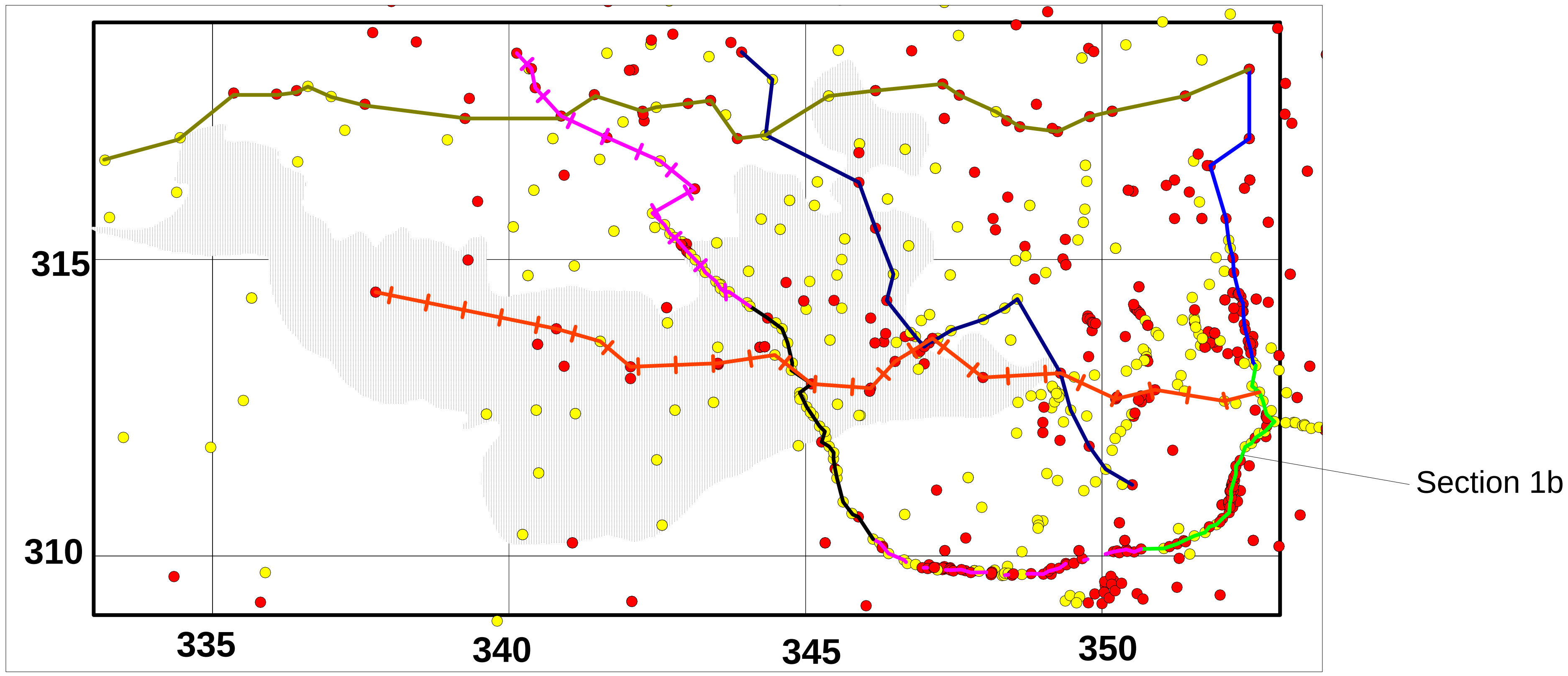

Borehole composition

- Made Ground
- Gravel, Sand and Gravel
- Gravelly sand, Sandy gravel
- Sand
- Silty sand, clayey sand
- Clayey gravel, Silty gravel
- Silt, Clay, Sandy silt, Clayey silt
- Gravelly silt
- Till
- Sandstone
- Mudstone
- Unknown

Major lithostratigraphic units

- Alluvium
- Till, glaciolacustrine deposits
- Glaciofluvial outwash



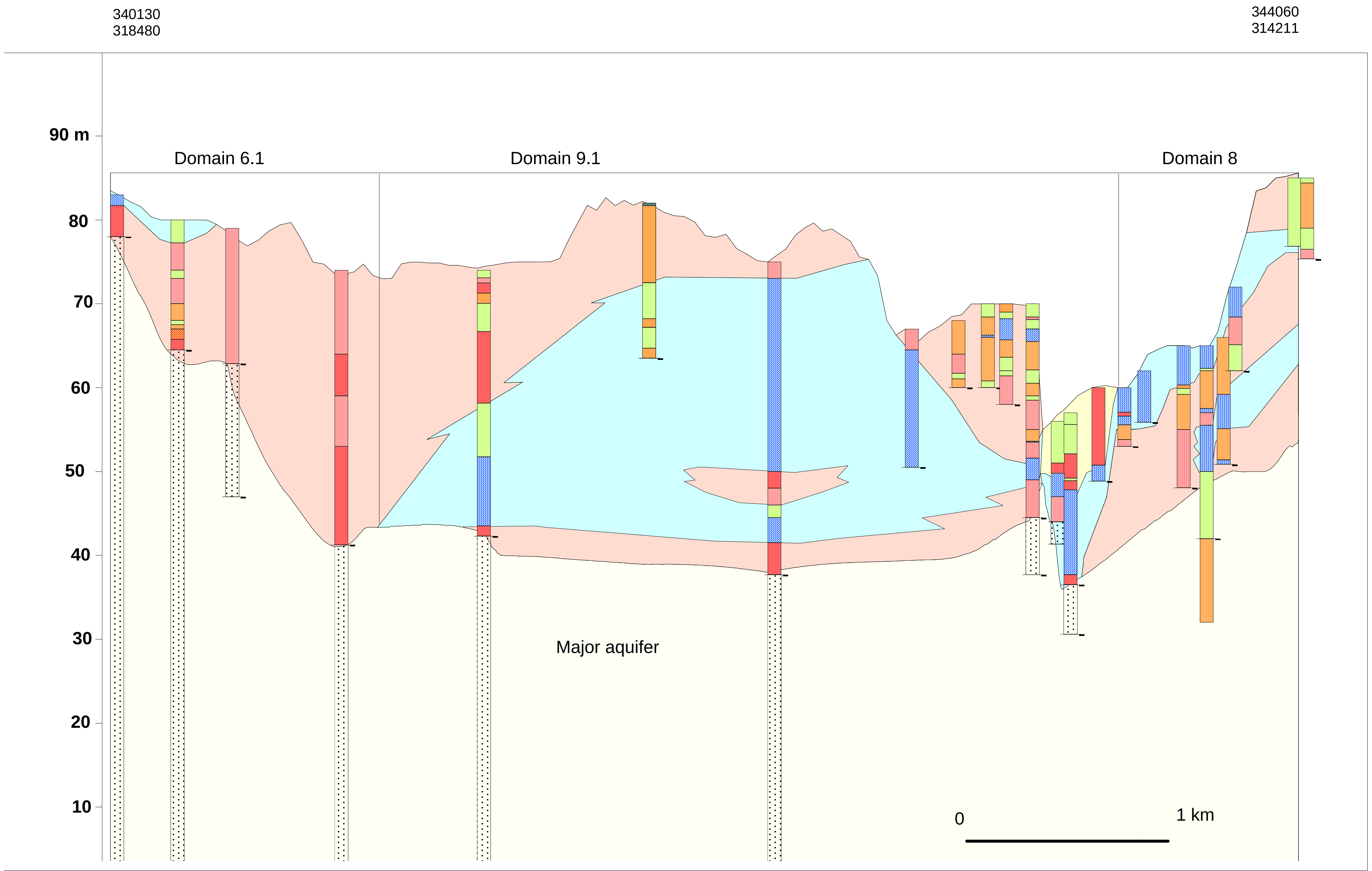

Borehole composition

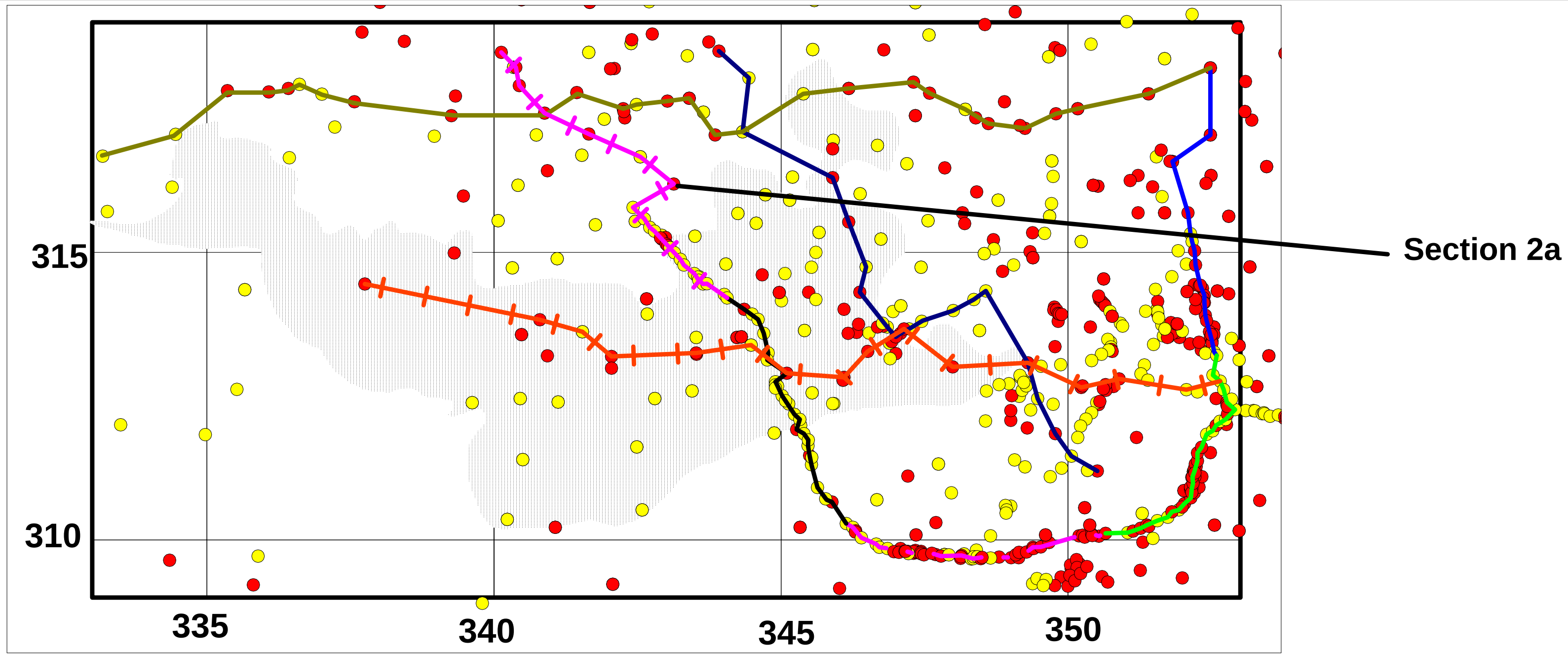
- Made Ground
- Gravel, Sand and Gravel
- Gravelly sand, Sandy gravel
- Sand
- Silty sand, clayey sand
- Clayey gravel, Silty gravel
- Silt, Clay, Sandy silt, Clayey silt
- Gravelly silt
- Till
- Sandstone
- Mudstone
- Unknown

Major lithostratigraphic units

- Till, glaciolacustrine deposits
- Glaciofluvial outwash

# Section 2a



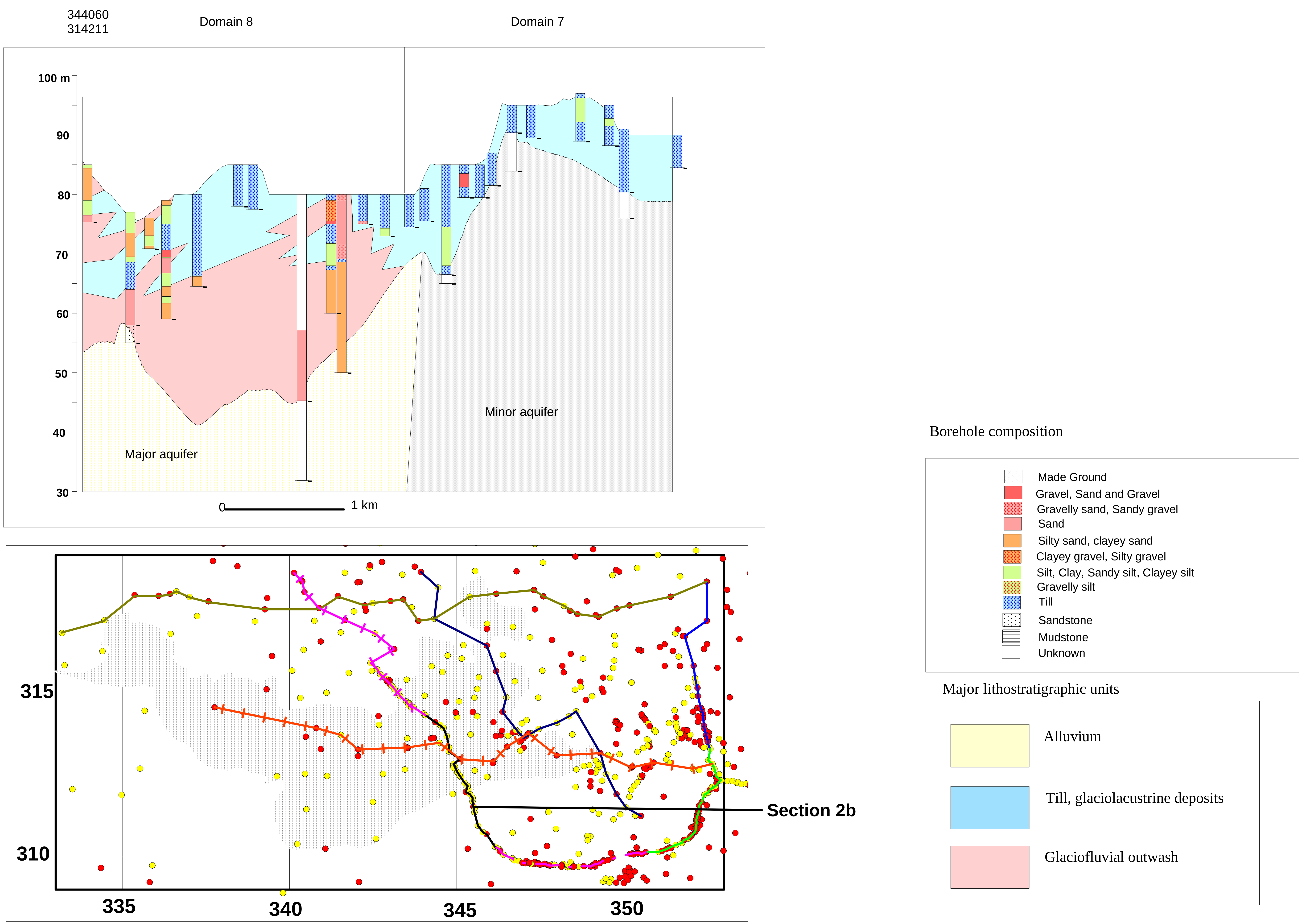

Borehole composition

- Made Ground
- Gravel, Sand and Gravel
- Gravelly sand, Sandy gravel
- Sand
- Silty sand, clayey sand
- Clayey gravel, Silty gravel
- Silt, Clay, Sandy silt, Clayey silt
- Gravelly silt
- Till
- Sandstone
- Mudstone
- Unknown

Major lithostratigraphic units

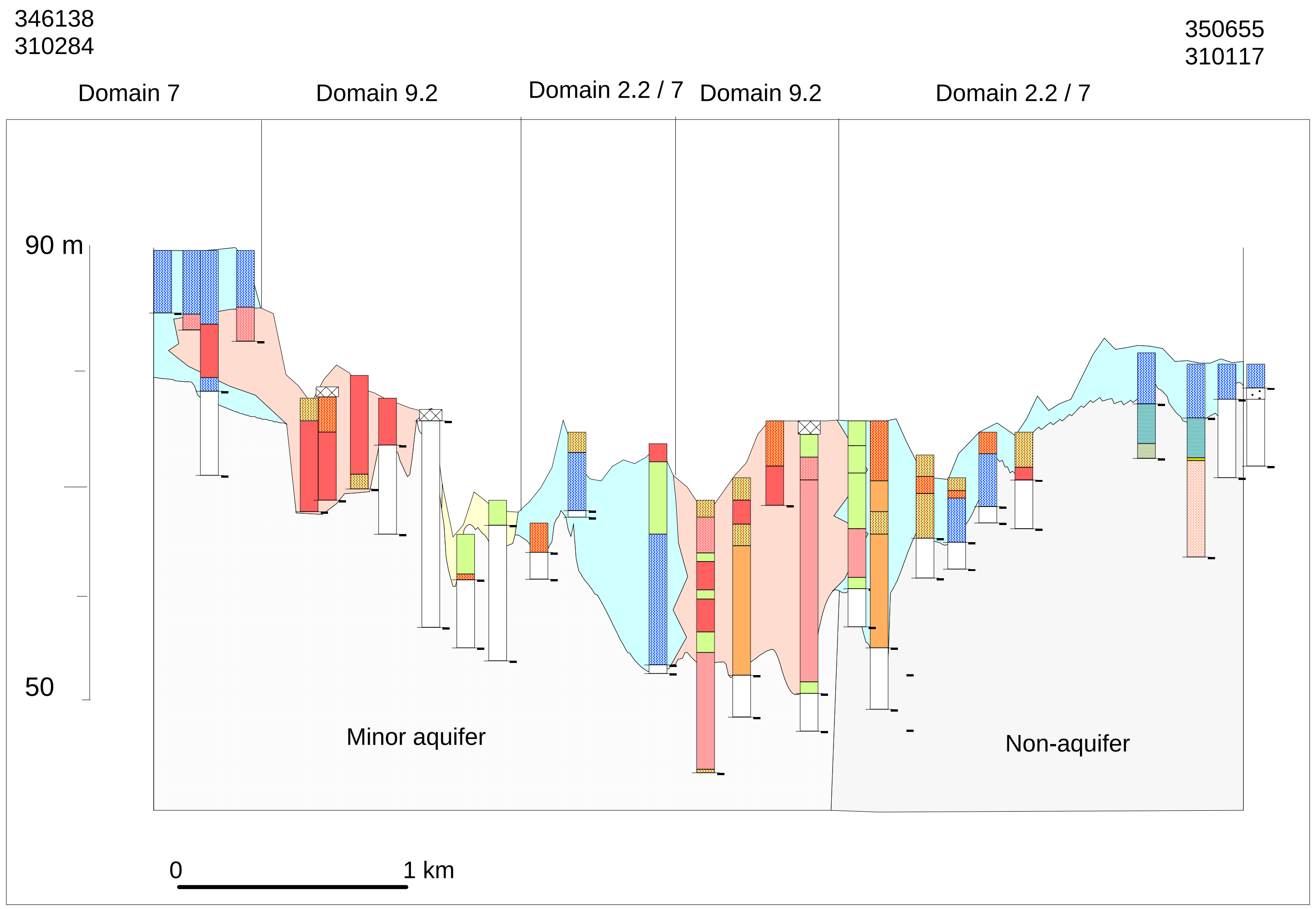
- Alluvium
- Till, glaciolacustrine deposits
- Glaciofluvial outwash

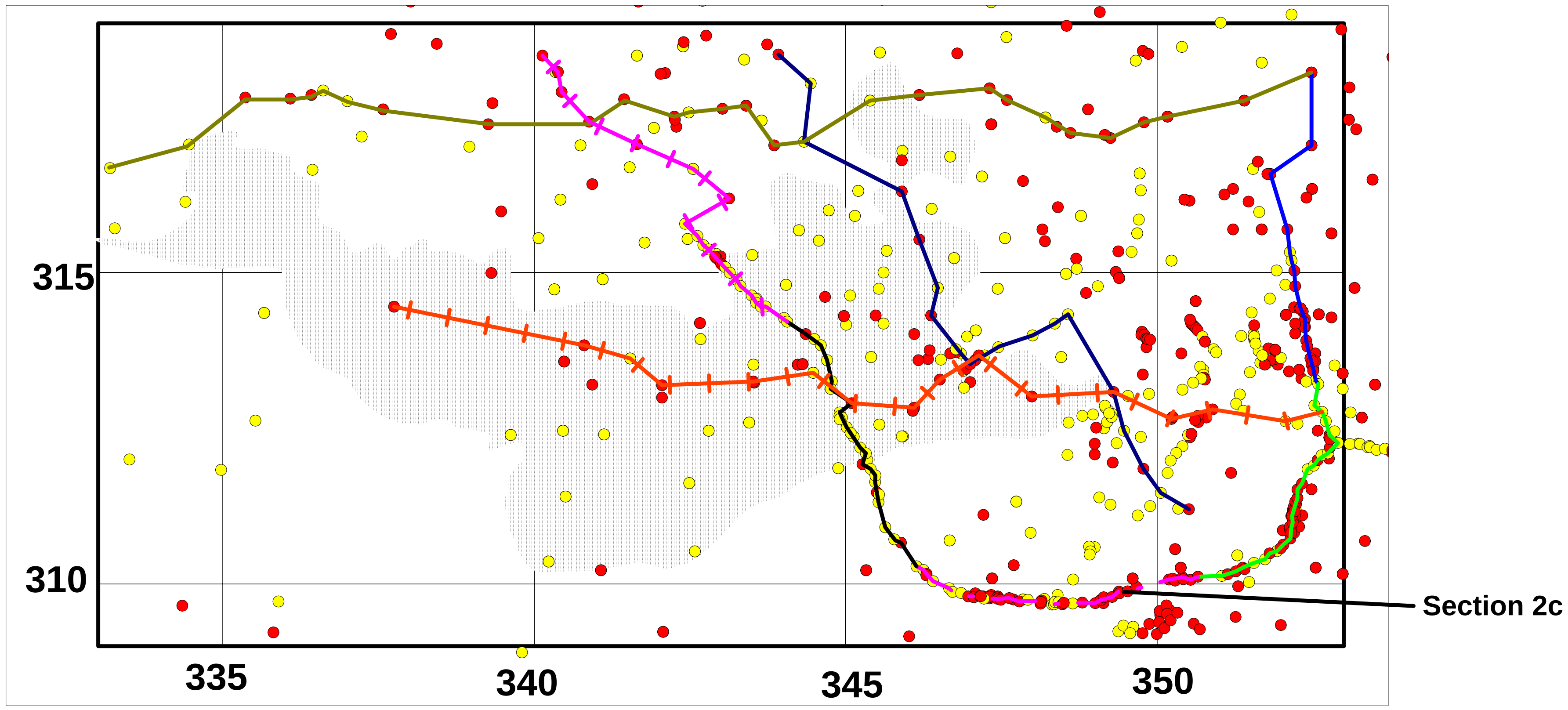
## Section 2b

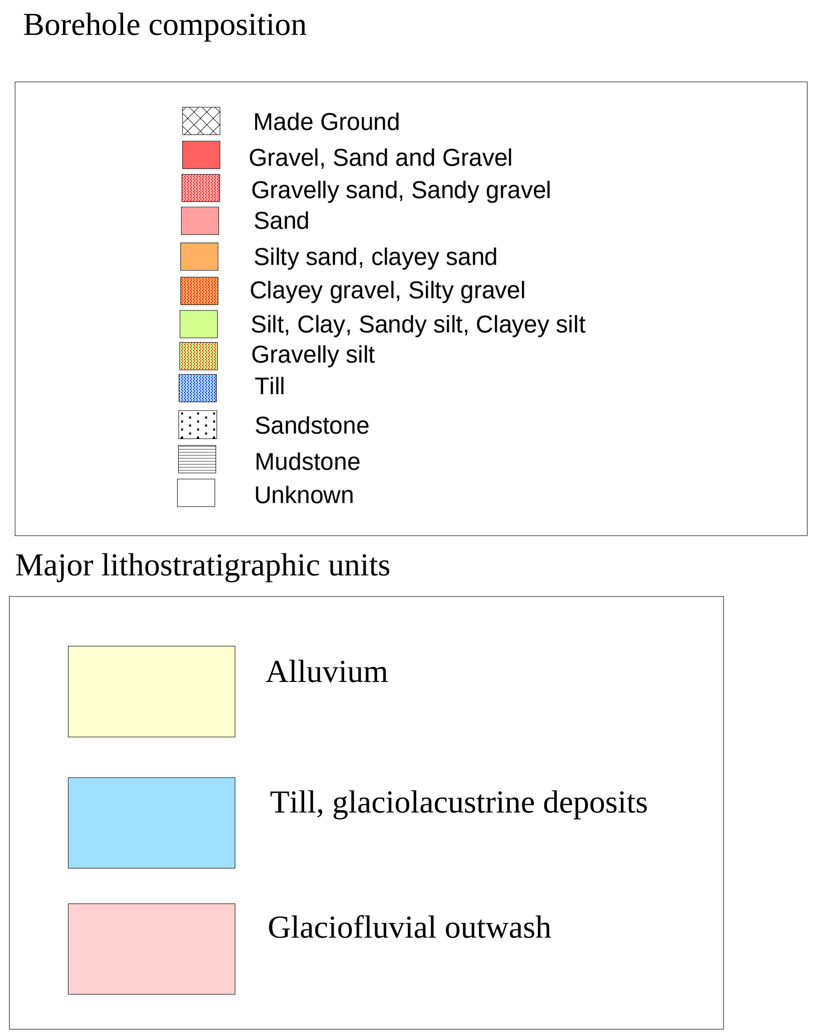


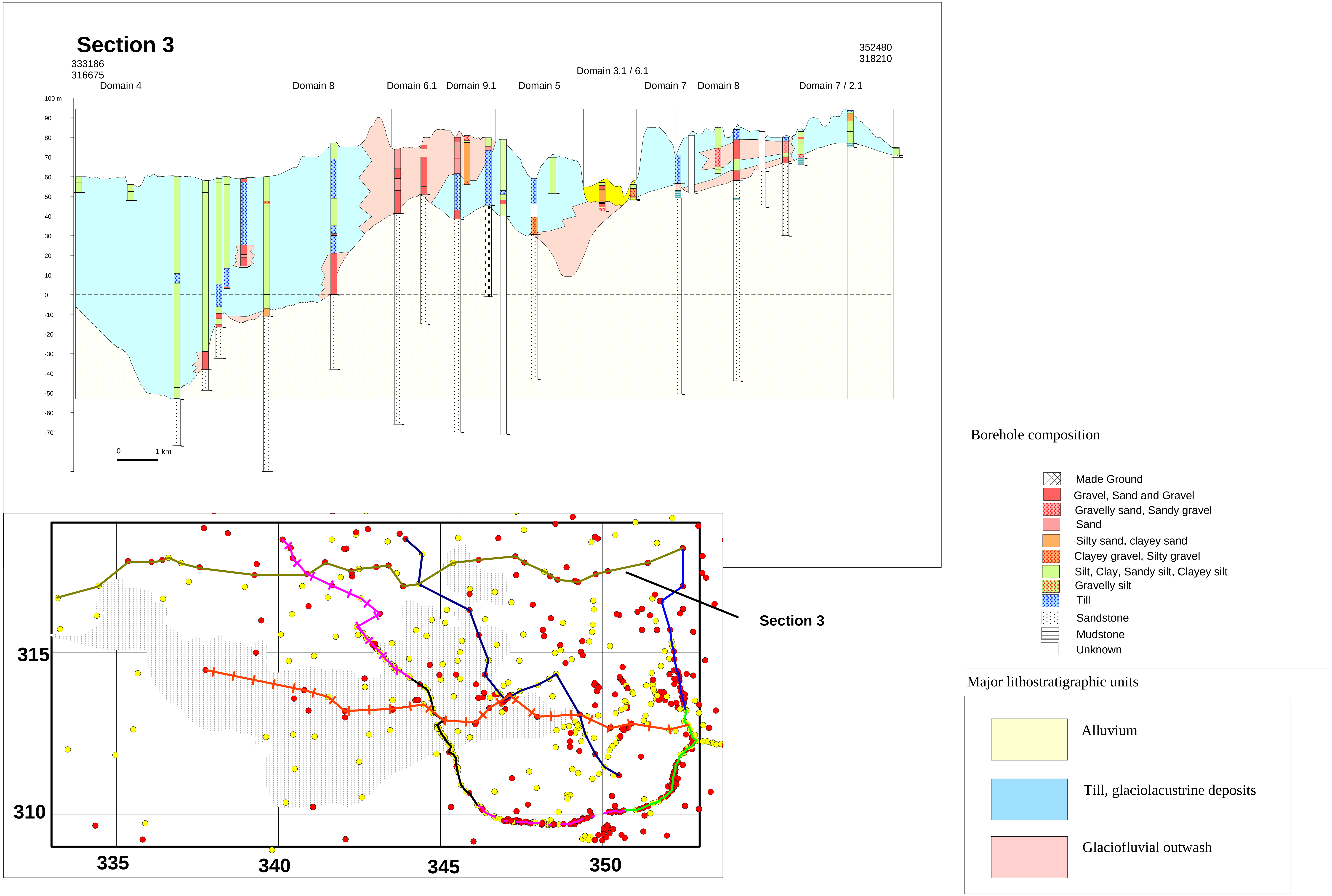
344060
314211
Domain 8
Domain 7
100 m
90
80
70
60
50
40
30
Major aquifer
Minor aquifer
0
1 km
315
310
335
340
345
350
Section 2b
Borehole composition
Made Ground
Gravel, Sand and Gravel
Gravelly sand, Sandy gravel
Sand
Silty sand, clayey sand
Clayey gravel, Silty gravel
Silt, Clay, Sandy silt, Clayey silt
Gravelly silt
Till
Sandstone
Mudstone
Unknown
Major lithostratigraphic units
Alluvium
Till, glaciolacustrine deposits
Glaciofluvial outwash

# Section 2c

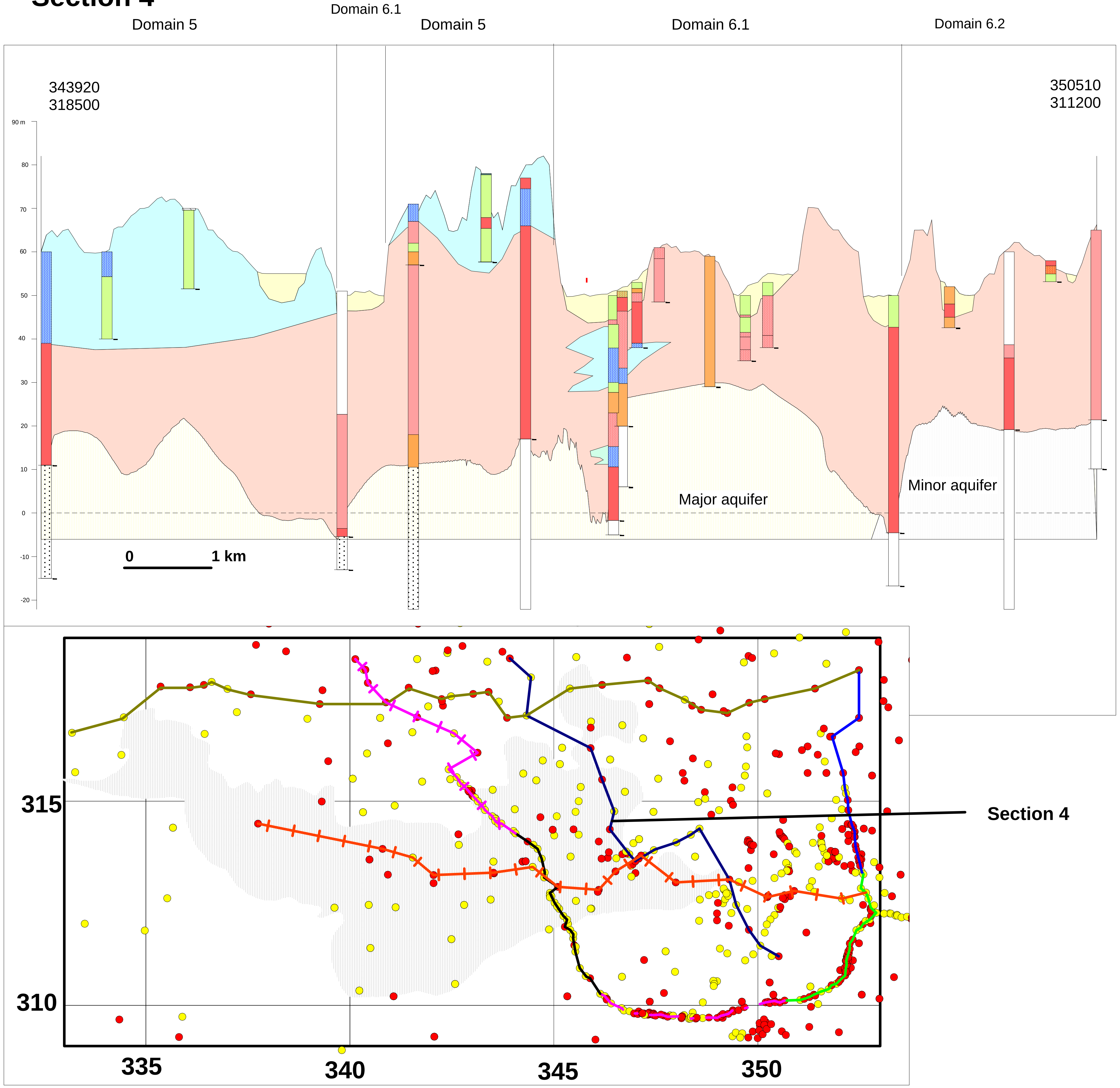

346138
310284
350655
310117
Domain 7
Domain 9.2
Domain 2.2 / 7
Domain 9.2
Domain 2.2 / 7
90 m
50
Minor aquifer
Non-aquifer
0
1 km


315
310
335
340
345
350
Section 2c


Borehole composition
Made Ground
Gravel, Sand and Gravel
Gravelly sand, Sandy gravel
Sand
Silty sand, clayey sand
Clayey gravel, Silty gravel
Silt, Clay, Sandy silt, Clayey silt
Gravelly silt
Till
Sandstone
Mudstone
Unknown
Major lithostratigraphic units
Alluvium
Till, glaciolacustrine deposits
Glaciofluvial outwash


Section 3
333186
316675
352480
318210
Domain 4
Domain 8
Domain 6.1
Domain 9.1
Domain 5
Domain 3.1 / 6.1
Domain 7
Domain 8
Domain 7 / 2.1
100 m
90
80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
0
1 km
315
310
335
340
345
350
Section 3
Borehole composition
Made Ground
Gravel, Sand and Gravel
Gravelly sand, Sandy gravel
Sand
Silty sand, clayey sand
Clayey gravel, Silty gravel
Silt, Clay, Sandy silt, Clayey silt
Gravelly silt
Till
Sandstone
Mudstone
Unknown
Major lithostratigraphic units
Alluvium
Till, glaciolacustrine deposits
Glaciofluvial outwash

# Section 4

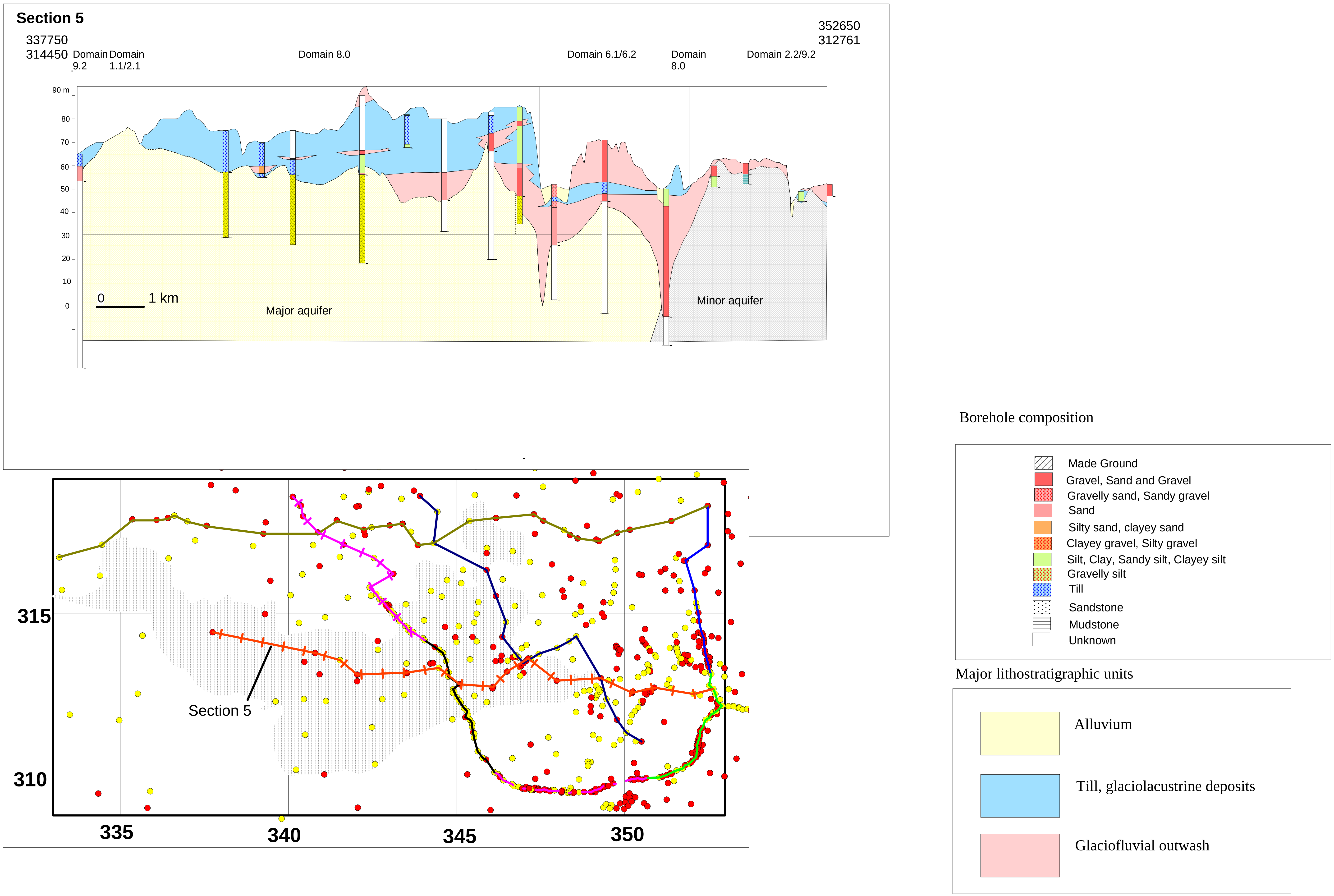



Borehole composition

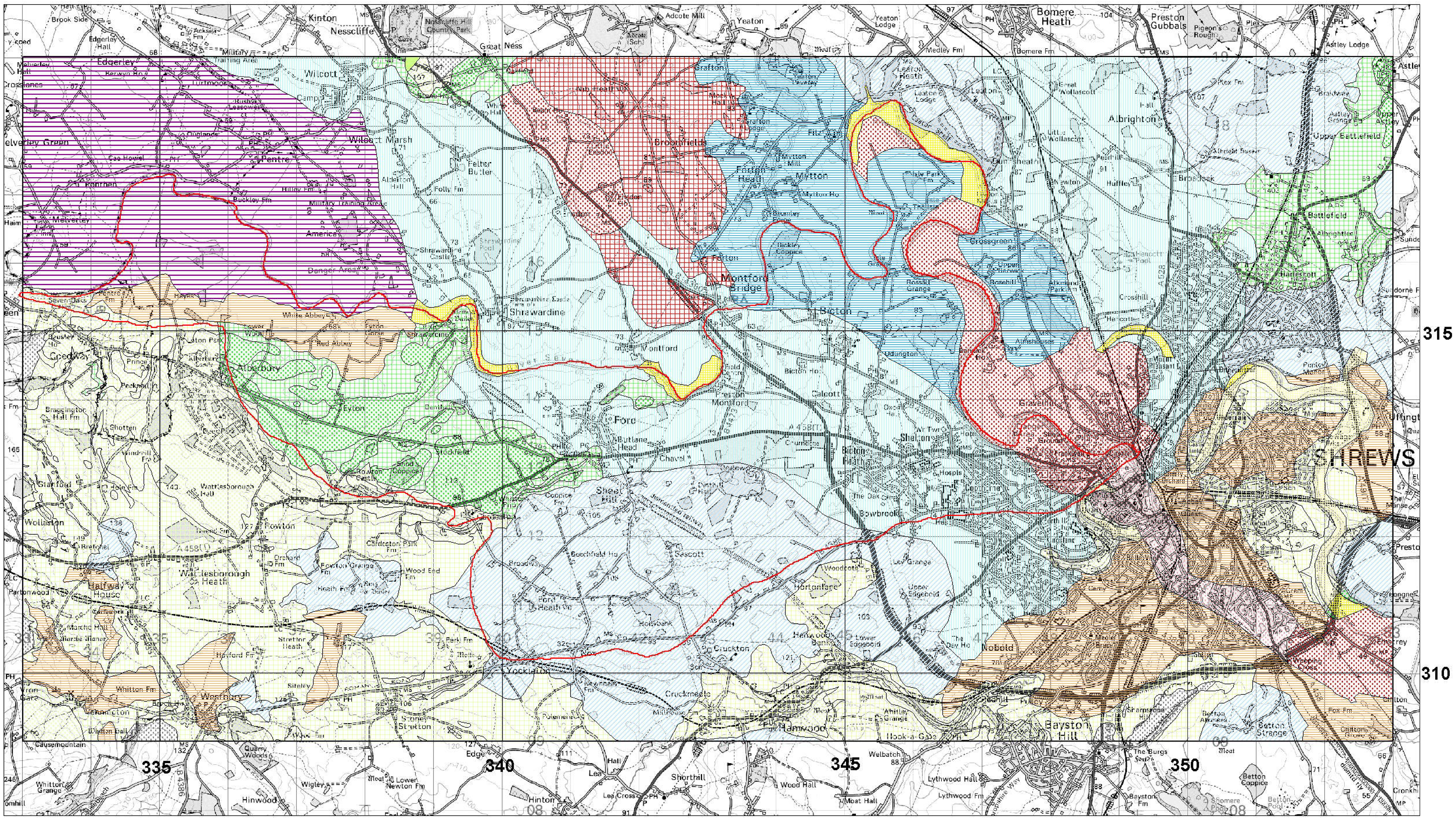
- Made Ground
- Gravel, Sand and Gravel
- Gravelly sand, Sandy gravel
- Sand
- Silty sand, clayey sand
- Clayey gravel, Silty gravel
- Silt, Clay, Sandy silt, Clayey silt
- Gravelly silt
- Till
- Sandstone
- Mudstone
- Unknown

Major lithostratigraphic units

- Alluvium
- Till, glaciolacustrine deposits
- Glaciofluvial outwash


Section 5
337750
314450
352650
312761
Domain 9.2
Domain 1.1/2.1
Domain 8.0
Domain 6.1/6.2
Domain 8.0
Domain 2.2/9.2
90 m
80
70
60
50
40
30
20
10
0
0
1 km
Major aquifer
Minor aquifer
315
310
335
340
345
350
Section 5
Borehole composition
Made Ground
Gravel, Sand and Gravel
Gravelly sand, Sandy gravel
Sand
Silty sand, clayey sand
Clayey gravel, Silty gravel
Silt, Clay, Sandy silt, Clayey silt
Gravelly silt
Till
Sandstone
Mudstone
Unknown
Major lithostratigraphic units
Alluvium
Till, glaciolacustrine deposits
Glaciofluvial outwash

# Domain map




1.1 Major aquifer

1.2 Minor aquifer

1.3 Non-aquifer

2.1 Thin drift on major aquifer

2.2 Thin drift on minor or non-aquifer

3.1 Alluvial deposits on major aquifer

3.2 Alluvial deposits on minor or non-aquifer

4. Buried channel (Glaciolacustrine-till)

5. Buried channel (Till-glaciofluvial outwash)

6.1 Buried channel (Glaciogluvial outwash on major aquifer)

6.2 Buried channel (Glaciofluvial outwash on minor aquifer)

7. Till (Morainic ridge and till plain)

8. Ice-contact

9.1 Outwash on thick till

9.2 Outwash (valley train and terrace deposits)

# Appendix 2  Borehole listing

# Abbreviations:

*Drift thickness*:

negative values indicate borehole terminated in drift (also indicated by TD in Rockhead type field)

positive values indicate full thickness of drift proved (also indicated by RH in Rockhead type field)

*OD:*

Ordnance Datum (m) borehole start point (Calculated from Digital Terrain Model)

| Quarter sheet | Number | Suffix | Easting | Northing | Drift thickness | Rockhead_type | OD |
|---|---|---|---|---|---|---|---|
| SJ30NE | 2 | . | 335810 | 309220 | 10.97 | RH | 129.29 |
| SJ30NE | 5 | . | 335890 | 309720 | -51.82 | TD | 126.327 |
| SJ30NE | 7 | . | 339800 | 308900 | -64.01 | TD | 124.944 |
| SJ30NW | 3 | . | 334350 | 309650 | 15.24 | RH | 146.023 |
| SJ31NE | 4 | . | 337700 | 318830 | 12.19 | RH | 79.1448 |
| SJ31NE | 8 | . | 336080 | 317790 | 96.04 | RH | 58.4471 |
| SJ31NE | 9 | . | 337200 | 319450 | 0 | RH | 80.6401 |
| SJ31NE | 10 | . | 337000 | 317750 | -44.5 | TD | 58.9895 |
| SJ31NE | 12 | . | 336420 | 317850 | 75.59 | RH | 59.2269 |
| SJ31NE | 13 | . | 336610 | 317920 | -56.99 | TD | 60.0049 |
| SJ31NE | 15 | . | 337230 | 317180 | -42.67 | TD | 59.9643 |
| SJ31NE | 16 | . | 335360 | 317810 | 113.08 | RH | 60.4764 |
| SJ31NE | 17 | . | 337280 | 319500 | 10.66 | RH | 80.3992 |
| SJ31NE | 18 | . | 337570 | 317620 | 71 | RH | 59.9511 |
| SJ31NE | 20 | . | 338960 | 317020 | -41.77 | TD | 69.4384 |
| SJ31NE | 21 | . | 339470 | 315980 | 57.93 | RH | 74.8561 |
| SJ31NE | 30 | . | 336438 | 316648 | -8.45 | TD | 56.5379 |
| SJ31NE | 31 | . | 339260 | 317380 | 77 | RH | 76.8191 |
| SJ31NE | 32 | . | 339330 | 317720 | 46 | RH | 79.4051 |
| SJ31NE | 35 | . | 338436 | 318671 | 24.1 | RH | 83.8194 |
| SJ31NE | 36 | . | 338016 | 319350 | 12.19 | RH | 74.8729 |
| SJ31NW | 17 | . | 333265 | 315710 | -8.05 | TD | 59.9751 |
| SJ31NW | 18 | . | 334396 | 316133 | -8.6 | TD | 55.7262 |
| SJ31NW | 19 | . | 334455 | 317056 | -8.15 | TD | 55.8715 |
| SJ31NW | 27 | . | 333186 | 316675 | -8.05 | TD | 59.9845 |
| SJ31SE | 2 | . | 339620 | 312390 | -60.96 | TD | 94.9839 |
| SJ31SE | 2 | . | 339620 | 312390 | -60.96 | TD | 94.9839 |
| SJ31SE | 3 | . | 335660 | 314350 | -85.34 | TD | 94.6877 |
| SJ31SE | 3 | . | 335660 | 314350 | -85.3 | TD | 94.6877 |
| SJ31SE | 4 | . | 335520 | 312620 | -60.65 | TD | 138.182 |
| SJ31SE | 5 | . | 337750 | 314450 | 11.58 | RH | 64.9985 |
| SJ31SE | 6 | . | 339310 | 314990 | 39.02 | RH | 69.578 |
| SJ31SW | 4 | . | 334970 | 311830 | -20.72 | TD | 129.531 |
| SJ31SW | 7 | . | 333500 | 312000 | -80.47 | TD | 141.296 |
| SJ40NE | 1 | . | 347080 | 309850 | 3.5 | RH | 77.5532 |
| SJ40NE | 2 | . | 347210 | 309800 | 2 | RH | 74.7553 |
| SJ40NE | 3 | . | 347340 | 309820 | 3.4 | RH | 65.4864 |
| SJ40NE | 4 | . | 347440 | 309800 | 2 | RH | 66.2743 |
| SJ40NE | 5 | . | 348190 | 309760 | -18 | TD | 70.7706 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SJ40NE | 6 . | 348800 | 309700 | 24 | RH | 74.995 |
| SJ40NE | 7 . | 349010 | 309690 | 14.8 | RH | 75.0087 |
| SJ40NE | 8 . | 349140 | 309690 | 11.8 | RH | 74.9986 |
| SJ40NE | 14 . | 346020 | 309160 | 20.72 | RH | 88.9128 |
| SJ40NE | 17 . | 349460 | 309330 | -66.07 | TD | 92.2519 |
| SJ40NE | 18 . | 349620 | 309310 | -110 | TD | 94.222 |
| SJ40NE | 19 . | 349570 | 309210 | -107.38 | TD | 98.3662 |
| SJ40NE | 20 . | 349380 | 309240 | -51.2 | TD | 93.3697 |
| SJ40NE | 23 . | 348480 | 309680 | -20.5 | TD | 70.056 |
| SJ40NE | 25 . | 347430 | 309780 | -30 | TD | 67.2174 |
| SJ40NE | 26 . | 347694 | 309749 | 6.2 | RH | 69.0521 |
| SJ40NE | 27 . | 347846 | 309749 | 7.9 | RH | 71.2154 |
| SJ40NE | 28 . | 347849 | 309749 | 9 | RH | 71.1729 |
| SJ40NE | 29 . | 347849 | 309749 | -10 | TD | 71.1729 |
| SJ40NE | 30 . | 348144 | 309730 | 19.5 | RH | 72.5294 |
| SJ40NE | 31 . | 348133 | 309707 | 18.6 | RH | 73.4061 |
| SJ40NE | 32 . | 348134 | 309709 | 20.5 | RH | 73.3263 |
| SJ40NE | 33 . | 348128 | 309682 | 19.1 | RH | 74.3304 |
| SJ40NE | 34 . | 348403 | 309822 | -10.05 | TD | 65.5361 |
| SJ40NE | 35 . | 348649 | 309685 | -7.45 | TD | 74.9707 |
| SJ40NE | 36 . | 348134 | 309709 | 8 | RH | 73.3263 |
| SJ40NE | 54 . | 346660 | 309931 | -10 | TD | 77.1186 |
| SJ40NE | 55 . | 346715 | 309873 | -10 | TD | 77.7142 |
| SJ40NE | 56 . | 346855 | 309853 | -10 | TD | 79.2405 |
| SJ40NE | 57 . | 346966 | 309799 | 4.15 | RH | 77.2588 |
| SJ40NE | 58 . | 347057 | 309788 | 4 | RH | 76.1333 |
| SJ40NE | 59 . | 347157 | 309805 | 1 | RH | 76.159 |
| SJ40NE | 60 . | 347172 | 309803 | 2 | RH | 76.1636 |
| SJ40NE | 61 . | 347306 | 309768 | 4 | RH | 64.8655 |
| SJ40NE | 62 . | 347366 | 309780 | 0.9 | RH | 66.1032 |
| SJ40NE | 63 . | 347329 | 309793 | 3.7 | RH | 64.9493 |
| SJ40NE | 64 . | 347311 | 309796 | 3.3 | RH | 64.8288 |
| SJ40NE | 65 . | 347434 | 309782 | 2.3 | RH | 67.068 |
| SJ40NE | 66 . | 347447 | 309760 | 2.2 | RH | 67.6728 |
| SJ40NE | 67 . | 347491 | 309744 | 2.2 | RH | 67.6214 |
| SJ40NE | 68 . | 347628 | 309770 | 2.6 | RH | 66.4619 |
| SJ40NE | 69 . | 347788 | 309718 | 6.9 | RH | 73.8076 |
| SJ40NE | 70 . | 347924 | 309743 | -8.2 | TD | 69.8599 |
| SJ40NE | 71 . | 348315 | 309669 | -15.15 | TD | 68.624 |
| SJ40NE | 72 . | 348346 | 309674 | -24 | TD | 68.2772 |
| SJ40NE | 73 . | 348361 | 309710 | -7 | TD | 67.0772 |
| SJ40NE | 74 . | 348417 | 309706 | -15 | TD | 67.7743 |
| SJ40NE | 75 . | 348481 | 309675 | 15.5 | RH | 70.1817 |
| SJ40NE | 76 . | 348503 | 309696 | 17.4 | RH | 70.3544 |
| SJ40NE | 77 . | 349093 | 309742 | 20 | RH | 74.9884 |
| SJ40NE | 78 . | 349144 | 309788 | 22.3 | RH | 74.988 |
| SJ40NE | 79 . | 349277 | 309791 | 7.35 | RH | 72.191 |
| SJ40NE | 80 . | 349389 | 309874 | 5.7 | RH | 69.8499 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SJ40NE | 81 . | 349398 | 309849 | 5.74 | RH | 69.8559 |
| SJ40NE | 82 . | 349526 | 309879 | 6.55 | RH | 74.2937 |
| SJ40NE | 83 . | 349666 | 309954 | 4.2 | RH | 74.0297 |
| SJ40NE | 85 . | 347221 | 309765 | -10.5 | TD | 68.0224 |
| SJ40NE | 107 . | 349875 | 309357 | 18.3 | RH | 87.9231 |
| SJ40NE | 108 . | 349767 | 309208 | 6.5 | RH | 83.4122 |
| SJ40NE | 113 . | 349996 | 309194 | 7 | RH | 78.3357 |
| SJ40NW | 5 . | 342070 | 309230 | 6.4 | TD | 90.1529 |
| SJ41NE | 8 . | 348160 | 315690 | 36.59 | RH | 75.2421 |
| SJ41NE | 9 . | 345610 | 315000 | -57.62 | TD | 78.456 |
| SJ41NE | 10 . | 348700 | 315220 | 36.27 | RH | 82.356 |
| SJ41NE | 11 . | 349770 | 318560 | 23.93 | RH | 103.526 |
| SJ41NE | 12 . | 347590 | 317770 | 29.26 | RH | 80.9644 |
| SJ41NE | 13 . | 348890 | 317620 | 24.08 | RH | 83.9337 |
| SJ41NE | 14 . | 349250 | 317160 | 20.12 | RH | 83.1994 |
| SJ41NE | 15 . | 345320 | 319440 | 27.43 | RH | 89.8711 |
| SJ41NE | 16 . | 346790 | 318520 | 29.26 | RH | 89.1155 |
| SJ41NE | 17 . | 347510 | 319480 | 15.24 | RH | 95.9397 |
| SJ41NE | 20 . | 349790 | 317410 | 13 | RH | 80.2789 |
| SJ41NE | 21 . | 348390 | 317340 | 25 | RH | 81.0285 |
| SJ41NE | 22 . | 345580 | 319380 | -18 | TD | 88.3713 |
| SJ41NE | 22 . | 345580 | 319380 | -18 | TD | 88.3713 |
| SJ41NE | 23 . | 345550 | 318530 | -18 | TD | 78.2241 |
| SJ41NE | 23 . | 345550 | 318530 | -18 | TD | 78.2241 |
| SJ41NE | 24 . | 345390 | 317760 | -14.5 | TD | 57.263 |
| SJ41NE | 24 . | 345390 | 317760 | -14.5 | TD | 57.263 |
| SJ41NE | 25 . | 345910 | 316950 | -25 | TD | 65.8576 |
| SJ41NE | 25 . | 345910 | 316950 | -25 | TD | 65.8576 |
| SJ41NE | 26 . | 345200 | 316310 | -22 | TD | 55.169 |
| SJ41NE | 26 . | 345200 | 316310 | -22 | TD | 55.169 |
| SJ41NE | 27 . | 345150 | 315910 | -16 | TD | 54.9741 |
| SJ41NE | 27 . | 345150 | 315910 | -16 | TD | 54.9741 |
| SJ41NE | 28 . | 345660 | 315350 | -18 | TD | 76.7468 |
| SJ41NE | 28 . | 345660 | 315350 | -18 | TD | 76.7468 |
| SJ41NE | 29 . | 346180 | 317850 | 7.5 | RH | 56.2072 |
| SJ41NE | 29 . | 346180 | 317850 | 7.5 | RH | 56.2072 |
| SJ41NE | 30 . | 346680 | 316860 | -11 | TD | 54.0146 |
| SJ41NE | 30 . | 346680 | 316860 | -11 | TD | 54.0146 |
| SJ41NE | 31 . | 346380 | 316020 | -14.5 | TD | 54.9407 |
| SJ41NE | 31 . | 346380 | 316020 | -14.5 | TD | 54.9407 |
| SJ41NE | 32 . | 346740 | 315230 | -23.9 | TD | 58.8624 |
| SJ41NE | 32 . | 346740 | 315230 | -23.9 | TD | 58.8624 |
| SJ41NE | 33 . | 347340 | 319340 | -18 | TD | 94.5818 |
| SJ41NE | 33 . | 347340 | 319340 | -18 | TD | 94.5818 |
| SJ41NE | 34 . | 347580 | 318780 | -23 | TD | 88.4403 |
| SJ41NE | 34 . | 347580 | 318780 | -23 | TD | 88.4403 |
| SJ41NE | 35 . | 347340 | 317380 | 24.3 | RH | 79.4739 |
| SJ41NE | 35 . | 347340 | 317380 | 24.3 | RH | 79.4739 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SJ41NE | 36 . | 347190 | 316540 | -19 | TD | 85.0065 |
| SJ41NE | 36 . | 347190 | 316540 | -19 | TD | 85.0065 |
| SJ41NE | 37 . | 347560 | 315550 | -25 | TD | 80.1786 |
| SJ41NE | 37 . | 347560 | 315550 | -25 | TD | 80.1786 |
| SJ41NE | 38 . | 348820 | 319760 | -16 | TD | 104.529 |
| SJ41NE | 38 . | 348820 | 319760 | -16 | TD | 104.529 |
| SJ41NE | 39 . | 348210 | 317490 | -23.5 | TD | 85.0844 |
| SJ41NE | 39 . | 348210 | 317490 | -23.5 | TD | 85.0844 |
| SJ41NE | 40 . | 348780 | 315910 | -25 | TD | 79.996 |
| SJ41NE | 40 . | 348780 | 315910 | -25 | TD | 79.996 |
| SJ41NE | 41 . | 349660 | 318400 | -20 | TD | 95.0786 |
| SJ41NE | 41 . | 349660 | 318400 | -20 | TD | 95.0786 |
| SJ41NE | 42 . | 349720 | 316590 | -22 | TD | 80.0408 |
| SJ41NE | 42 . | 349720 | 316590 | -22 | TD | 80.0408 |
| SJ41NE | 43 . | 349680 | 315630 | -20 | TD | 76.9336 |
| SJ41NE | 43 . | 349680 | 315630 | -20 | TD | 76.9336 |
| SJ41NE | 44 . | 347850 | 316470 | 48 | RH | 87.8879 |
| SJ41NE | 45 . | 347310 | 317960 | 14.5 | RH | 70.8539 |
| SJ41NE | 46 . | 348550 | 318960 | 22.5 | RH | 89.8805 |
| SJ41NE | 47 . | 349380 | 315340 | 30.5 | RH | 79.2971 |
| SJ41NE | 48 . | 349160 | 317210 | 18.29 | RH | 82.2283 |
| SJ41NE | 49 . | 346180 | 315530 | 14 | RH | 71.1219 |
| SJ41NE | 50 . | 348410 | 316050 | 11 | RH | 80.1506 |
| SJ41NE | 51 . | 349340 | 315010 | 7.5 | RH | 55.0258 |
| SJ41NE | 52 . | 349590 | 315330 | -15 | TD | 75.7495 |
| SJ41NE | 53 . | 349740 | 316320 | -10 | TD | 80.2462 |
| SJ41NE | 56 . | 349710 | 315850 | -4 | TD | 79.8067 |
| SJ41NE | 59 . | 345900 | 316800 | 42.67 | RH | 68.7787 |
| SJ41NE | 60 . | 348200 | 315500 | 33.52 | RH | 69.0531 |
| SJ41NE | 61 . | 345900 | 316300 | 56.39 | RH | 50.5275 |
| SJ41NE | 63 . | 348710 | 315060 | -8 | TD | 67.5155 |
| SJ41NE | 64 . | 349100 | 319640 | 41 | RH | 108.151 |
| SJ41NE | 66 . | 349860 | 318510 | 17.5 | RH | 99.1926 |
| SJ41NE | 67 . | 348610 | 317240 | 26 | RH | 84.2849 |
| SJ41NE | 68 . | 349080 | 319180 | 21 | RH | 93.7326 |
| SJ41NW | 1 . | 342420 | 315780 | -16.5 | TD | 66.6224 |
| SJ41NW | 2 . | 342920 | 315300 | -25 | TD | 69.9044 |
| SJ41NW | 3 . | 342990 | 315260 | 8 | RH | 60.3147 |
| SJ41NW | 4 . | 343040 | 315190 | 12 | RH | 55.8723 |
| SJ41NW | 7 . | 341650 | 317060 | 31.7 | RH | 74.3532 |
| SJ41NW | 11 . | 340440 | 317900 | 16.15 | RH | 78.7864 |
| SJ41NW | 13 . | 343740 | 318660 | 20 | RH | 60.6624 |
| SJ41NW | 14 . | 342280 | 317340 | 43.5 | RH | 80.6772 |
| SJ41NW | 15 . | 343920 | 318500 | 49 | RH | 60.1185 |
| SJ41NW | 16 . | 343080 | 319840 | 39 | RH | 74.8966 |
| SJ41NW | 17 . | 343110 | 319780 | 35 | RH | 70.0229 |
| SJ41NW | 21 . | 340480 | 319390 | 10.4 | RH | 84.6471 |
| SJ41NW | 22 . | 340340 | 318220 | -8.1 | TD | 79.996 |

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|---|---|---|---|---|---|---|
| SJ41NW | 22 . | 340340 | 318220 | -8.1 | TD | 79.996 |
| SJ41NW | 23 . | 340740 | 317040 | -24.4 | TD | 84.5416 |
| SJ41NW | 23 . | 340740 | 317040 | -24.4 | TD | 84.5416 |
| SJ41NW | 24 . | 340420 | 316170 | -10.6 | TD | 87.9325 |
| SJ41NW | 24 . | 340420 | 316170 | -10.6 | TD | 87.9325 |
| SJ41NW | 25 . | 340070 | 315550 | -4.2 | TD | 85.4552 |
| SJ41NW | 25 . | 340070 | 315550 | -4.2 | TD | 85.4552 |
| SJ41NW | 26 . | 341670 | 319350 | 18 | RH | 85.1628 |
| SJ41NW | 26 . | 341670 | 319350 | 18 | RH | 85.1628 |
| SJ41NW | 27 . | 341650 | 318480 | -21 | TD | 80.2052 |
| SJ41NW | 27 . | 341650 | 318480 | -21 | TD | 80.2052 |
| SJ41NW | 28 . | 341920 | 317320 | -25.7 | TD | 79.8128 |
| SJ41NW | 28 . | 341920 | 317320 | -25.7 | TD | 79.8128 |
| SJ41NW | 29 . | 341530 | 316690 | -13.7 | TD | 73.7844 |
| SJ41NW | 29 . | 341530 | 316690 | -13.7 | TD | 73.7844 |
| SJ41NW | 30 . | 341770 | 315480 | -23 | TD | 70.0072 |
| SJ41NW | 30 . | 341770 | 315480 | -23 | TD | 70.0072 |
| SJ41NW | 31 . | 342620 | 319730 | -6.2 | TD | 75.3138 |
| SJ41NW | 32 . | 342700 | 319360 | -18 | TD | 65.0086 |
| SJ41NW | 33 . | 342390 | 318630 | -22 | TD | 88.5924 |
| SJ41NW | 33 . | 342390 | 318630 | -22 | TD | 88.5924 |
| SJ41NW | 34 . | 342480 | 317570 | -25.1 | TD | 80.9727 |
| SJ41NW | 34 . | 342480 | 317570 | -25.1 | TD | 80.9727 |
| SJ41NW | 35 . | 342550 | 316660 | -18.5 | TD | 82.2596 |
| SJ41NW | 35 . | 342550 | 316660 | -18.5 | TD | 82.2596 |
| SJ41NW | 36 . | 342460 | 315540 | -17.5 | TD | 71.0757 |
| SJ41NW | 36 . | 342460 | 315540 | -17.5 | TD | 71.0757 |
| SJ41NW | 37 . | 343100 | 319830 | -25 | TD | 73.4919 |
| SJ41NW | 38 . | 343370 | 318420 | -19.5 | TD | 83.5148 |
| SJ41NW | 38 . | 343370 | 318420 | -19.5 | TD | 83.5148 |
| SJ41NW | 39 . | 343650 | 317440 | -18.1 | TD | 72.2184 |
| SJ41NW | 39 . | 343650 | 317440 | -18.1 | TD | 72.2184 |
| SJ41NW | 40 . | 344250 | 315680 | -18 | TD | 80.6008 |
| SJ41NW | 40 . | 344250 | 315680 | -18 | TD | 80.6008 |
| SJ41NW | 41 . | 343500 | 315280 | -17.5 | TD | 56.7673 |
| SJ41NW | 41 . | 343500 | 315280 | -17.5 | TD | 56.7673 |
| SJ41NW | 42 . | 344350 | 319560 | -18.7 | TD | 88.8388 |
| SJ41NW | 43 . | 344330 | 317100 | -18.5 | TD | 69.8618 |
| SJ41NW | 43 . | 344330 | 317100 | -18.5 | TD | 69.8618 |
| SJ41NW | 44 . | 344730 | 316000 | -22.7 | TD | 59.9717 |
| SJ41NW | 44 . | 344730 | 316000 | -22.7 | TD | 59.9717 |
| SJ41NW | 45 . | 344570 | 315510 | -16 | TD | 80.6264 |
| SJ41NW | 45 . | 344570 | 315510 | -16 | TD | 80.6264 |
| SJ41NW | 47 . | 343850 | 317040 | 28.5 | RH | 59.433 |
| SJ41NW | 48 . | 340930 | 316420 | 46 | RH | 83.849 |
| SJ41NW | 49 . | 341440 | 317780 | 25 | RH | 75.8536 |
| SJ41NW | 50 . | 342100 | 318200 | 48 | RH | 80.0016 |
| SJ41NW | 51 . | 342250 | 317500 | 41.5 | RH | 80.2088 |

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| SJ41NW | 52 . | 342760 | 318800 | 34.5 | RH | 72.0974 |
| SJ41NW | 53 . | 343400 | 317680 | -150 | TD | 78.5758 |
| SJ41NW | 53 . | 343400 | 317680 | 39 | RH | 78.5758 |
| SJ41NW | 54 . | 340880 | 317420 | 32.75 | RH | 74.0754 |
| SJ41NW | 55 . | 340380 | 318220 | 15.5 | RH | 79.996 |
| SJ41NW | 56 . | 342620 | 315586 | -8 | TD | 68.0987 |
| SJ41NW | 57 . | 342713 | 315438 | -10 | TD | 69.994 |
| SJ41NW | 58 . | 342798 | 315370 | -12 | TD | 69.9961 |
| SJ41NW | 59 . | 342903 | 315252 | 25.5 | RH | 69.817 |
| SJ41NW | 65 . | 342998 | 315142 | 14.9 | RH | 55.622 |
| SJ41NW | 69 . | 343027 | 315115 | 20.5 | RH | 56.6151 |
| SJ41NW | 72 . | 343066 | 315086 | -7 | TD | 57.8513 |
| SJ41NW | 75 . | 342260 | 317450 | 42 | RH | 79.9725 |
| SJ41NW | 76 . | 343130 | 316190 | 37.3 | RH | 75.1966 |
| SJ41NW | 77 . | 342030 | 318190 | 43.25 | RH | 79.6051 |
| SJ41NW | 78 . | 342400 | 318700 | 33 | RH | 87.8868 |
| SJ41NW | 79 . | 340130 | 318480 | 5 | RH | 83.3652 |
| SJ41NW | 80 . | 344440 | 318035 | -20 | TD | 59.8185 |
| SJ41NW | 82 . | 343020 | 317630 | 34.6 | RH | 79.522 |
| SJ41SE | 1 . | 345480 | 314310 | 47.65 | RH | 80.6385 |
| SJ41SE | 2 . | 347000 | 313240 | 37.79 | RH | 75.7687 |
| SJ41SE | 3 . | 347990 | 313010 | 26.21 | RH | 70.6776 |
| SJ41SE | 4 A | 349300 | 313080 | 54.55 | RH | 50.0313 |
| SJ41SE | 5 . | 346100 | 312830 | 16.76 | RH | 82.9171 |
| SJ41SE | 6 . | 348560 | 312070 | -52.12 | TD | 75.9376 |
| SJ41SE | 7 . | 349290 | 311950 | 12.5 | RH | 55.4333 |
| SJ41SE | 12 . | 346850 | 313700 | -37.8 | TD | 49.8106 |
| SJ41SE | 13 . | 349170 | 312830 | -30.48 | TD | 50.8512 |
| SJ41SE | 16 . | 349220 | 312780 | -30.48 | TD | 52.895 |
| SJ41SE | 19 . | 349000 | 310590 | -9.14 | TD | 60.8443 |
| SJ41SE | 20 . | 348910 | 310600 | -9.45 | TD | 59.9964 |
| SJ41SE | 22 . | 348930 | 310520 | -9.14 | TD | 60.4767 |
| SJ41SE | 25 . | 348920 | 310470 | -9.14 | TD | 60.7219 |
| SJ41SE | 26 . | 349890 | 311250 | -8.38 | TD | 60.7468 |
| SJ41SE | 27 . | 349690 | 311100 | -9.14 | TD | 60.0367 |
| SJ41SE | 30 . | 348650 | 310070 | -4.65 | TD | 65.2113 |
| SJ41SE | 31 . | 349250 | 311270 | -10.97 | TD | 67.7964 |
| SJ41SE | 32 . | 349070 | 311390 | -13.72 | TD | 69.084 |
| SJ41SE | 33 . | 348580 | 312590 | -6.55 | TD | 51.1874 |
| SJ41SE | 34 . | 349000 | 312080 | 5.49 | RH | 50.3035 |
| SJ41SE | 35 . | 349000 | 312250 | 10.97 | RH | 60.5855 |
| SJ41SE | 36 . | 349470 | 312460 | -9.45 | TD | 51.7232 |
| SJ41SE | 37 . | 349870 | 313050 | -13.72 | TD | 49.9753 |
| SJ41SE | 40 . | 349160 | 312860 | -9.3 | TD | 50.2011 |
| SJ41SE | 41 . | 349280 | 312730 | -14.17 | TD | 59.5445 |
| SJ41SE | 42 . | 349150 | 312500 | -16.61 | TD | 63.128 |
| SJ41SE | 44 B | 349270 | 312680 | -30.48 | TD | 62.7293 |
| SJ41SE | 46 . | 349020 | 312510 | 10.67 | RH | 57.4805 |

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| SJ41SE | 47 . | 349230 | 312740 | -10.67 | TD | 53.7985 |
| SJ41SE | 49 . | 347210 | 311110 | 38.93 | RH | 75.0169 |
| SJ41SE | 53 . | 346530 | 313600 | -6 | TD | 87.0971 |
| SJ41SE | 60 . | 345270 | 311920 | 18.5 | RH | 85.0289 |
| SJ41SE | 61 . | 345890 | 310660 | 10.65 | RH | 91.1762 |
| SJ41SE | 62 . | 345530 | 314740 | -6.1 | TD | 77.9687 |
| SJ41SE | 63 . | 345610 | 314180 | -6.1 | TD | 80.0032 |
| SJ41SE | 64 . | 345070 | 314630 | -6.1 | TD | 75.3561 |
| SJ41SE | 65 . | 345010 | 314160 | -6.1 | TD | 75.4909 |
| SJ41SE | 68 . | 349770 | 313360 | 16.15 | RH | 55.9272 |
| SJ41SE | 69 . | 348970 | 312720 | -25.6 | TD | 51.352 |
| SJ41SE | 70 B | 349200 | 312600 | -6.1 | TD | 66.337 |
| SJ41SE | 71 B | 348800 | 312700 | -6.55 | TD | 50.7795 |
| SJ41SE | 72 . | 349780 | 311850 | 40.84 | RH | 60.1151 |
| SJ41SE | 73 . | 346100 | 314010 | 7.62 | RH | 85.5022 |
| SJ41SE | 74 A | 349350 | 312260 | -17.68 | TD | 55.0032 |
| SJ41SE | 75 . | 345410 | 313640 | -25 | TD | 82.877 |
| SJ41SE | 75 . | 345410 | 313640 | -25 | TD | 82.877 |
| SJ41SE | 76 . | 345540 | 312560 | -22.5 | TD | 80.1533 |
| SJ41SE | 76 . | 345540 | 312560 | -22.5 | TD | 80.1533 |
| SJ41SE | 77 . | 345330 | 310220 | 8.5 | RH | 86.1998 |
| SJ41SE | 77 . | 345330 | 310220 | 8.5 | RH | 86.1998 |
| SJ41SE | 78 . | 346480 | 314750 | -20.3 | TD | 78.2006 |
| SJ41SE | 78 . | 346480 | 314750 | -20.3 | TD | 78.2006 |
| SJ41SE | 79 . | 346080 | 312780 | 9.7 | RH | 83.2021 |
| SJ41SE | 79 . | 346080 | 312780 | 9.7 | RH | 83.2021 |
| SJ41SE | 80 . | 346670 | 310700 | -5.1 | TD | 83.4794 |
| SJ41SE | 80 . | 346670 | 310700 | -5.1 | TD | 83.4794 |
| SJ41SE | 81 . | 347350 | 310090 | 13 | RH | 78.1435 |
| SJ41SE | 81 . | 347350 | 310090 | 13 | RH | 78.1435 |
| SJ41SE | 82 . | 347440 | 314740 | -20.5 | TD | 65.02 |
| SJ41SE | 82 . | 347440 | 314740 | -20.5 | TD | 65.02 |
| SJ41SE | 83 . | 347090 | 314070 | -15.5 | TD | 54.6656 |
| SJ41SE | 83 . | 347090 | 314070 | -15.5 | TD | 54.6656 |
| SJ41SE | 84 . | 347740 | 311320 | -18.2 | TD | 73.2435 |
| SJ41SE | 84 . | 347740 | 311320 | -18.2 | TD | 73.2435 |
| SJ41SE | 85 . | 348540 | 314980 | -25 | TD | 72.4148 |
| SJ41SE | 85 . | 348540 | 314980 | -25 | TD | 72.4148 |
| SJ41SE | 86 . | 348460 | 313640 | -21 | TD | 50.1404 |
| SJ41SE | 86 . | 348460 | 313640 | -21 | TD | 50.1404 |
| SJ41SE | 87 . | 349610 | 310090 | 9.5 | RH | 70.155 |
| SJ41SE | 87 . | 349610 | 310090 | 9.5 | RH | 70.155 |
| SJ41SE | 88 . | 349390 | 314910 | 4 | RH | 55.3211 |
| SJ41SE | 88 . | 349390 | 314910 | 4 | RH | 55.3211 |
| SJ41SE | 89 . | 349830 | 313800 | 37.8 | RH | 54.7568 |
| SJ41SE | 91 . | 346780 | 313720 | 30 | RH | 54.8249 |
| SJ41SE | 92 . | 346680 | 313700 | 16.5 | RH | 76.5194 |
| SJ41SE | 93 . | 346770 | 313770 | -16.5 | TD | 52.0682 |

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| SJ41SE | 94 . | 346510 | 313280 | 38 | RH | 85.0383 |
| SJ41SE | 95 . | 346320 | 313610 | 39.5 | RH | 89.9183 |
| SJ41SE | 96 . | 346170 | 313590 | 50.1 | RH | 89.9981 |
| SJ41SE | 97 . | 345132 | 312365 | -7 | TD | 79.9971 |
| SJ41SE | 98 . | 345346 | 311993 | -8.3 | TD | 85.2077 |
| SJ41SE | 99 . | 345498 | 311471 | 4.6 | RH | 95.1403 |
| SJ41SE | 100 . | 345634 | 310911 | -8.05 | TD | 96.5286 |
| SJ41SE | 101 . | 345780 | 310716 | -6.8 | TD | 94.9293 |
| SJ41SE | 102 . | 345019 | 312511 | -5 | TD | 79.996 |
| SJ41SE | 103 . | 345082 | 312421 | -7 | TD | 79.996 |
| SJ41SE | 104 . | 345234 | 312186 | -5.5 | TD | 79.8947 |
| SJ41SE | 105 . | 345325 | 312096 | -5.5 | TD | 81.2663 |
| SJ41SE | 106 . | 345399 | 311846 | -5.5 | TD | 84.9971 |
| SJ41SE | 107 . | 345476 | 311740 | -5.5 | TD | 85.0422 |
| SJ41SE | 108 . | 345471 | 311639 | -5.5 | TD | 87.0909 |
| SJ41SE | 109 . | 345535 | 311435 | -5.2 | TD | 95.0124 |
| SJ41SE | 110 . | 345529 | 311311 | -5.5 | TD | 94.9991 |
| SJ41SE | 111 . | 346138 | 310284 | -5.5 | TD | 89.9981 |
| SJ41SE | 112 . | 346250 | 310222 | -7 | TD | 89.9949 |
| SJ41SE | 113 . | 346299 | 310162 | 12.4 | RH | 89.9932 |
| SJ41SE | 114 . | 346294 | 310140 | 12.8 | RH | 90.0177 |
| SJ41SE | 115 . | 346402 | 310041 | -8 | TD | 90.091 |
| SJ41SE | 127 . | 346950 | 313970 | -39.17 | TD | 55.0513 |
| SJ41SE | 128 . | 346370 | 314310 | 60 | RH | 77.4826 |
| SJ41SE | 129 . | 346350 | 313750 | 39 | RH | 89.9925 |
| SJ41SE | 130 . | 346890 | 313420 | -21 | TD | 69.224 |
| SJ41SE | 131 . | 346930 | 313450 | 23.8 | RH | 64.4622 |
| SJ41SE | 132 . | 347000 | 313530 | 51.7 | RH | 50.1612 |
| SJ41SE | 133 . | 347080 | 313590 | 31.05 | RH | 51.0304 |
| SJ41SE | 134 . | 347140 | 313670 | 26 | RH | 52.1238 |
| SJ41SE | 135 . | 347230 | 313670 | -15 | TD | 52.568 |
| SJ41SE | 136 . | 347450 | 313800 | -12.5 | TD | 60.5295 |
| SJ41SE | 137 . | 348000 | 313990 | -30 | TD | 58.7666 |
| SJ41SE | 138 . | 348360 | 314180 | -15 | TD | 50.0983 |
| SJ41SE | 139 . | 348570 | 314330 | -15 | TD | 53.2496 |
| SJ41SE | 140 . | 348860 | 314670 | 13.7 | RH | 58.1261 |
| SJ41SE | 141 . | 349050 | 314780 | -12 | TD | 60.1229 |
| SJ41SE | 142 . | 349760 | 314050 | 10 | RH | 51.3563 |
| SJ41SE | 143 . | 349750 | 314000 | 10.3 | RH | 50.6731 |
| SJ41SE | 144 . | 349800 | 314000 | 11.7 | RH | 50.5667 |
| SJ41SE | 145 . | 349830 | 313940 | 17.1 | RH | 54.6428 |
| SJ41SE | 146 . | 349850 | 313930 | 20.4 | RH | 55.7189 |
| SJ41SE | 147 . | 349890 | 313920 | 20.7 | RH | 56.2171 |
| SJ41SE | 159 . | 345920 | 312370 | -15 | TD | 74.855 |
| SJ41SE | 160 . | 345900 | 312370 | -15 | TD | 74.9401 |
| SJ41SE | 167 . | 349530 | 313020 | -24.15 | TD | 58.6422 |
| SJ41SE | 172 . | 347970 | 310820 | -18.6 | TD | 76.7907 |
| SJ41SE | 185 . | 345100 | 312900 | 34.75 | RH | 79.996 |

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| SJ41SE | 187 . | 349740 | 312360 | -10 | TD | 50.4934 |
| SJ41SE | 201 . | 347700 | 310300 | 17.1 | RH | 67.3282 |
| SJ41SE | 236 . | 346900 | 313150 | -18 | TD | 78.6296 |
| SJ41SW | 1 . | 340930 | 313200 | 6.705 | RH | 77.0301 |
| SJ41SW | 2 . | 342050 | 313190 | 18.9 | RH | 74.995 |
| SJ41SW | 3 . | 343530 | 313230 | 33.83 | RH | 90.145 |
| SJ41SW | 5 . | 343570 | 314580 | -22 | TD | 64.8133 |
| SJ41SW | 6 . | 344360 | 314010 | 19 | RH | 76.6881 |
| SJ41SW | 7 . | 344700 | 313590 | -15.5 | TD | 80.1404 |
| SJ41SW | 8 . | 340800 | 313830 | 17.67 | RH | 74.9894 |
| SJ41SW | 9 A | 342050 | 312990 | 20.11 | RH | 76.2114 |
| SJ41SW | 10 . | 340320 | 314730 | -10.5 | TD | 77.5451 |
| SJ41SW | 10 . | 340320 | 314730 | -10.5 | TD | 77.5451 |
| SJ41SW | 11 . | 340480 | 313570 | 6.5 | RH | 74.8749 |
| SJ41SW | 11 . | 340480 | 313570 | 6.5 | RH | 74.8749 |
| SJ41SW | 12 . | 340460 | 312460 | -18 | TD | 96.3214 |
| SJ41SW | 12 . | 340460 | 312460 | -18 | TD | 96.3214 |
| SJ41SW | 13 . | 340500 | 311400 | -18 | TD | 107.818 |
| SJ41SW | 13 . | 340500 | 311400 | -18 | TD | 107.818 |
| SJ41SW | 14 . | 340230 | 310360 | -15 | TD | 93.7294 |
| SJ41SW | 14 . | 340230 | 310360 | -15 | TD | 93.7294 |
| SJ41SW | 15 . | 341100 | 314890 | -19.8 | TD | 70.0701 |
| SJ41SW | 15 . | 341100 | 314890 | -19.8 | TD | 70.0701 |
| SJ41SW | 16 . | 341540 | 313620 | -15 | TD | 70.3244 |
| SJ41SW | 16 . | 341540 | 313620 | -15 | TD | 70.3244 |
| SJ41SW | 17 . | 341120 | 312400 | -18 | TD | 103.023 |
| SJ41SW | 17 . | 341120 | 312400 | -18 | TD | 103.023 |
| SJ41SW | 18 . | 341070 | 310220 | 11.2 | RH | 80.072 |
| SJ41SW | 18 . | 341070 | 310220 | 11.2 | RH | 80.072 |
| SJ41SW | 19 . | 342660 | 314190 | 7.5 | RH | 58.0638 |
| SJ41SW | 19 . | 342660 | 314190 | 7.5 | RH | 58.0638 |
| SJ41SW | 20 . | 342670 | 313930 | -21 | TD | 66.3401 |
| SJ41SW | 20 . | 342670 | 313930 | -21 | TD | 66.3401 |
| SJ41SW | 21 . | 342800 | 312460 | -20.5 | TD | 99.6507 |
| SJ41SW | 21 . | 342800 | 312460 | -20.5 | TD | 99.6507 |
| SJ41SW | 22 . | 342490 | 311620 | -18 | TD | 99.9923 |
| SJ41SW | 22 . | 342490 | 311620 | -18 | TD | 99.9923 |
| SJ41SW | 23 . | 344040 | 314800 | -19 | TD | 87.8666 |
| SJ41SW | 23 . | 344040 | 314800 | -19 | TD | 87.8666 |
| SJ41SW | 24 . | 343520 | 313520 | -5.9 | TD | 87.6445 |
| SJ41SW | 24 . | 343520 | 313520 | -5.9 | TD | 87.6445 |
| SJ41SW | 25 . | 343450 | 312590 | -18 | TD | 93.9429 |
| SJ41SW | 25 . | 343450 | 312590 | -18 | TD | 93.9429 |
| SJ41SW | 26 . | 342580 | 310520 | -21.1 | TD | 88.7824 |
| SJ41SW | 26 . | 342580 | 310520 | -21.1 | TD | 88.7824 |
| SJ41SW | 27 . | 344970 | 314300 | 11.4 | RH | 79.9927 |
| SJ41SW | 27 . | 344970 | 314300 | 11.4 | RH | 79.9927 |
| SJ41SW | 28 . | 344480 | 313390 | -14.3 | TD | 82.0161 |

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| SJ41SW | 28 . | 344480 | 313390 | -14.3 | TD | 82.0161 |
| SJ41SW | 29 . | 344880 | 311860 | -20 | TD | 82.0981 |
| SJ41SW | 29 . | 344880 | 311860 | -20 | TD | 82.0981 |
| SJ41SW | 31 . | 344230 | 313520 | -145 | TD | 79.996 |
| SJ41SW | 31 . | 344230 | 313520 | 38 | RH | 79.996 |
| SJ41SW | 31 . | 344230 | 313520 | 38 | RH | 79.996 |
| SJ41SW | 32 . | 344310 | 313530 | -145 | TD | 79.9967 |
| SJ41SW | 32 . | 344310 | 313530 | 37 | RH | 79.9967 |
| SJ41SW | 32 . | 344310 | 313530 | 37 | RH | 79.9967 |
| SJ41SW | 33 . | 344671 | 314610 | 5 | RH | 75.4082 |
| SJ41SW | 34 . | 344903 | 312753 | -20 | TD | 79.996 |
| SJ41SW | 38 . | 343141 | 314995 | -11.15 | TD | 59.8648 |
| SJ41SW | 39 . | 343248 | 314882 | -7 | TD | 60.0002 |
| SJ41SW | 40 . | 343310 | 314782 | -6.15 | TD | 62.4694 |
| SJ41SW | 41 . | 343490 | 314630 | -16.95 | TD | 65.0021 |
| SJ41SW | 42 . | 343552 | 314570 | -29.95 | TD | 64.8299 |
| SJ41SW | 43 . | 343565 | 314515 | -23 | TD | 64.8544 |
| SJ41SW | 45 . | 343642 | 314449 | -15.15 | TD | 66.3611 |
| SJ41SW | 46 . | 343712 | 314454 | -10 | TD | 71.697 |
| SJ41SW | 47 . | 344011 | 314269 | -8.15 | TD | 85.0891 |
| SJ41SW | 48 . | 344060 | 314211 | -9.65 | TD | 85.3572 |
| SJ41SW | 49 . | 344498 | 313930 | -5.15 | TD | 76.3549 |
| SJ41SW | 50 . | 344602 | 313832 | -19.95 | TD | 78.5553 |
| SJ41SW | 51 . | 344776 | 313253 | -7 | TD | 84.9982 |
| SJ41SW | 52 . | 344760 | 313130 | -7.5 | TD | 85.0513 |
| SJ41SW | 53 . | 344901 | 312694 | -7 | TD | 79.996 |
| SJ41SW | 54 . | 344941 | 312672 | -30 | TD | 79.996 |
| SJ41SW | 55 . | 344905 | 312642 | -31.5 | TD | 79.996 |
| SJ41SW | 67 . | 343520 | 313250 | 29.3 | RH | 89.5725 |
| SJ50NW | 1 . | 350590 | 309360 | 12.5 | RH | 84.5228 |
| SJ50NW | 2 . | 351300 | 309960 | 16.5 | RH | 70.3087 |
| SJ50NW | 8 . | 350690 | 309270 | 29.26 | RH | 85.5781 |
| SJ50NW | 9 . | 351260 | 309470 | 14.02 | RH | 69.5484 |
| SJ50NW | 14 . | 351990 | 309340 | 24.38 | RH | 65.9972 |
| SJ50NW | 80 . | 350194 | 309587 | 13.08 | RH | 83.0695 |
| SJ50NW | 81 . | 350051 | 309501 | 5.7 | RH | 87.1068 |
| SJ50NW | 82 . | 350044 | 309564 | 7 | RH | 89.1158 |
| SJ50NW | 83 . | 350149 | 309657 | 6.4 | RH | 87.8759 |
| SJ50NW | 84 . | 350159 | 309519 | 5 | RH | 82.9705 |
| SJ50NW | 85 . | 350033 | 309384 | 7.5 | RH | 86.4818 |
| SJ50NW | 86 . | 350120 | 309289 | 6.7 | RH | 79.9545 |
| SJ50NW | 87 . | 350217 | 309414 | 1.5 | RH | 77.0502 |
| SJ50NW | 88 . | 350328 | 309539 | 1.8 | RH | 74.9032 |
| SJ51NW | 1 . | 351920 | 315030 | -3.51 | TD | 59.342 |
| SJ51NW | 2 . | 351220 | 315690 | 3.66 | RH | 64.2613 |
| SJ51NW | 3 . | 351640 | 315970 | -3.05 | TD | 62.251 |
| SJ51NW | 4 . | 351470 | 316140 | 1.98 | RH | 65.5368 |
| SJ51NW | 5 . | 351220 | 316340 | 3.05 | RH | 69.7565 |

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| SJ51NW | 6 . | 351540 | 316660 | -5.79 | TD | 70.9104 |
| SJ51NW | 7 . | 350520 | 316150 | 5.94 | RH | 69.36 |
| SJ51NW | 13 . | 351620 | 316780 | 0 | RH | 70.0916 |
| SJ51NW | 16 . | 352960 | 318900 | 0 | RH | 71.0994 |
| SJ51NW | 22 . | 353090 | 317970 | 0 | RH | 70.0005 |
| SJ51NW | 24 . | 351080 | 316250 | 3.8 | RH | 69.892 |
| SJ51NW | 30 A | 353870 | 315080 | 13.11 | RH | 78.0478 |
| SJ51NW | 33 . | 350660 | 319560 | 9.8 | RH | 101.869 |
| SJ51NW | 34 . | 350400 | 318620 | -22 | TD | 106.208 |
| SJ51NW | 35 . | 350170 | 317500 | 13.6 | RH | 82.7838 |
| SJ51NW | 35 . | 350170 | 317500 | 13.6 | RH | 82.7838 |
| SJ51NW | 36 . | 350440 | 316170 | 4.5 | RH | 69.7516 |
| SJ51NW | 36 . | 350440 | 316170 | 4.5 | RH | 69.7516 |
| SJ51NW | 37 . | 350230 | 315190 | -23 | TD | 70.0188 |
| SJ51NW | 37 . | 350230 | 315190 | -23 | TD | 70.0188 |
| SJ51NW | 38 . | 351600 | 319470 | 12 | RH | 94.0101 |
| SJ51NW | 39 . | 351020 | 319010 | -18.2 | TD | 101.487 |
| SJ51NW | 40 . | 351680 | 318370 | -19 | TD | 93.5428 |
| SJ51NW | 40 . | 351680 | 318370 | -19 | TD | 93.5428 |
| SJ51NW | 41 . | 351400 | 317760 | 17 | RH | 93.8275 |
| SJ51NW | 41 . | 351400 | 317760 | 17 | RH | 93.8275 |
| SJ51NW | 42 . | 351820 | 316580 | 1 | RH | 69.7955 |
| SJ51NW | 42 . | 351820 | 316580 | 1 | RH | 69.7955 |
| SJ51NW | 43 . | 351680 | 315690 | 4 | RH | 60.0035 |
| SJ51NW | 43 . | 351680 | 315690 | 4 | RH | 60.0035 |
| SJ51NW | 44 . | 352160 | 319140 | -18.7 | TD | 89.4983 |
| SJ51NW | 45 . | 352480 | 318210 | 4.1 | RH | 74.8124 |
| SJ51NW | 45 . | 352480 | 318210 | 4.1 | RH | 74.8124 |
| SJ51NW | 46 . | 352480 | 317040 | 0.7 | RH | 71.0921 |
| SJ51NW | 46 . | 352480 | 317040 | 0.7 | RH | 71.0921 |
| SJ51NW | 47 . | 352490 | 316340 | 2.9 | RH | 65.4929 |
| SJ51NW | 47 . | 352490 | 316340 | 2.9 | RH | 65.4929 |
| SJ51NW | 48 . | 352800 | 315630 | 6.4 | RH | 62.8111 |
| SJ51NW | 48 . | 352800 | 315630 | 6.4 | RH | 62.8111 |
| SJ51NW | 49 . | 353470 | 319740 | -18.5 | TD | 70.7159 |
| SJ51NW | 50 . | 353780 | 318460 | 0.8 | RH | 68.8712 |
| SJ51NW | 50 . | 353780 | 318460 | 0.8 | RH | 68.8712 |
| SJ51NW | 51 . | 353080 | 317450 | 3.2 | RH | 67.8524 |
| SJ51NW | 51 . | 353080 | 317450 | 3.2 | RH | 67.8524 |
| SJ51NW | 52 . | 353460 | 316490 | 13.7 | RH | 64.2326 |
| SJ51NW | 52 . | 353460 | 316490 | 13.7 | RH | 64.2326 |
| SJ51NW | 57 . | 351773 | 316583 | 0.9 | RH | 69.8381 |
| SJ51NW | 58 . | 352090 | 315691 | 5.9 | RH | 62.8235 |
| SJ51NW | 59 . | 352135 | 315324 | -6.5 | TD | 60.18 |
| SJ51NW | 60 . | 352160 | 315188 | -6.5 | TD | 60.2475 |
| SJ51NW | 61 . | 352203 | 315028 | 7.6 | RH | 55.096 |
| SJ51NW | 71 . | 353200 | 317300 | 10.9 | RH | 65.1385 |
| SJ51NW | 75 . | 352400 | 316200 | 4.87 | RH | 64.9929 |

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| SJ51SW | 1 . | 351550 | 314010 | -3.66 | TD | 50.0033 |
| SJ51SW | 2 . | 351560 | 314150 | 3.66 | RH | 49.9798 |
| SJ51SW | 3 . | 351660 | 313550 | -4.04 | TD | 55.0939 |
| SJ51SW | 4 . | 351490 | 313400 | -8.53 | TD | 59.8194 |
| SJ51SW | 5 . | 351330 | 313040 | -7.77 | TD | 59.7289 |
| SJ51SW | 6 . | 351270 | 312890 | -7.32 | TD | 59.3812 |
| SJ51SW | 7 . | 350890 | 312800 | 4.57 | RH | 61.1041 |
| SJ51SW | 8 . | 350790 | 312670 | 4.88 | RH | 64.0216 |
| SJ51SW | 9 . | 350660 | 312600 | 2.29 | RH | 64.1473 |
| SJ51SW | 10 . | 350500 | 312390 | -5.33 | TD | 62.7864 |
| SJ51SW | 11 . | 350410 | 312210 | -6.25 | TD | 60.303 |
| SJ51SW | 12 . | 350310 | 312100 | -5.18 | TD | 50.3057 |
| SJ51SW | 13 . | 350220 | 311980 | -5.41 | TD | 52.9405 |
| SJ51SW | 14 . | 350170 | 311780 | -5.18 | TD | 57.2809 |
| SJ51SW | 15 . | 350060 | 311460 | -4.83 | TD | 58.0146 |
| SJ51SW | 16 . | 350390 | 313700 | 5.79 | RH | 50.0066 |
| SJ51SW | 17 A | 351560 | 313930 | 5.79 | RH | 50.9439 |
| SJ51SW | 17 B | 351560 | 313930 | 1.52 | RH | 50.9439 |
| SJ51SW | 18 A | 351560 | 313970 | -3.12 | TD | 49.9972 |
| SJ51SW | 19 . | 351520 | 314360 | -3.81 | TD | 54.888 |
| SJ51SW | 20 . | 351810 | 314580 | -4.27 | TD | 59.0457 |
| SJ51SW | 21 . | 352060 | 314800 | -5.79 | TD | 61.3707 |
| SJ51SW | 22 . | 350550 | 314180 | 4.42 | RH | 50.0414 |
| SJ51SW | 23 . | 350580 | 314150 | 5.33 | RH | 52.417 |
| SJ51SW | 24 . | 350600 | 314130 | 4.57 | RH | 53.0532 |
| SJ51SW | 25 . | 350630 | 314100 | 6.44 | RH | 51.8066 |
| SJ51SW | 26 . | 350650 | 314070 | 6.4 | RH | 52.0608 |
| SJ51SW | 27 . | 351630 | 313740 | -3.05 | TD | 55.2142 |
| SJ51SW | 28 . | 351710 | 313640 | -4.57 | TD | 54.5742 |
| SJ51SW | 29 . | 351760 | 313540 | -3.05 | TD | 54.1484 |
| SJ51SW | 30 . | 352120 | 313410 | 6.55 | RH | 47.3257 |
| SJ51SW | 31 . | 351940 | 313520 | 6.7 | RH | 51.4963 |
| SJ51SW | 32 . | 351890 | 313610 | 8.31 | RH | 52.4627 |
| SJ51SW | 33 . | 351820 | 313590 | 6.07 | RH | 53.3182 |
| SJ51SW | 34 . | 351730 | 313520 | 6.86 | RH | 54.7417 |
| SJ51SW | 35 . | 351990 | 313630 | -4.57 | TD | 51.2134 |
| SJ51SW | 36 . | 351880 | 313760 | 3.53 | RH | 52.5205 |
| SJ51SW | 37 . | 351790 | 313780 | 4.42 | RH | 53.3545 |
| SJ51SW | 38 . | 350230 | 312650 | 4.57 | RH | 59.8261 |
| SJ51SW | 39 . | 350250 | 312680 | 1.5 | RH | 60.4242 |
| SJ51SW | 40 . | 350530 | 314240 | 2.4 | RH | 50.9177 |
| SJ51SW | 41 . | 350730 | 313970 | -3.05 | TD | 50.6749 |
| SJ51SW | 42 . | 350910 | 313770 | -3.05 | TD | 54.0505 |
| SJ51SW | 43 . | 351390 | 312780 | -1.5 | TD | 62.4314 |
| SJ51SW | 48 . | 351480 | 310030 | -30.45 | TD | 69.4483 |
| SJ51SW | 49 . | 352030 | 310630 | 5 | RH | 56.6423 |
| SJ51SW | 50 . | 352140 | 310730 | 6.5 | RH | 59.6729 |
| SJ51SW | 51 . | 352200 | 310820 | 4 | RH | 46.9556 |

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| SJ51SW | 52 . | 352280 | 310920 | 5.3 | RH | 45.8624 |
| SJ51SW | 53 . | 352330 | 311100 | 2.7 | RH | 49.4545 |
| SJ51SW | 54 . | 352480 | 311520 | 12.8 | RH | 65.9295 |
| SJ51SW | 55 . | 352760 | 312010 | 16.3 | RH | 60.142 |
| SJ51SW | 56 . | 353760 | 312120 | 16.2 | RH | 63.5216 |
| SJ51SW | 57 . | 352580 | 312460 | 8 | RH | 50.648 |
| SJ51SW | 58 . | 352320 | 313300 | 13.3 | RH | 53.583 |
| SJ51SW | 59 . | 352280 | 313440 | 5.2 | RH | 45.7946 |
| SJ51SW | 60 . | 352220 | 314020 | 4 | RH | 50.0241 |
| SJ51SW | 61 . | 352220 | 314180 | 6.4 | RH | 49.9795 |
| SJ51SW | 62 . | 352200 | 314440 | 10.4 | RH | 55.0021 |
| SJ51SW | 63 . | 352220 | 314780 | 12 | RH | 59.1357 |
| SJ51SW | 64 . | 353340 | 310690 | 10.4 | RH | 45.0099 |
| SJ51SW | 65 . | 352800 | 314280 | 17.07 | RH | 54.9942 |
| SJ51SW | 66 . | 353290 | 312670 | -58.7 | TD | 55.0059 |
| SJ51SW | 66 . | 353290 | 312670 | 12.8 | RH | 55.0059 |
| SJ51SW | 67 . | 350510 | 311200 | 43.6 | RH | 64.8316 |
| SJ51SW | 69 . | 350290 | 310560 | 11.8 | RH | 68.518 |
| SJ51SW | 69 . | 350290 | 310560 | 11.8 | RH | 68.518 |
| SJ51SW | 70 . | 350620 | 314540 | 11.3 | RH | 60.7912 |
| SJ51SW | 70 . | 350620 | 314540 | 11.3 | RH | 60.7912 |
| SJ51SW | 71 . | 350340 | 311210 | -20 | TD | 54.9434 |
| SJ51SW | 71 . | 350340 | 311210 | -20 | TD | 54.9434 |
| SJ51SW | 72 . | 350380 | 310260 | 4.2 | RH | 77.2125 |
| SJ51SW | 72 . | 350380 | 310260 | 4.2 | RH | 77.2125 |
| SJ51SW | 73 . | 350770 | 313890 | 4.5 | RH | 51.9687 |
| SJ51SW | 73 . | 350770 | 313890 | 4.5 | RH | 51.9687 |
| SJ51SW | 74 . | 351290 | 310460 | -25 | TD | 70.3566 |
| SJ51SW | 74 . | 351290 | 310460 | -25 | TD | 70.3566 |
| SJ51SW | 75 . | 352070 | 314320 | 11.5 | RH | 55.007 |
| SJ51SW | 75 . | 352070 | 314320 | 11.5 | RH | 55.007 |
| SJ51SW | 76 . | 351900 | 313760 | 6.3 | RH | 52.3095 |
| SJ51SW | 76 . | 351900 | 313760 | 6.3 | RH | 52.3095 |
| SJ51SW | 77 . | 352600 | 314330 | 14.2 | RH | 55.0144 |
| SJ51SW | 77 . | 352600 | 314330 | 14.2 | RH | 55.0144 |
| SJ51SW | 78 . | 352540 | 313700 | 8.7 | RH | 50.2161 |
| SJ51SW | 78 . | 352540 | 313700 | 8.7 | RH | 50.2161 |
| SJ51SW | 79 . | 352020 | 310860 | 10.4 | RH | 63.4728 |
| SJ51SW | 79 . | 352020 | 310860 | 10.4 | RH | 63.4728 |
| SJ51SW | 80 . | 352550 | 310260 | 15.4 | RH | 54.7725 |
| SJ51SW | 80 . | 352550 | 310260 | 15.4 | RH | 54.7725 |
| SJ51SW | 81 . | 353170 | 314750 | 12.7 | RH | 63.3274 |
| SJ51SW | 81 . | 353170 | 314750 | 12.7 | RH | 63.3274 |
| SJ51SW | 82 . | 352980 | 313380 | 15.3 | RH | 54.9488 |
| SJ51SW | 82 . | 352980 | 313380 | 15.3 | RH | 54.9488 |
| SJ51SW | 83 . | 353500 | 313200 | 13 | RH | 61.0895 |
| SJ51SW | 83 . | 353500 | 313200 | 13 | RH | 61.0895 |
| SJ51SW | 84 . | 352980 | 310160 | 4.2 | RH | 48.9334 |

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| SJ51SW | 84 . | 352980 | 310160 | 4.2 | RH | 48.9334 |
| SJ51SW | 93 . | 350693 | 313489 | -5.5 | TD | 54.3756 |
| SJ51SW | 94 . | 350729 | 313319 | -8.5 | TD | 58.2143 |
| SJ51SW | 95 . | 350745 | 313355 | -16 | TD | 58.1819 |
| SJ51SW | 96 . | 350752 | 313310 | 18.8 | RH | 58.9523 |
| SJ51SW | 98 . | 350770 | 313280 | 14.9 | RH | 59.392 |
| SJ51SW | 100 . | 350655 | 312699 | 5 | RH | 63.2856 |
| SJ51SW | 101 . | 350612 | 312631 | 4.6 | RH | 63.6947 |
| SJ51SW | 102 . | 350552 | 312411 | 9 | RH | 63.5111 |
| SJ51SW | 103 . | 350530 | 312357 | 5 | RH | 63.499 |
| SJ51SW | 104 . | 352154 | 311090 | 4.8 | RH | 46.599 |
| SJ51SW | 105 . | 352212 | 311100 | 4.4 | RH | 47.7699 |
| SJ51SW | 106 . | 352183 | 311191 | 4.4 | RH | 48.6004 |
| SJ51SW | 107 . | 352183 | 311191 | -30.35 | TD | 48.6004 |
| SJ51SW | 108 . | 352229 | 311180 | 2.4 | RH | 49.3012 |
| SJ51SW | 109 . | 352227 | 311178 | -8.9 | TD | 49.2323 |
| SJ51SW | 110 . | 353228 | 312251 | -12.25 | TD | 60.5142 |
| SJ51SW | 111 . | 353969 | 312111 | -15.5 | TD | 63.3434 |
| SJ51SW | 113 . | 352289 | 314420 | 8.5 | RH | 51.8369 |
| SJ51SW | 114 . | 352342 | 314373 | 4.2 | RH | 49.9074 |
| SJ51SW | 119 . | 352540 | 313576 | 6.4 | RH | 45.6033 |
| SJ51SW | 126 . | 350193 | 310070 | 4.5 | RH | 81.3395 |
| SJ51SW | 127 . | 350250 | 310084 | 3 | RH | 81.0975 |
| SJ51SW | 128 . | 350291 | 310051 | 2.8 | RH | 81.3866 |
| SJ51SW | 129 . | 350409 | 310106 | 4.75 | RH | 80.2467 |
| SJ51SW | 130 . | 350422 | 310076 | 3.6 | RH | 80.7813 |
| SJ51SW | 131 . | 350539 | 310066 | 3.1 | RH | 80.3416 |
| SJ51SW | 132 . | 350655 | 310117 | 2.1 | RH | 80.168 |
| SJ51SW | 133 . | 351040 | 310127 | -7 | TD | 69.9048 |
| SJ51SW | 135 . | 351134 | 310156 | 9.1 | RH | 70.012 |
| SJ51SW | 136 . | 351265 | 310203 | 5 | RH | 70.6491 |
| SJ51SW | 137 . | 351374 | 310258 | 5.7 | RH | 67.3924 |
| SJ51SW | 138 . | 351406 | 310239 | 16 | RH | 65.7136 |
| SJ51SW | 139 . | 351555 | 310336 | -10 | TD | 64.8634 |
| SJ51SW | 140 . | 351735 | 310394 | -10 | TD | 64.8633 |
| SJ51SW | 141 . | 351809 | 310489 | 11.1 | RH | 65.8047 |
| SJ51SW | 142 . | 351927 | 310525 | -12 | TD | 63.9592 |
| SJ51SW | 143 . | 351983 | 310570 | 6.55 | RH | 56.8495 |
| SJ51SW | 144 . | 352135 | 310878 | 2.6 | RH | 49.2107 |
| SJ51SW | 145 . | 352156 | 310892 | 3.6 | RH | 45.9295 |
| SJ51SW | 146 . | 352134 | 310920 | 3.35 | RH | 46.3972 |
| SJ51SW | 148 . | 352156 | 310826 | 1.6 | RH | 52.3792 |
| SJ51SW | 158 . | 352176 | 310984 | 6.6 | RH | 45.3652 |
| SJ51SW | 160 . | 352184 | 311020 | 4.6 | RH | 46.0135 |
| SJ51SW | 161 . | 352167 | 311096 | 4.6 | RH | 46.9264 |
| SJ51SW | 162 . | 352189 | 311171 | 3.4 | RH | 48.4438 |
| SJ51SW | 163 . | 352211 | 311167 | 3.8 | RH | 48.7748 |
| SJ51SW | 164 . | 352202 | 311201 | 5.5 | RH | 49.0907 |

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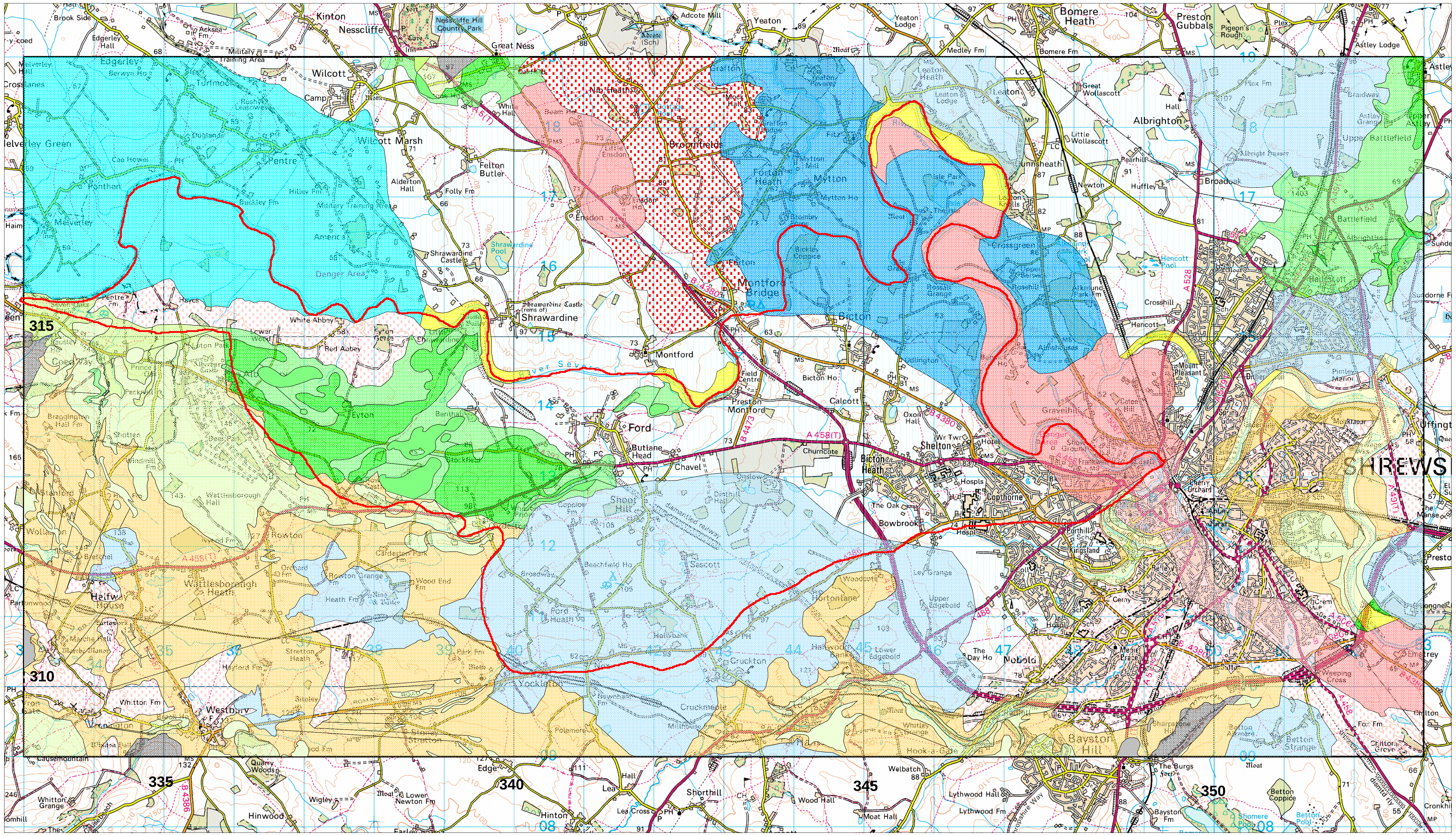
| SJ51SW | 165 . | 352198 | 311240 | 7.8 | RH | 49.4032 |
| SJ51SW | 166 . | 352234 | 311278 | 4.7 | RH | 53.4319 |
| SJ51SW | 167 . | 352217 | 311321 | 1.9 | RH | 54.1881 |
| SJ51SW | 168 . | 352256 | 311378 | 7.6 | RH | 60.5437 |
| SJ51SW | 169 . | 352253 | 311514 | 7.1 | RH | 62.8676 |
| SJ51SW | 170 . | 352328 | 311611 | 12.7 | RH | 65.207 |
| SJ51SW | 171 . | 352415 | 311839 | -10 | TD | 64.7742 |
| SJ51SW | 172 . | 352518 | 311899 | -9 | TD | 63.5353 |
| SJ51SW | 173 . | 352580 | 311990 | 15 | RH | 61.4793 |
| SJ51SW | 176 . | 352644 | 312064 | -8 | TD | 58.5101 |
| SJ51SW | 177 . | 352744 | 312096 | -9 | TD | 57.1833 |
| SJ51SW | 178 . | 352775 | 312187 | 4.7 | RH | 53.0275 |
| SJ51SW | 179 . | 352907 | 312266 | -5 | TD | 52.9769 |
| SJ51SW | 180 . | 353095 | 312248 | -5 | TD | 55.9361 |
| SJ51SW | 181 . | 353258 | 312245 | -8 | TD | 61.3588 |
| SJ51SW | 182 . | 353381 | 312195 | -20 | TD | 63.6125 |
| SJ51SW | 183 . | 353409 | 312213 | -22 | TD | 63.6991 |
| SJ51SW | 184 . | 353418 | 312197 | -25 | TD | 63.7771 |
| SJ51SW | 185 . | 353522 | 312153 | -9.5 | TD | 63.8442 |
| SJ51SW | 186 . | 353661 | 312171 | -8.5 | TD | 63.8849 |
| SJ51SW | 187 . | 353775 | 312147 | 18.2 | RH | 63.591 |
| SJ51SW | 189 . | 353803 | 312132 | 16.7 | RH | 63.5107 |
| SJ51SW | 195 . | 352304 | 314428 | 6.9 | RH | 51.3617 |
| SJ51SW | 196 . | 352377 | 314253 | 4.9 | RH | 49.9662 |
| SJ51SW | 198 . | 352352 | 314210 | 4.2 | RH | 49.9224 |
| SJ51SW | 202 . | 352375 | 314125 | 5.7 | RH | 49.9632 |
| SJ51SW | 203 . | 352357 | 314124 | 6 | RH | 49.9647 |
| SJ51SW | 206 . | 352393 | 313908 | 5.8 | RH | 50.0211 |
| SJ51SW | 208 . | 352413 | 313812 | 6.4 | RH | 49.988 |
| SJ51SW | 209 . | 352461 | 313622 | 6.2 | RH | 47.9859 |
| SJ51SW | 213 . | 352479 | 313525 | 6.7 | RH | 45.289 |
| SJ51SW | 214 . | 352508 | 313463 | 4.2 | RH | 48.6231 |
| SJ51SW | 215 . | 352509 | 313422 | 12.85 | RH | 52.9379 |
| SJ51SW | 216 . | 352546 | 313268 | -5.2 | TD | 54.7792 |
| SJ51SW | 217 . | 352650 | 312761 | -5 | TD | 52.3758 |
| SJ51SW | 218 . | 352711 | 312611 | -5 | TD | 51.8193 |
| SJ51SW | 219 . | 352768 | 312391 | 9.9 | RH | 50.8978 |
| SJ51SW | 220 . | 352766 | 312349 | 7.2 | RH | 50.7692 |
| SJ51SW | 221 . | 352779 | 312322 | 6.3 | RH | 50.9213 |
| SJ51SW | 231 . | 352497 | 313573 | 7.23 | RH | 45.9681 |
| SJ51SW | 240 . | 351690 | 313670 | -3 | TD | 54.6952 |
| SJ51SW | 241 . | 351580 | 313860 | -3 | TD | 54.4127 |
| SJ51SW | 242 . | 351350 | 313980 | -3 | TD | 54.1743 |
| SJ51SW | 243 . | 350950 | 313720 | -4.5 | TD | 55.4882 |
| SJ51SW | 244 . | 350740 | 313440 | -4.5 | TD | 55.6967 |
| SJ51SW | 245 . | 350710 | 313300 | -4 | TD | 58.0542 |
| SJ51SW | 246 . | 350580 | 313230 | -4.5 | TD | 59.8985 |
| SJ51SW | 247 . | 350410 | 313120 | -4 | TD | 60.5468 |

| | | | | | | |
|---|---|---|---|---|---|---|
| SJ51SW | 279 . | 352850 | 313507 | -5.56 | TD | 55.7006 |
| SJ51SW | 280 . | 352393 | 313247 | -5.18 | TD | 53.5731 |
| SJ51SW | 281 . | 352589 | 313208 | -6.1 | TD | 54.4897 |
| SJ51SW | 282 . | 352982 | 313130 | -7.93 | TD | 55.2156 |
| SJ51SW | 283 . | 352524 | 312867 | -4.57 | TD | 52.4921 |
| SJ51SW | 284 . | 353110 | 312752 | -4.27 | TD | 54.5221 |
| SJ51SW | 285 . | 352061 | 312614 | -4.27 | TD | 48.8943 |
| SJ51SW | 286 . | 352256 | 312573 | -3.96 | TD | 50.1229 |
| SJ51SW | 287 . | 352850 | 312449 | -6.48 | TD | 51.6969 |
| SJ51SW | 290 . | 351190 | 311780 | 2.9 | RH | 72.9641 |

# Domain map




1.1 Major aquifer

1.2 Minor aquifer

1.3 Non-aquifer

2.1 Thin drift on major aquifer

2.2 Thin drift on minor or non-aquifer

3.1 Alluvial deposits on major aquifer

3.2 Alluvial deposits on minor or non-aquifer

4. Buried channel (Glaciolacustrine-till)

5. Buried channel (Till- glaciofluvial outwash)

6.1 Buried channel (Glaciogluvial outwash on major aquifer)

6.2 Buried channel (Glaciofluvial outwash on minor aquifer)

7. Till (Morainic ridge and till plain)

8. Ice-contact

9.1 Outwash on thick till

9.2 Outwash (valley train and terrace deposits)