

Geology Update

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Ground Investigation Progress

Tunnel ground investigation works completed to date:

- ✓ 110 boreholes
- ✓ 16 windowless sampling

Review of a existing Ground Investigation data & gap analysis complete;

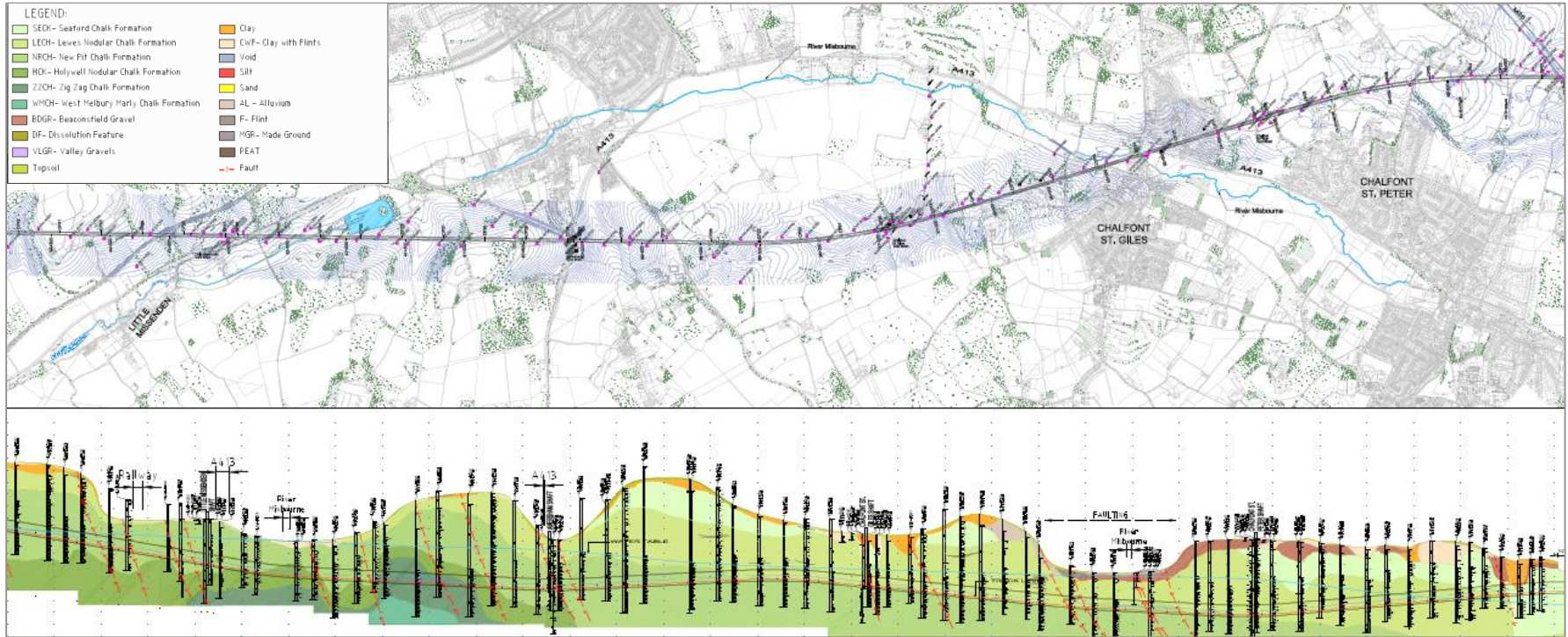
- ✓ Areas of uncertainty for ground model & design identified
- ✓ To manage the uncertainty supplementary GI & continued GW monitoring will be carried out

Note;

- Ground Investigations are a continuous process subject to results and review of the data obtained
- Exact arrangements are subject to site conditions/constraints and will be updated/refined accordingly



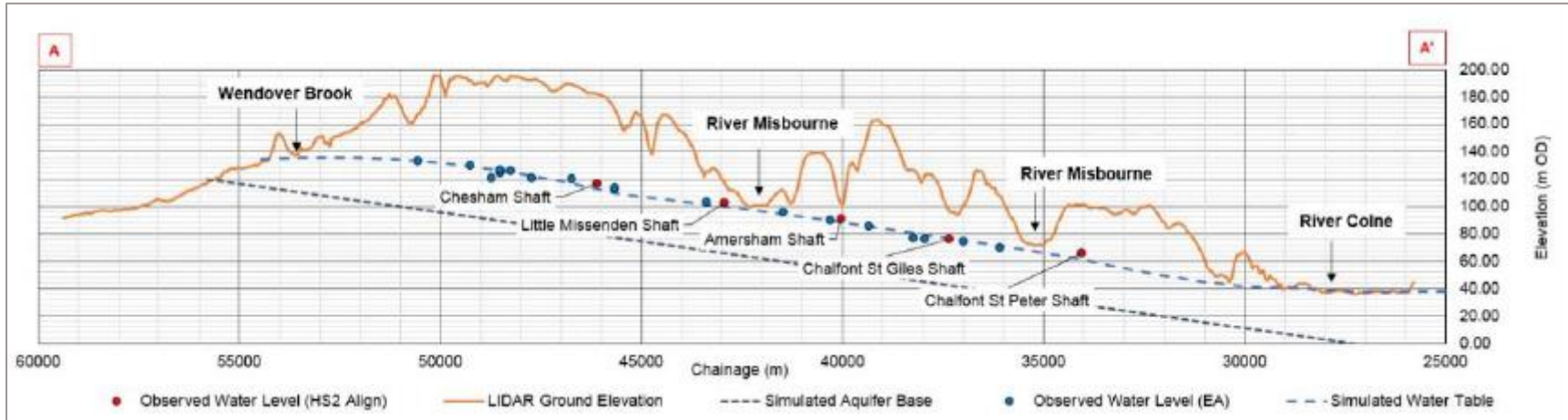
Ground Model Progress



Ground Model Progress

Hydrology & Hydrogeology

- ✓ Chalk is a highly permeable fine grained soft limestone.
- ✓ Chalk is a dual porosity aquifer;
 - Matrix pores provide storage & fractures provide permeable pathways
 - The majority of flow occurs through dilated fractures within the chalk within the top 50m of the saturated zone
- Several rivers, including the Misbourne drain the chalk outcrop. In times of drought the groundwater can be lowered beneath the level of the river, and the river can dry up.
- The upper & middle chalk is the most permeable – flows occur through dilated fractures within the top 50m of the saturated zone



Additional Ground Investigation

- Why more Ground Investigation???
 - Identify the ground conditions & risk in advance
 - Facilitate detailed design works & construction costs
 - Minimise associated construction risks
- 43 identified locations
 - 4 to 6 rotary rigs
 - 2 cable percussive rigs
 - Supplemented with Cone Penetration Testing (CPT), geophysics & pumping test campaign
- 12 months on site at various locations

