

2<sup>nd</sup> October 2023

Mr. P. Sinclair  
Technical Director  
Westchurch Homes  
Kennedy House  
31 Stamford Street  
Altrincham  
WA14 1ES



**APP/T4210/W/22/3308871**

**Technical Note 001: Site Investigation relating to hydrogeology**

I have reviewed Condition (18) relating to site investigation to establish potential mitigation measures for groundwater and have a proposal for intrusive works that supplement the existing works to provide a more comprehensive picture.

**Condition (18)**

*18) Prior to the commencement of development, a scheme of intrusive site drainage investigations and preliminary engineering works to investigate ground water flows feeding Starmount reservoir and springs in the vicinity of the proposed swale, including the timing of such works, shall be submitted to and approved in writing by the local planning authority. A report of the findings of such investigations shall be submitted to the local planning authority.*

*Any such report should include where appropriate any additional drainage works that are necessary to safeguard the functionality of the swale and the water quality and ground water flows into the adjacent existing waterbodies. Including detailed design that demonstrates that the proposed works will safeguard the structural integrity of Starmount reservoir and the quantity and quality of the water feeding the reservoir.*

*Any such additional works shall be approved in writing by the local planning authority and shall thereafter be implemented prior to the completion of the drainage works to which they relate. The additional works shall be implemented in full in accordance with the approved details prior to the pitches hereby approved being brought into use and shall thereafter be retained and managed and maintained in accordance with the Management and Maintenance Scheme required by condition no. 6 above.*

Following discussions with the local authority, a question upon how the fishing pond system is fed arose. This should not be confused with the reservoir, which is understood (anecdotally) to be fed by a deep borehole into the primary aquifer. It is important that existing connectivity from the site to the upper fishing pond is maintained.

Reference of spring lines has historically been mentioned by third parties at the northern boundary of the upper fishing pond. From a review of the existing ground investigation / solid



and drift geology (superficial is predominantly glacial clay and rock head is much deeper than the spring line) we do not believe that these are springs as such, but a concentration of surface water runoff from a combination of field drainage and topography of the catchment.

To further prove this to the local authority we propose the following additional ground water monitoring works to confirm the source and nature of the water feeding the ponds.

1. 1 x 30m open hole rotary, installed with 50mm water monitoring well with geo wrap, gravel filter, Bentonite seal(s), tracked dumper etc, CA permit application, drillers records.
2. 6 x 5m additional window sampler wells
3. 3no ground water monitoring rounds over a 3 month period – assuming the monitoring will be undertaken over the winter months

Please find attached the proposed exploratory hole plan which identifies the proposed location of a rotary borehole (BH101) to a depth of ~30m and 6no. window sample locations (WS04-WS09) ~3-5m deep.

The locations are all specifically intended to target the groundwater concerns raised and to enhance our current understanding.

The proposed scope of works will provide confidence in the source of water and groundwater levels in a worst-case scenario (winter).

I have tried to contact Andy Southgate at Bury Council by email and voicemail to seek confirmation that BMBC are satisfied with the current scope of investigation in accordance with the requirements of Condition 18 so we can schedule these works ASAP; for ease of reference, I have attached the appeal decision and conditions.

Yours sincerely

Richard Nicholas BEng (Hons) MSc MBA GMICE MCIWEM

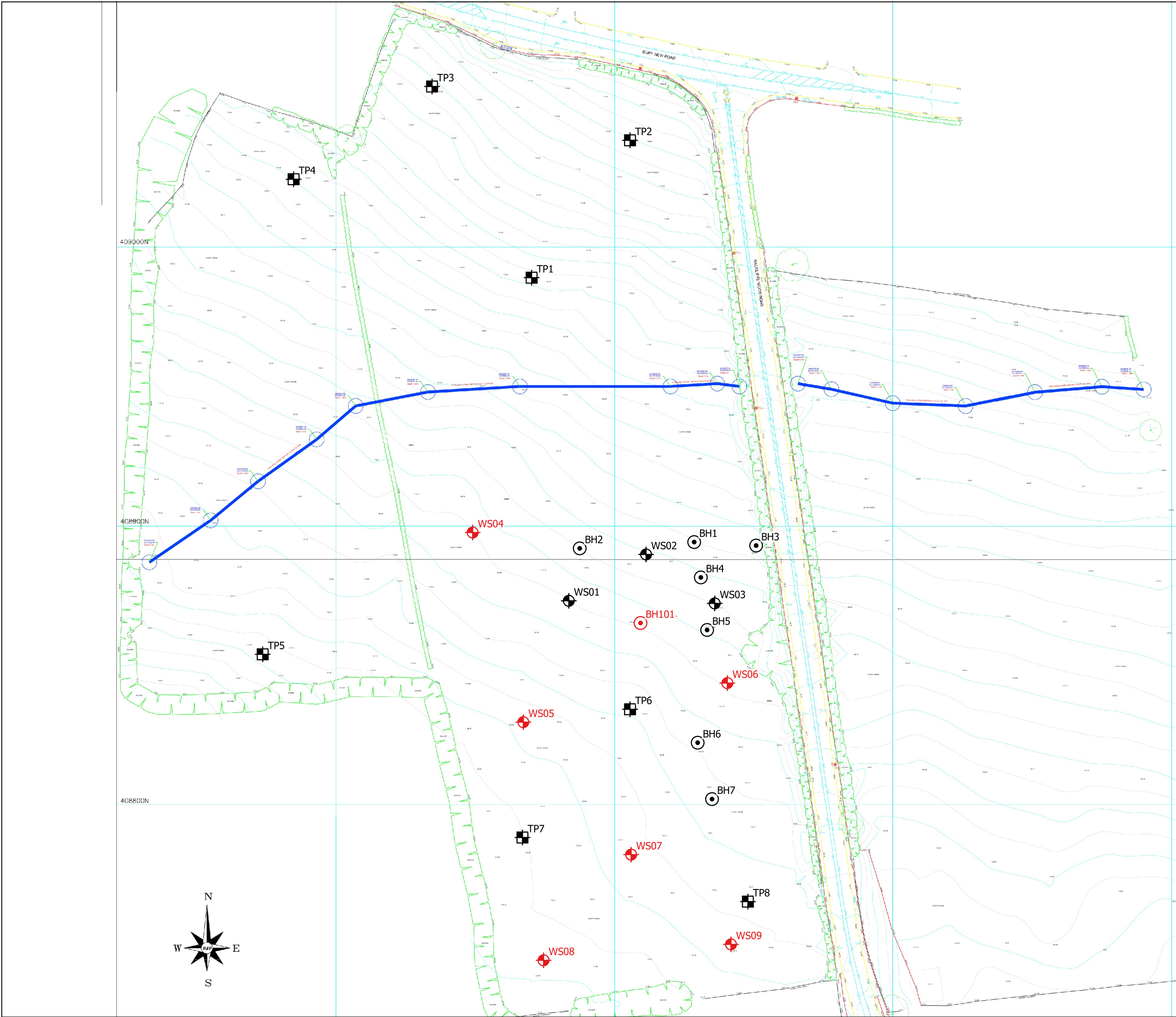
Director

**BETTS HYDRO LIMITED**

Enc.

Appendix A – Proposed Exploratory Hole Location Plan

Appendix B – Appeal Decision and Conditions



NOTES

DO NOT SCALE

THIS SKETCH SHOWS THE LOCATIONS OF PROPOSED EXPLORATORY HOLES AND INDICATIVE LOCATIONS OF EXPLORATORY HOLES UNDERTAKEN BY BETTS GEO IN 2021 OVERLAIN THE TOPOGRAPHICAL SURVEY.

**BETTS GEO - PROPOSED**

- WINDOW SAMPLE BOREHOLE
- ROTARY BOREHOLE

**BETTS GEO - 2021**

- ROTARY BOREHOLE
- WINDOW SAMPLE BOREHOLE
- TRIAL PIT

| REV | DATE | BY | DESCRIPTION | CHK |
|-----|------|----|-------------|-----|
|     |      |    |             |     |

|                              |  |  |  |  |
|------------------------------|--|--|--|--|
| DRAWING STATUS: <b>DRAFT</b> |  |  |  |  |
|------------------------------|--|--|--|--|

  
**BETTS GEO**  
CONSULTING ENGINEERS  
Unit 6, Old Marsh Farm Barns, Welsh Road, Sealand, Flintshire CH5 2LY  
Tel: 01244 288178enquiries@betts-associates.co.uk

  
**Westchurch Homes**

PROJECT:

LAND AT RADCLIFFE MOOR ROAD

TITLE:

PROPOSED EXPLORATORY HOLE LOCATION PLAN

|                         |                          |              |                 |
|-------------------------|--------------------------|--------------|-----------------|
| DATE:<br>13/09/23       | SCALE @ SIZE:<br>NTS     | DRAWN:<br>RD | CHECKED:<br>MJF |
| PROJECT No:<br>20WCH011 | DRAWING No:<br>PROEXP001 | REV:<br>-    |                 |