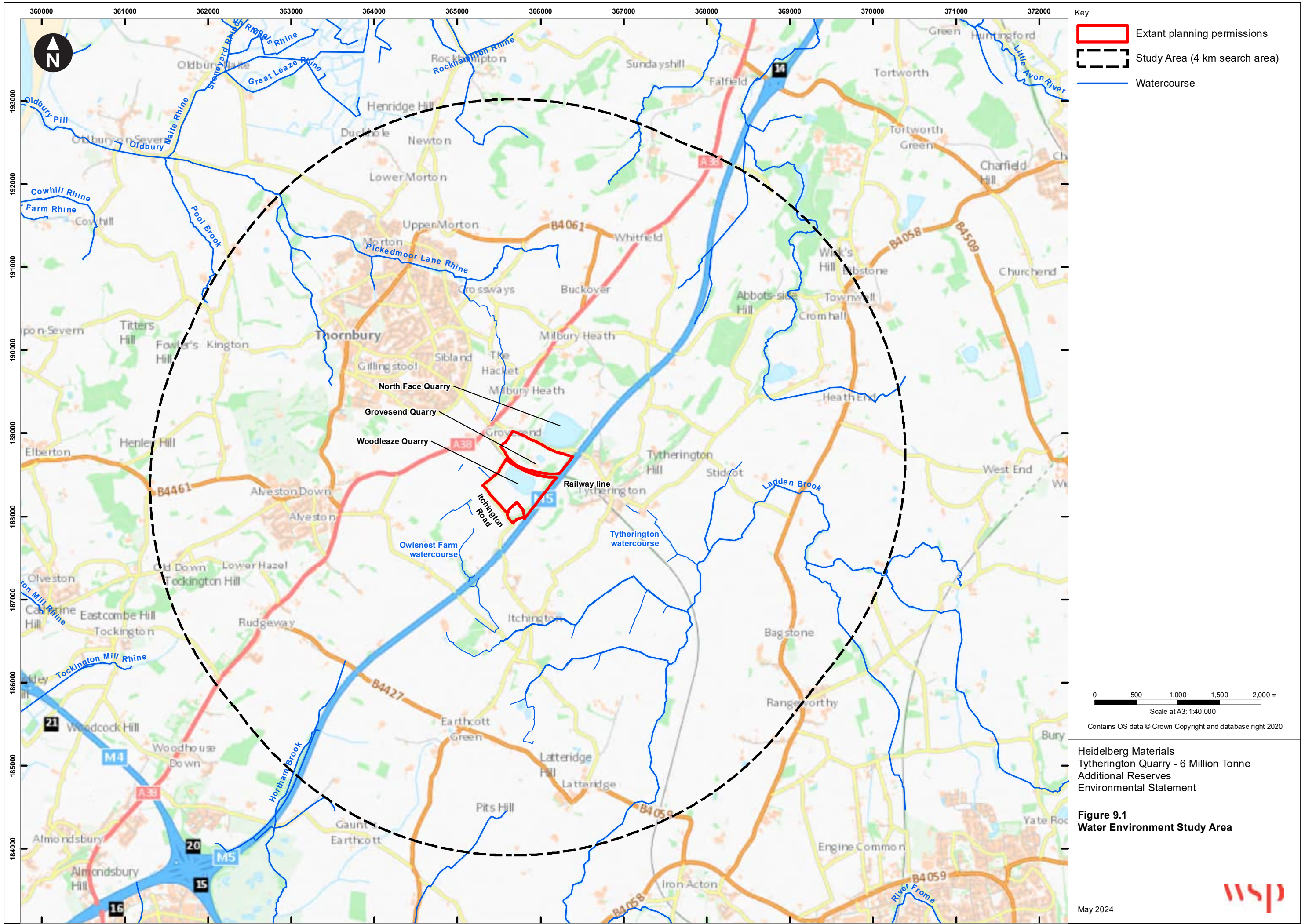
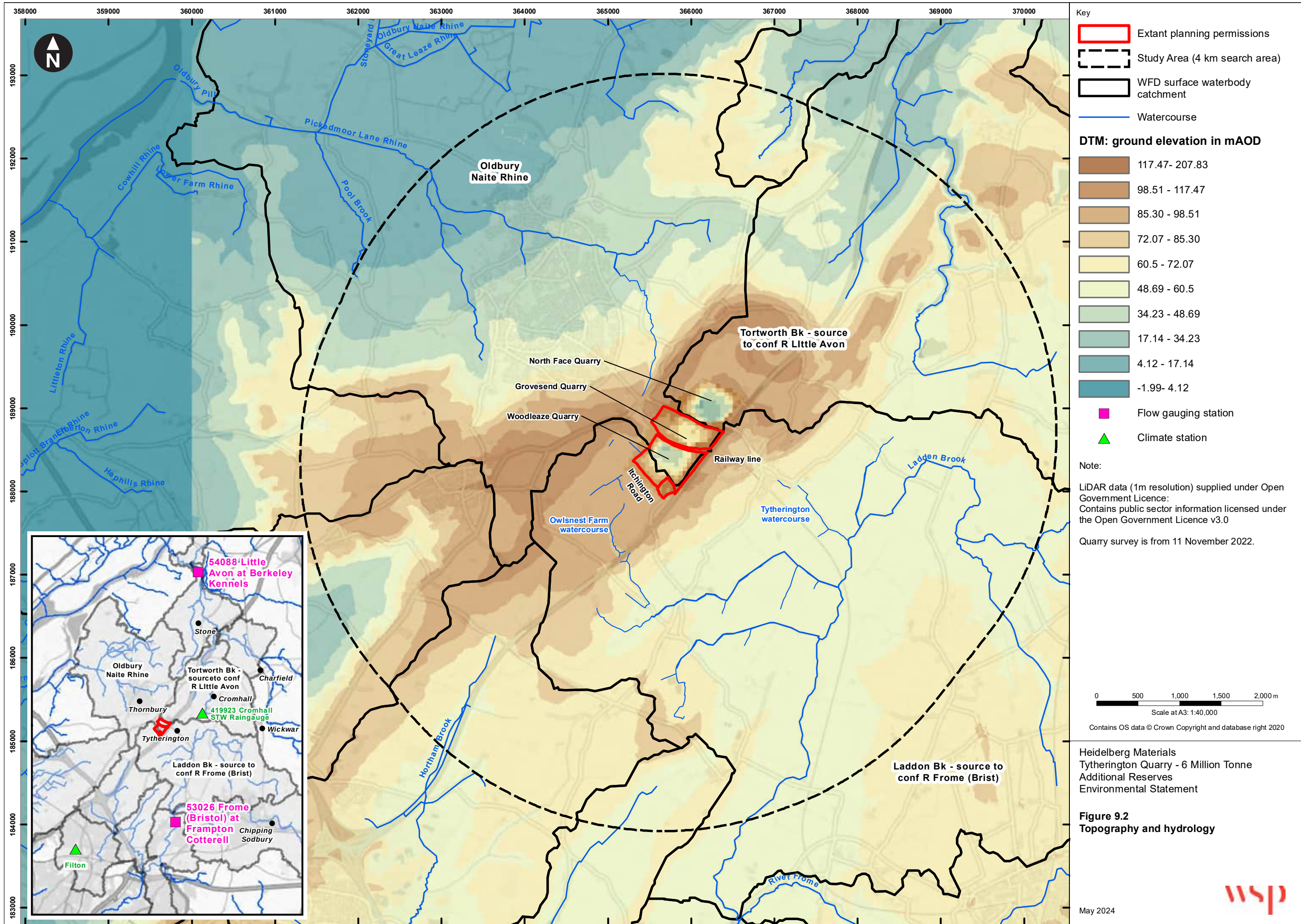
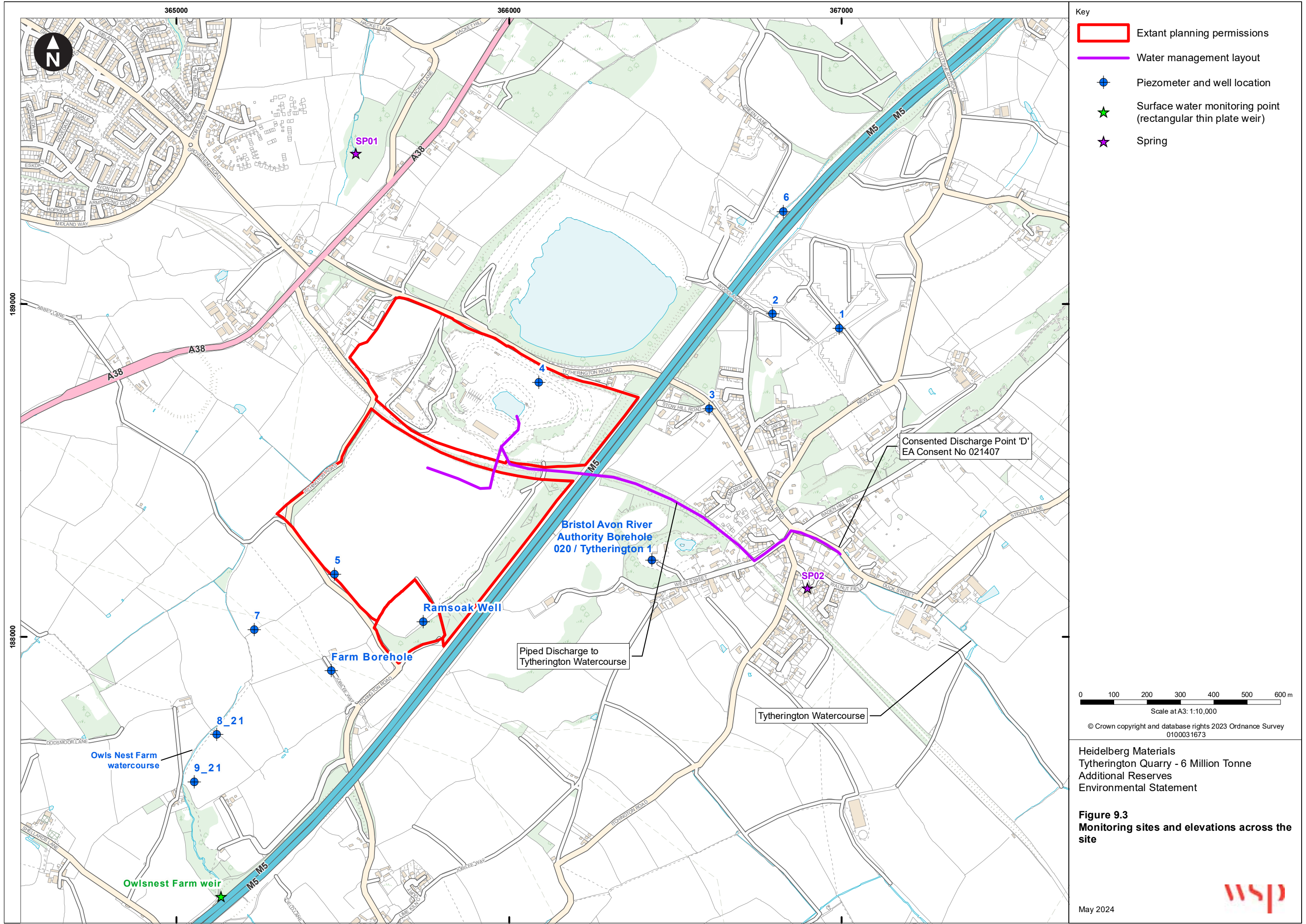


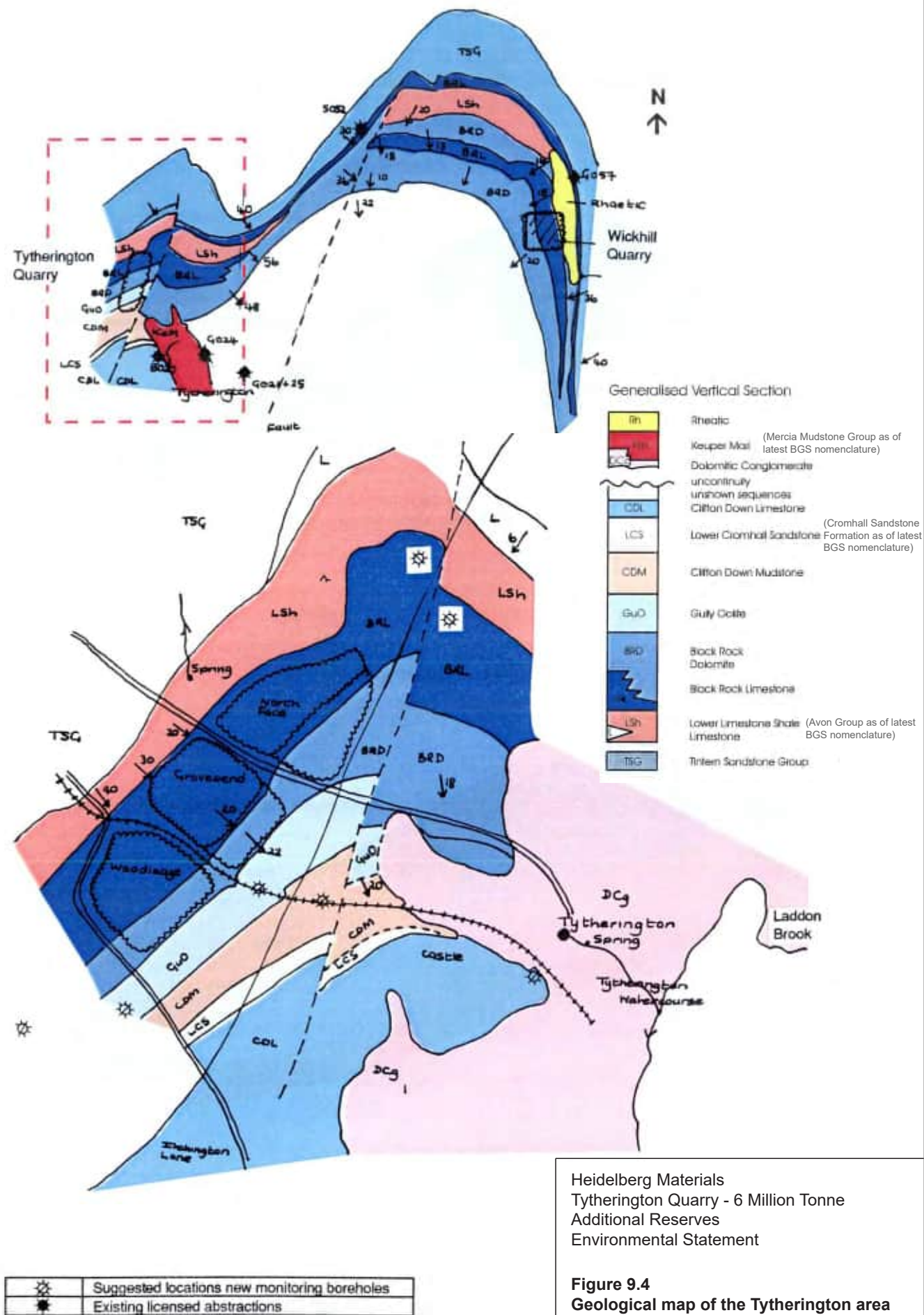
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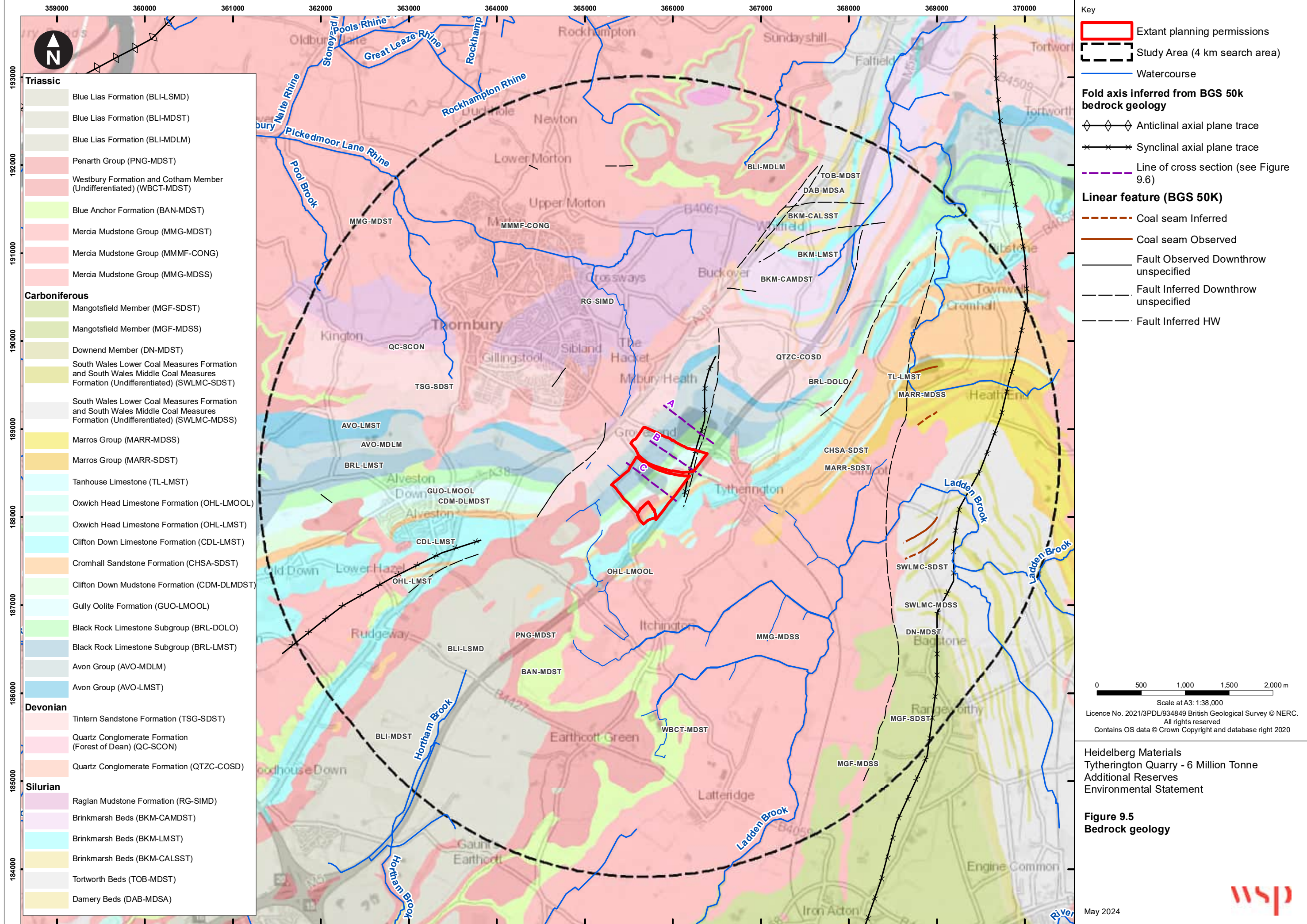
Heidelberg Materials
Tytherington Quarry - 6 Million Tonne
Additional Reserves
Environmental Statement

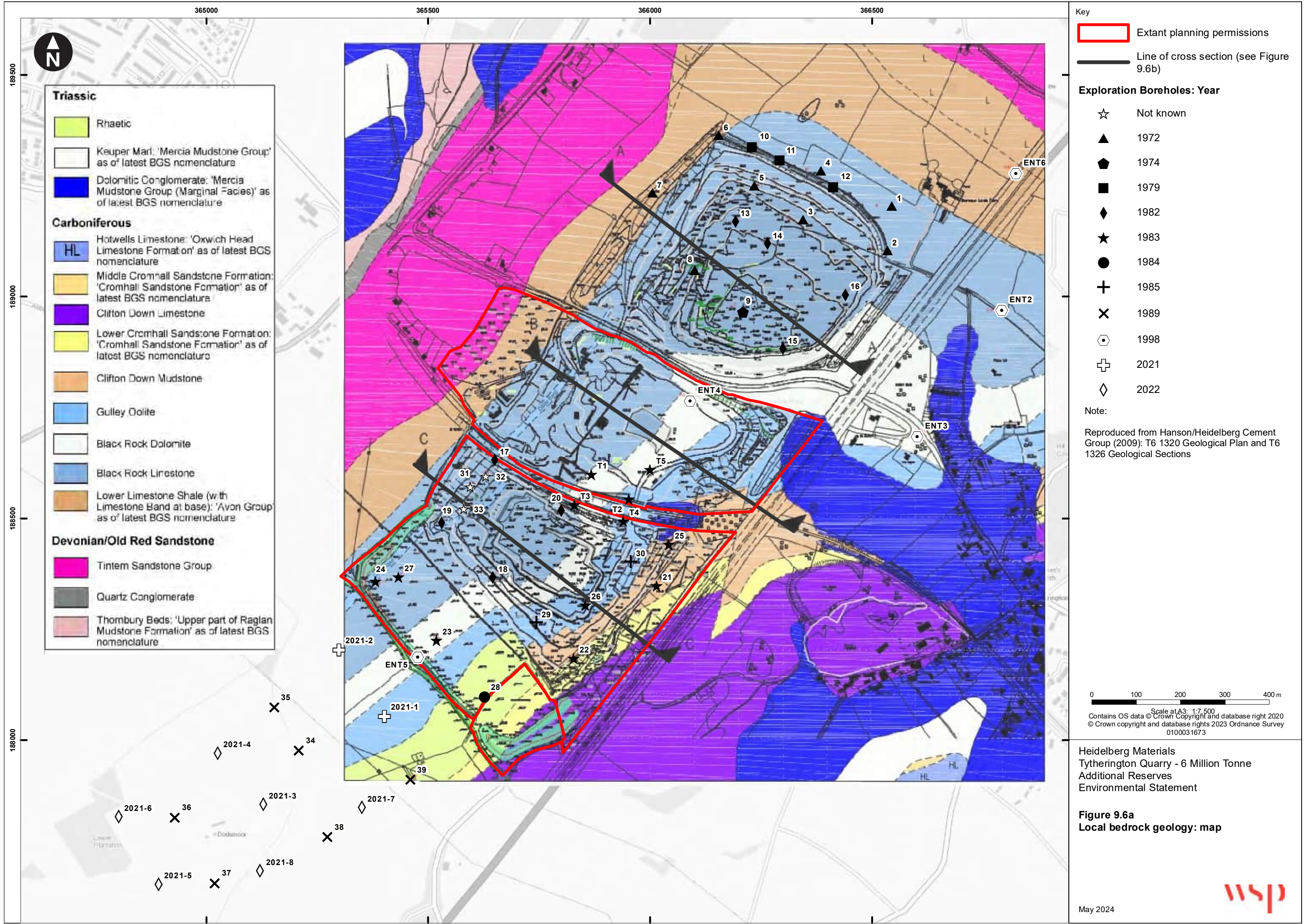
Figure 9.4
Geological map of the Tytherington area

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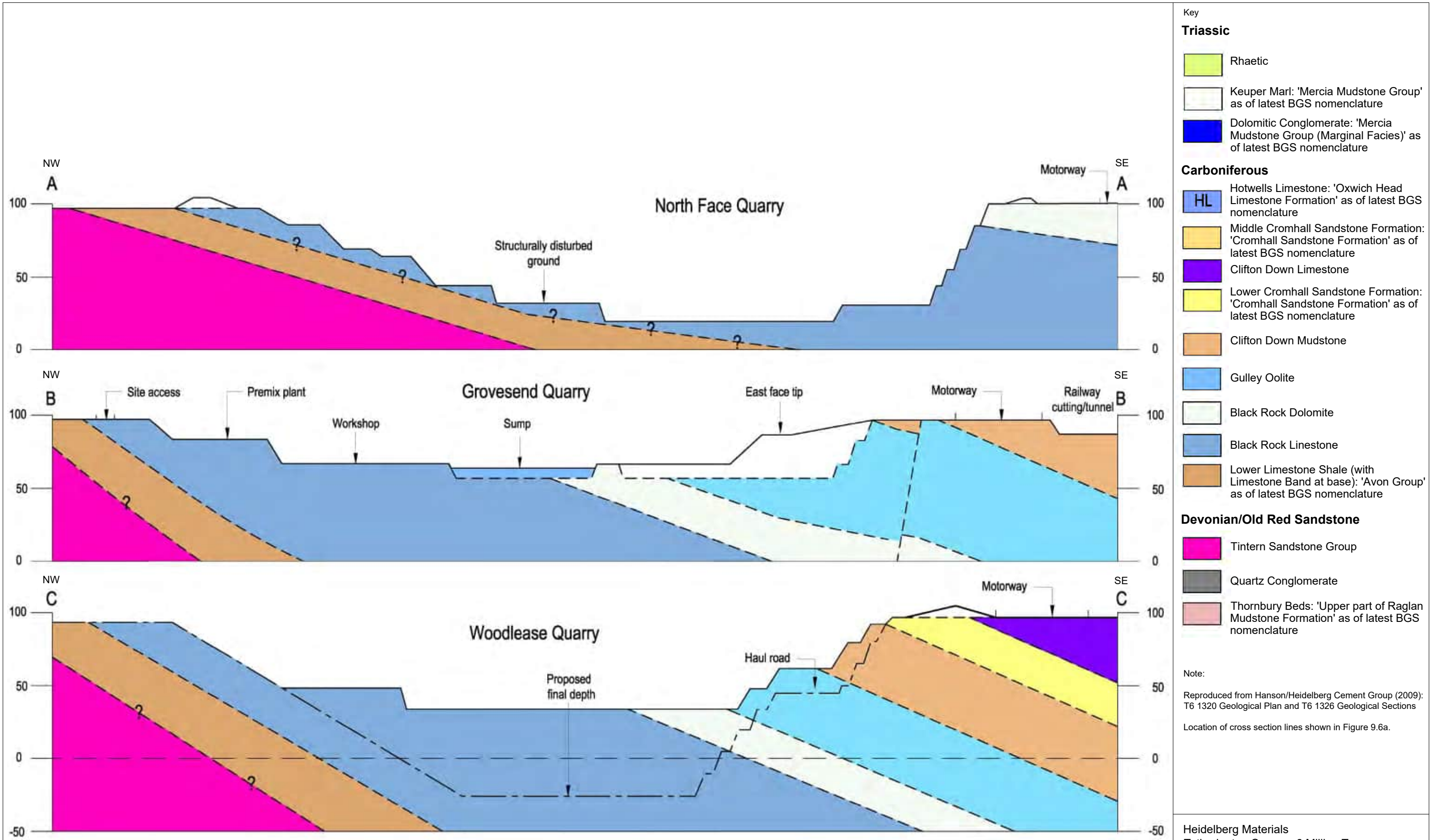


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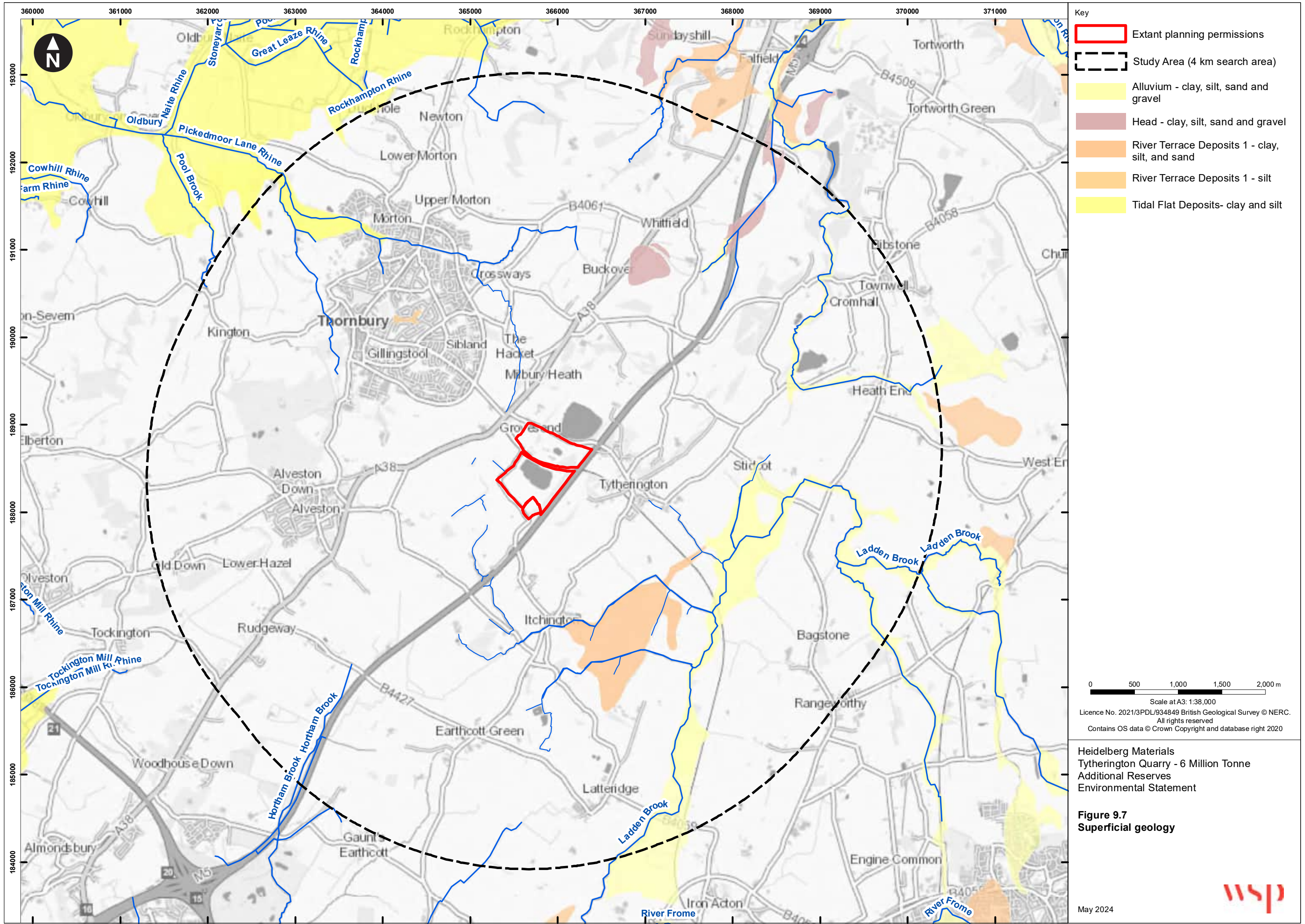
Heidelberg Materials
Tytherington Quarry - 6 Million Tonne
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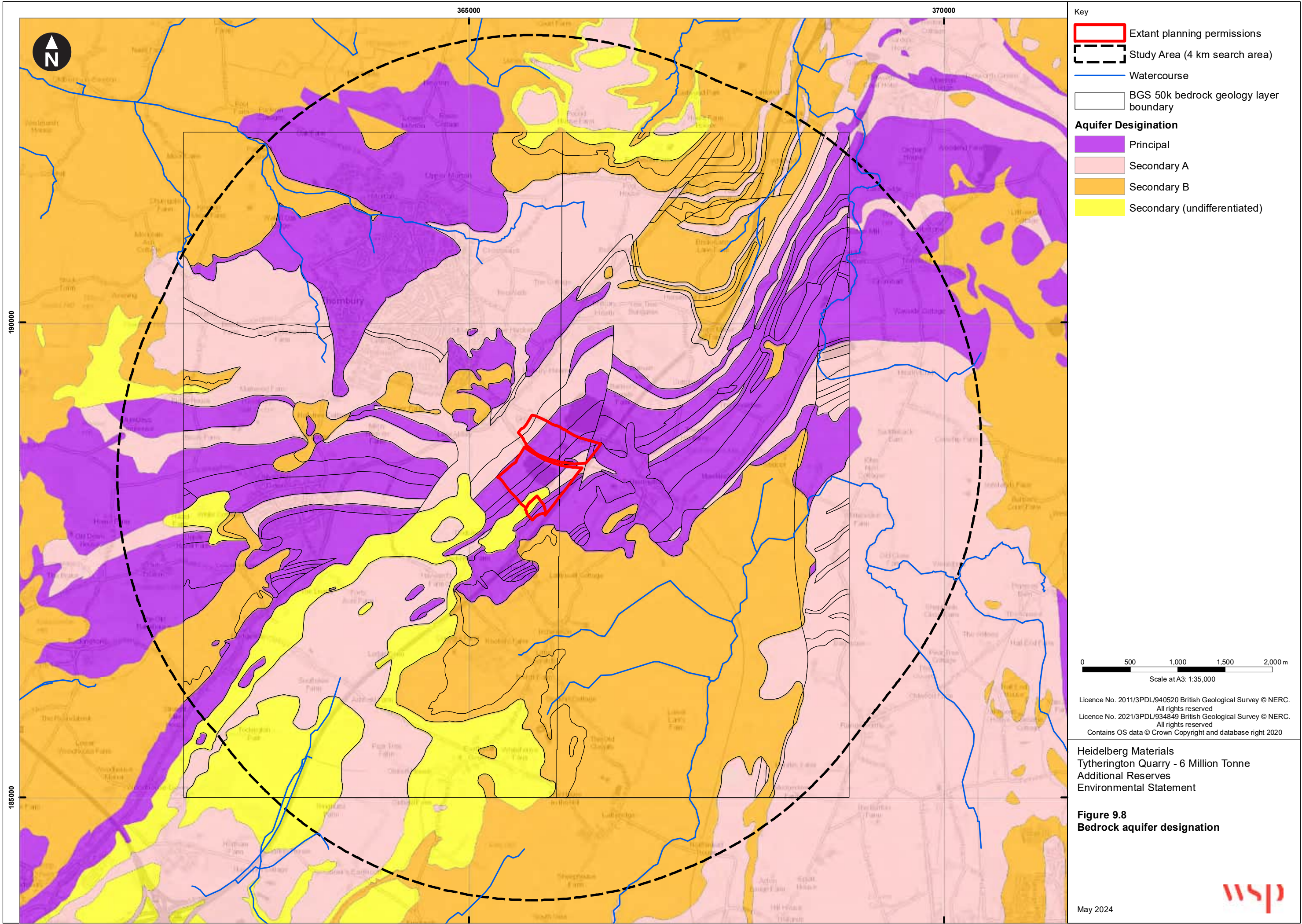
Figure 9.6b
Local bedrock geology: cross sections

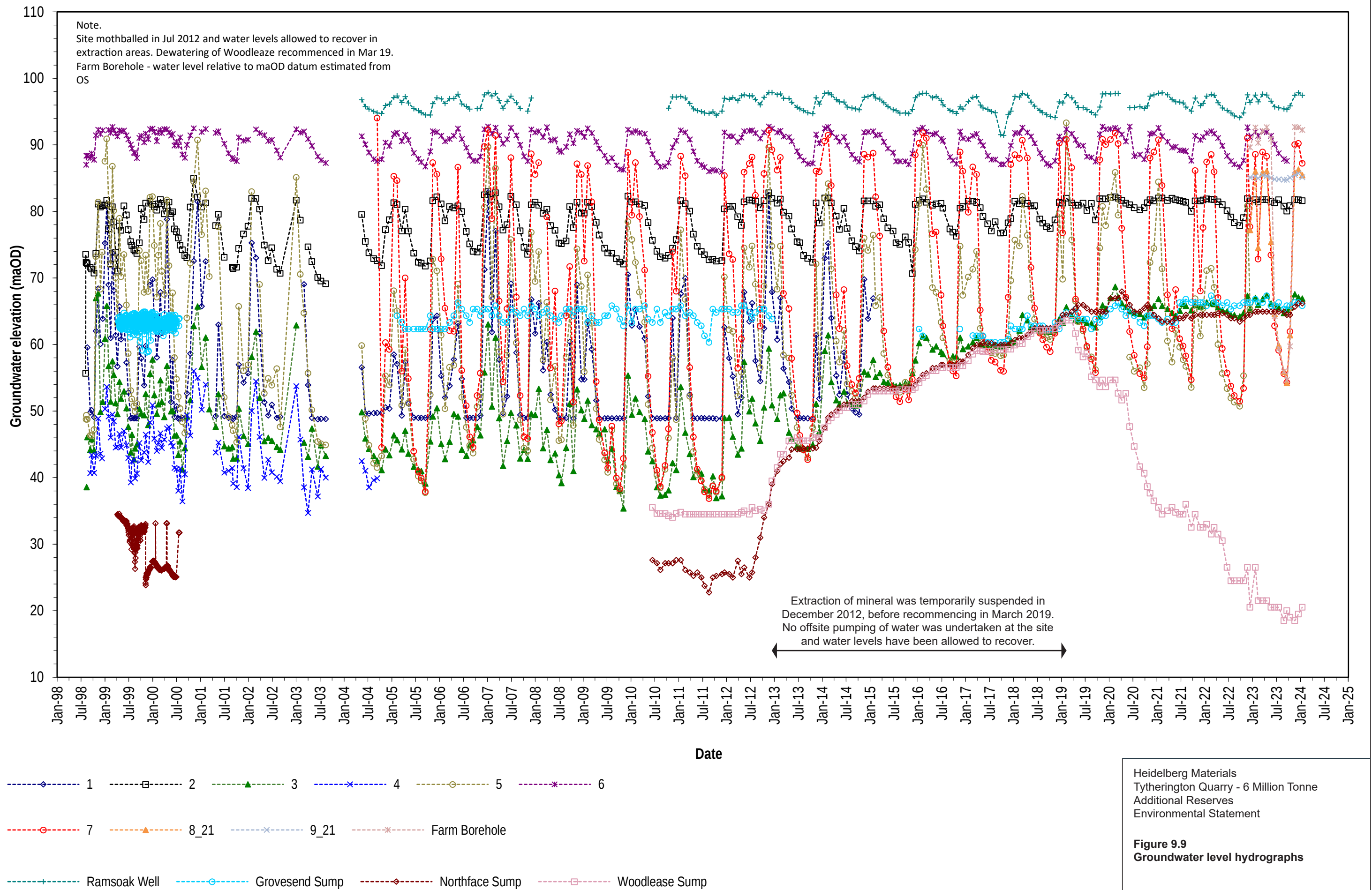
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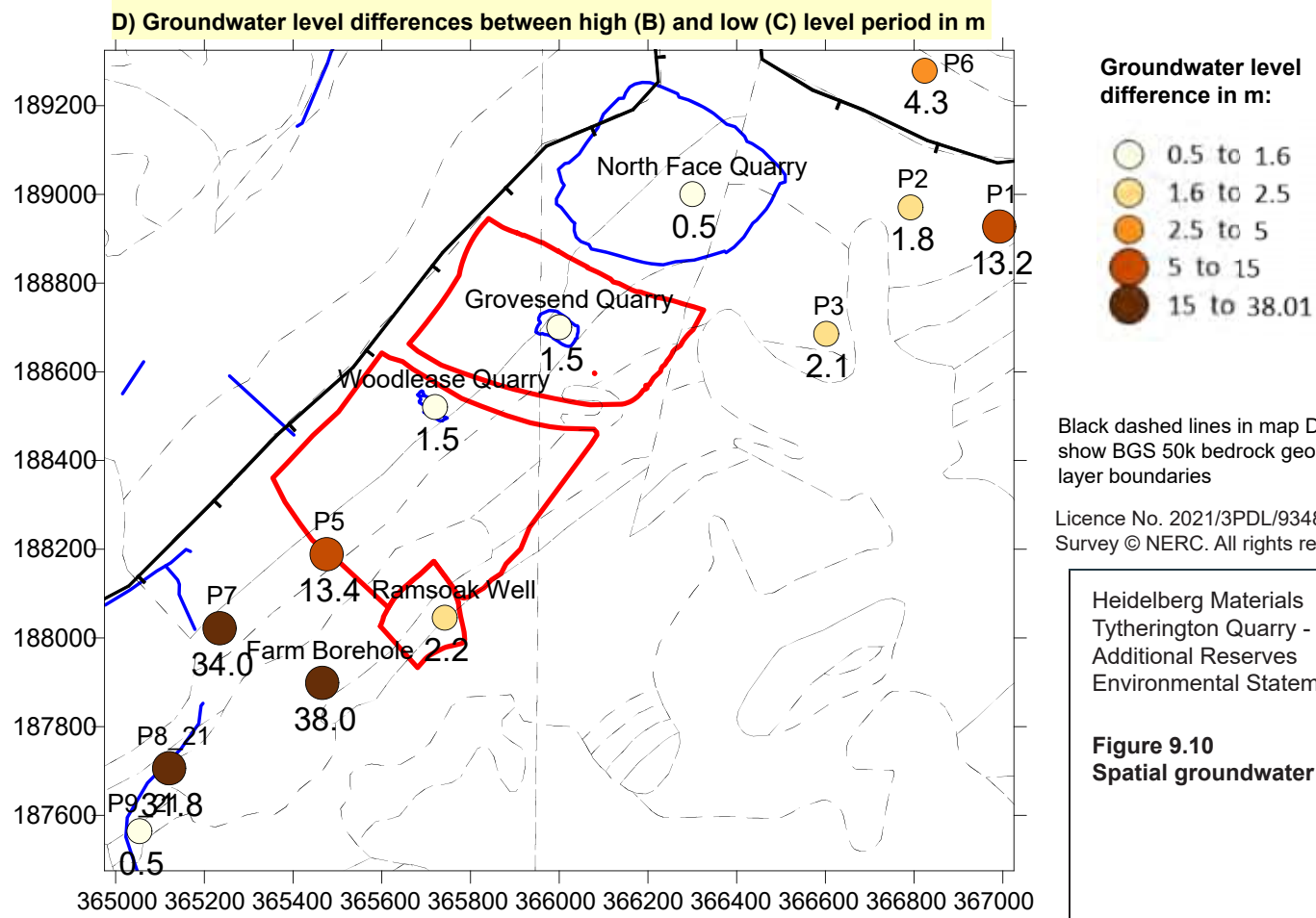
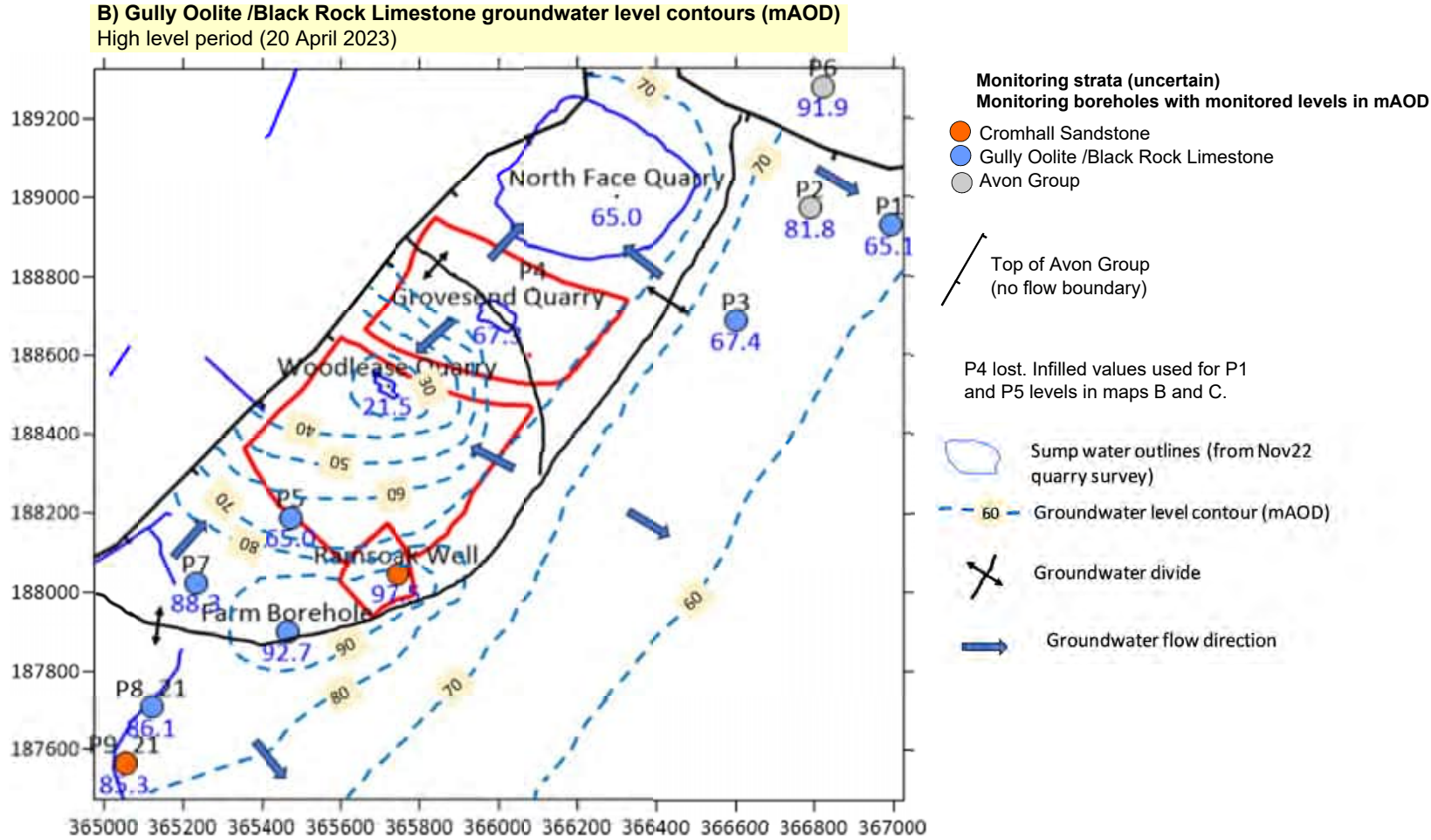
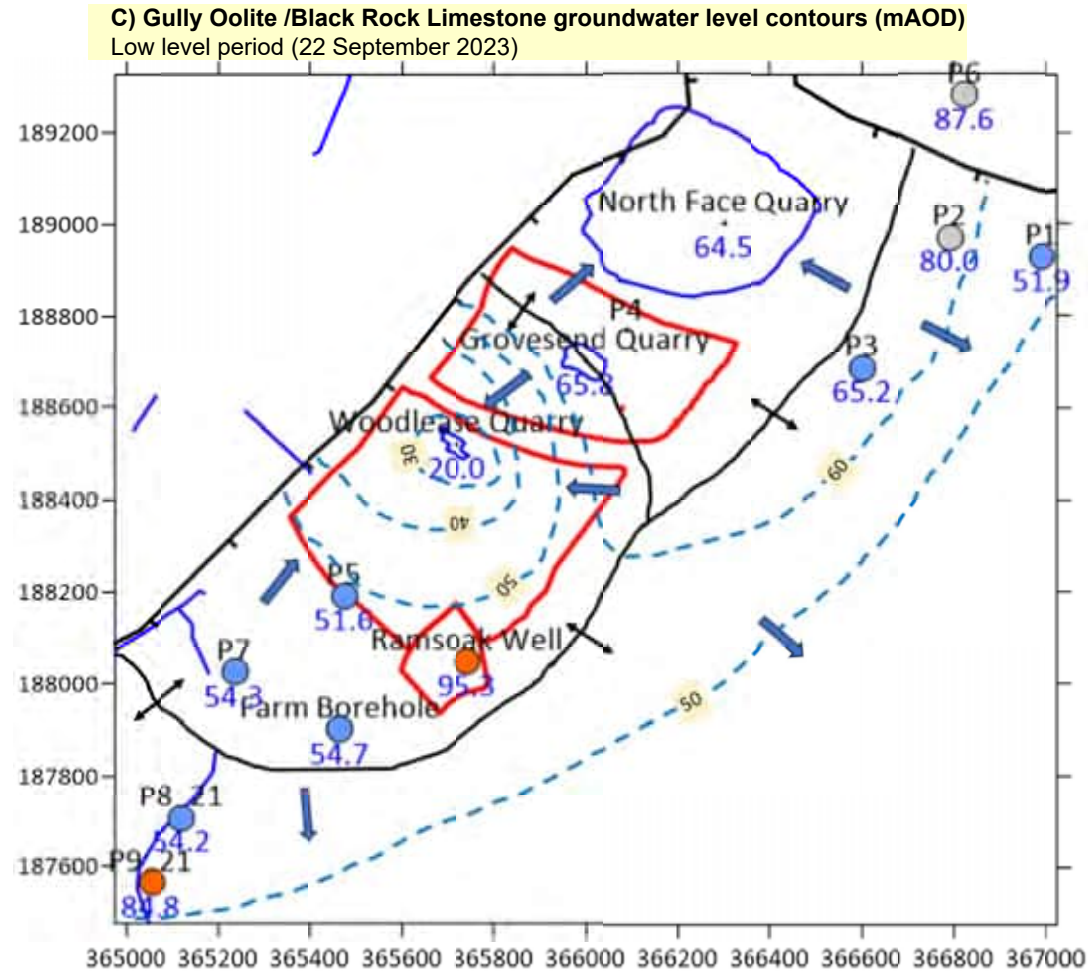
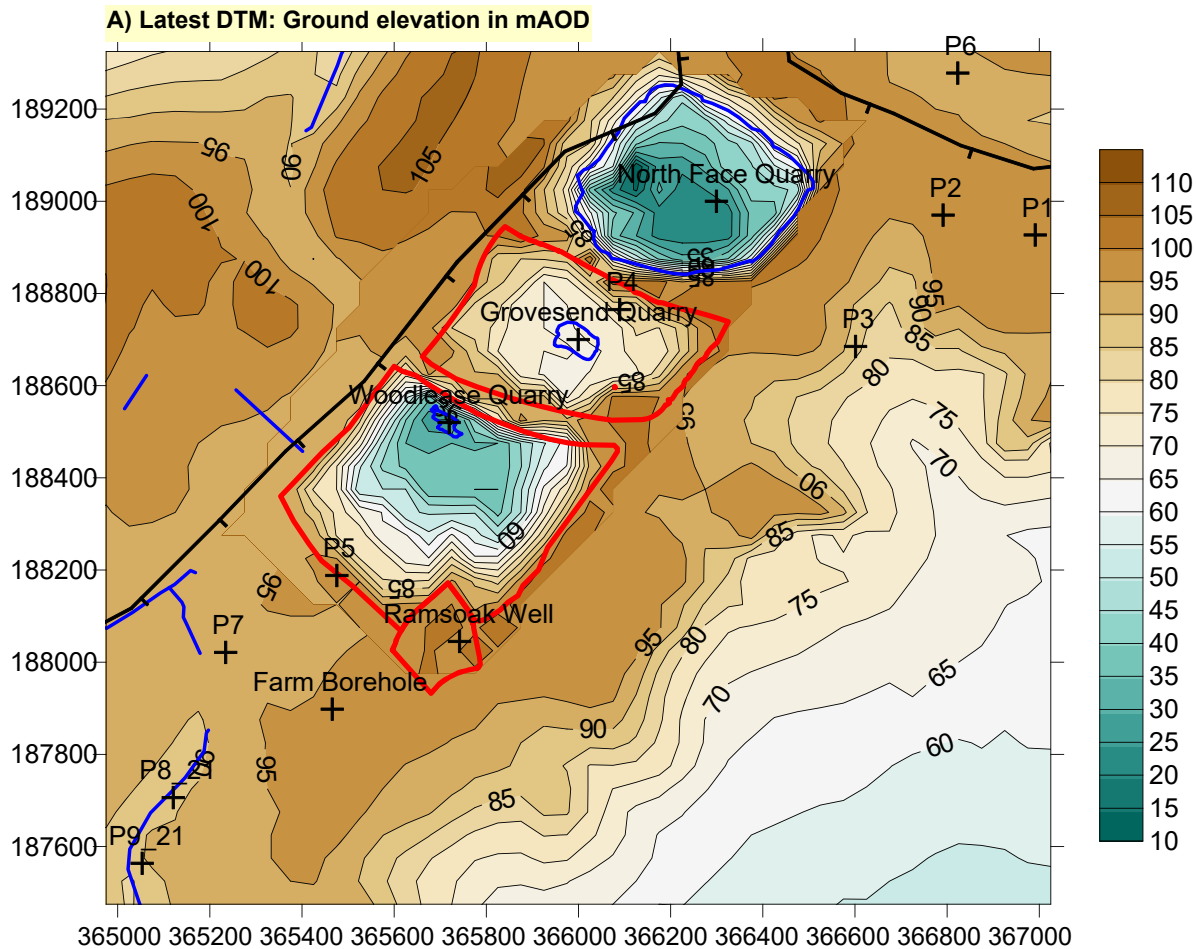
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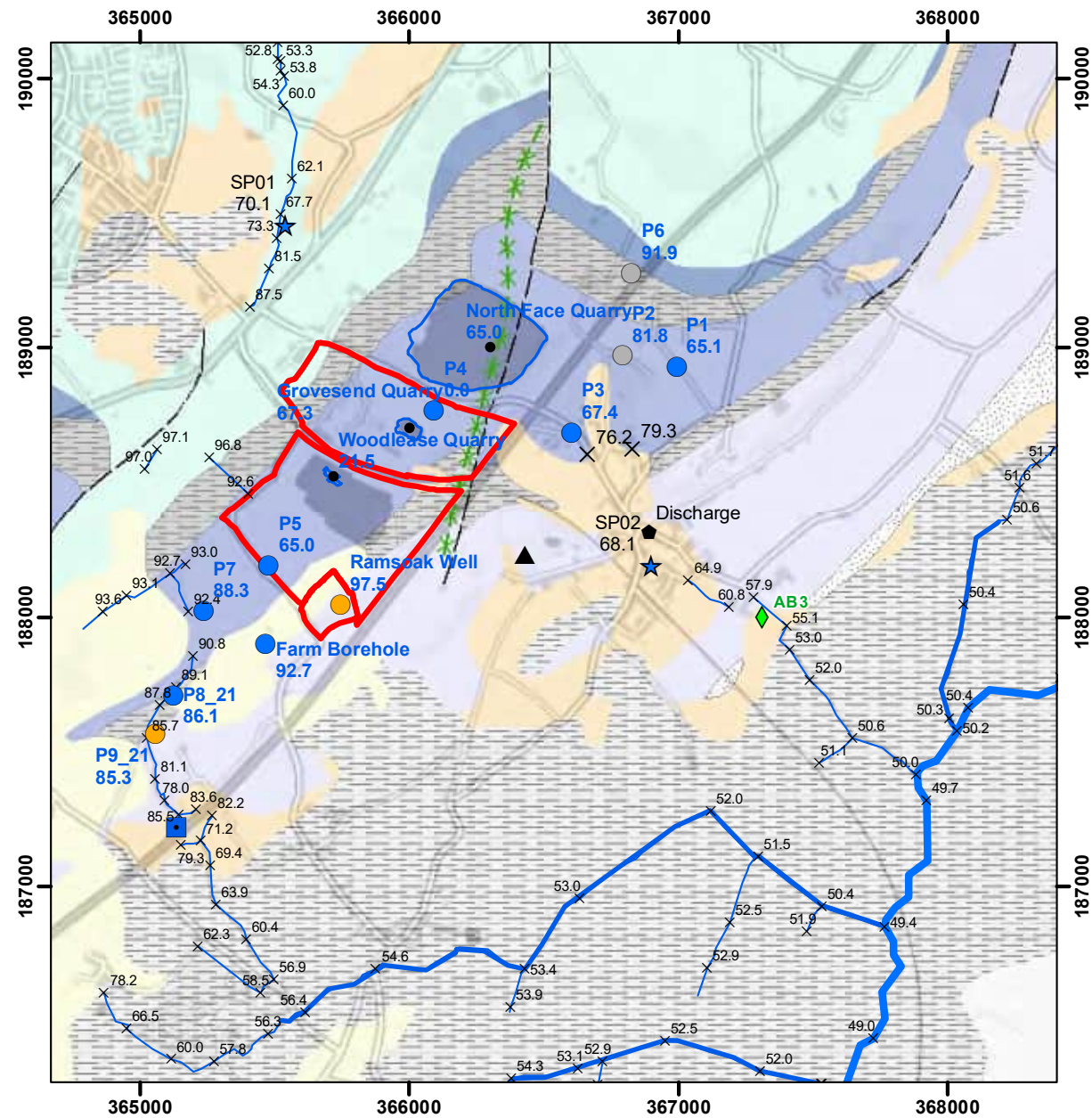
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Figure 9.10
Spatial groundwater level analysis

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Key:

- Extant planning permissions
- Deep Tytherington 1972 borehole (BARA)
- Licensed groundwater abstraction (Carboniferous Limestone, farming)
- Consented discharge point
- Outcrop point of layer boundary between combined aquifer Avon Group Conglomerate
- Springs
- GW monitoring point (monitoring strata uncertain)**
 - Cromhall Sandstone
 - Black Rock Limestone/Gully Oolite
 - Avon Group
 - Surface water monitoring point
- Watercourse
- Fold axis inferred from BGS 50k bedrock geology**
 - Synclinal axis
- Faults (BGS 50k)**
 - Fault inferred downthrow unspecified *Fault, inferred, displacement unknown*
 - Fault inferred HW
 - Fault observed downthrow unspecified *Fault, observed, displacement unknown*
- Sump water outlines (from Nov22 quarry survey)
- Triassic (undifferentiated)
- Secondary A Aquifer**
 - Marros Group: Sandstone
- Principal Aquifers**
 - Mercia Mudstone Group: Conglomerate MMMF-CONG (Triassic)
 - Upper comb. aquif.: CHSA-SDST, CDL-LMST, OHL-LMOOL/LMST & TL-LMST
 - Combiined aquifer: BRL-LMST, BRL-DOLO & GUO-LMOOL
 - Avon Group Limestone: AVO-LMST
- Aquitards**
 - Mercia Mudstone Group: Mudstone or Mudstone, sitstone and sandstone
 - Clifton Down Mudstone: Dolomite-mudstone
 - Avon Group: Mudstone and limestone, interbedded
 - Pre-Carboniferous (undifferentiated)

Notes:

The conceptual model is described in the report referring to this map figure.

Water levels from April 2023 monitoring period (high level period).

0 500 1,000 1,500 m
Scale at A3: 1:25,000
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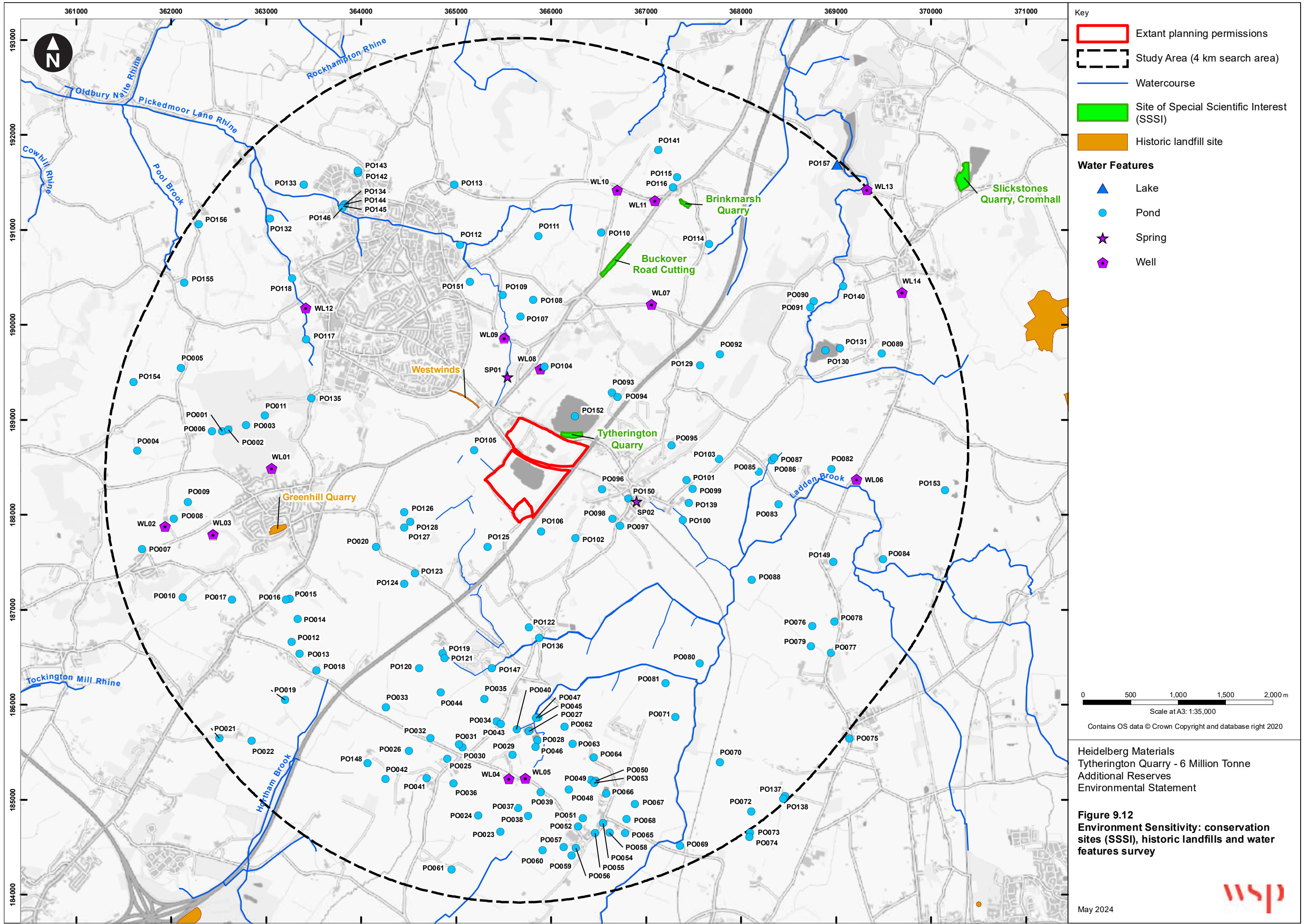
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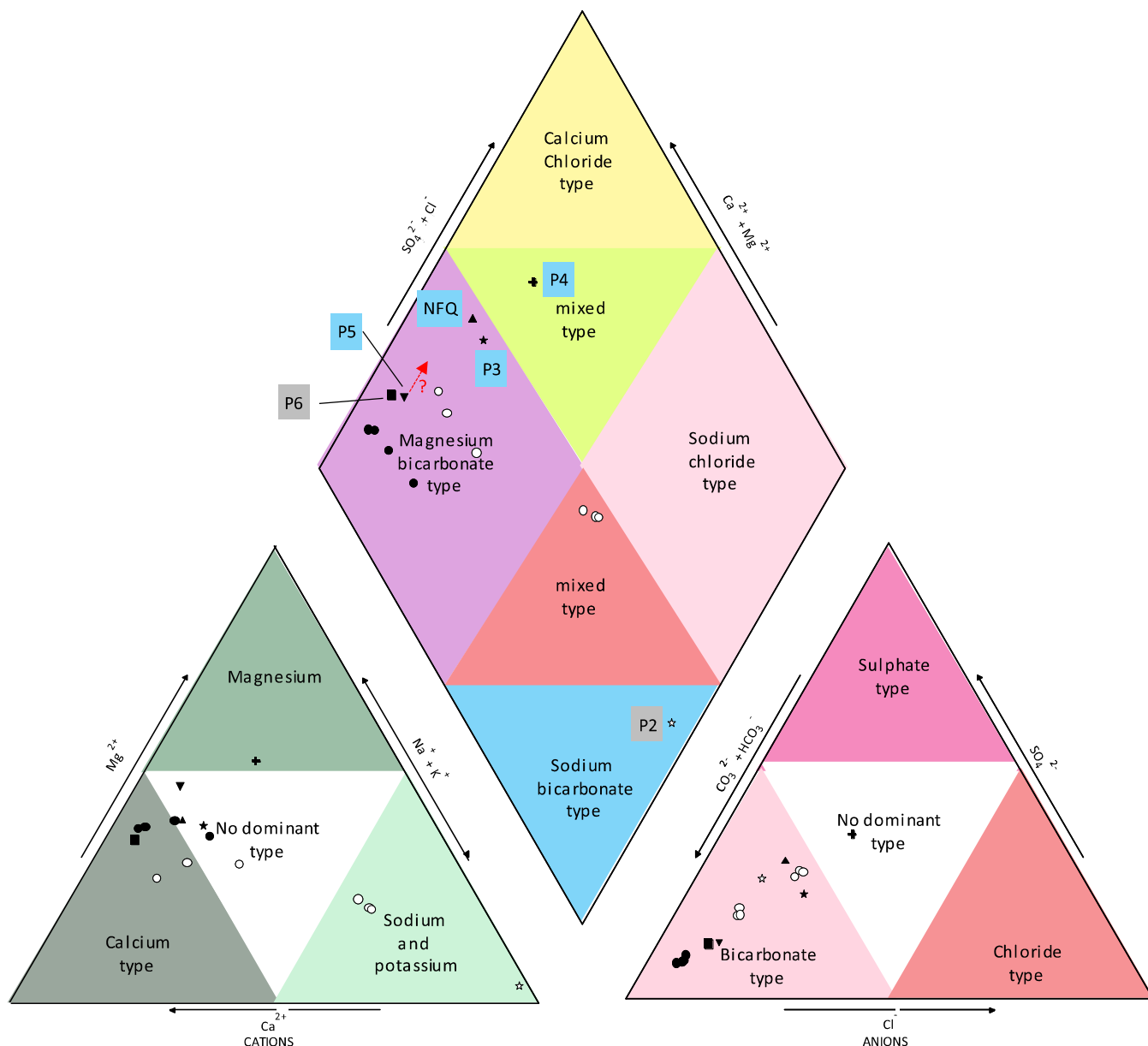
Figure 9.11
Conceptual model map

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Environment Agency Water Quality Sampling Boreholes [strata]

○ Game Farm [Mercia Mudstone Group/Triassic]

● Thornbury Golf Centre [Tintern Sandstone/Upper Devonian]

Entec 1998 Tytherington Quarry Site Investigation [strata (uncertain)]

■ P6 [Avon Group]

☆ P2 [Avon Group]

★ P3 [Gully Oolite/ Blackrock Limestone]

✚ P4 [Gully Oolite/ Blackrock Limestone]

▼ P5 [Gully Oolite/ Blackrock Limestone]

▲ North Face Quarry Sump [Gully Oolite/ Blackrock Limestone]

Note:

Colour shading of aquifer descriptions aligns with geological maps, not the water type colours of the piper chart.

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Figure 9.13
Groundwater types

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