

# EUCHANHEAD RENEWABLE ENERGY DEVELOPMENT

**Technical Appendix 10.4: Private Water Supply Risk Assessment**

Prepared for: ScottishPower Renewables

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## 1.0 Introduction and Methodology

### 1.1 Scope of Assessment

This Technical Appendix contains information relating to private water supplies (PWS) and the potential impacts on these during construction and operation of the proposed Development.

This Technical Appendix presents a site specific hydrogeological and hydrological report that contains a review of the risk to private water supply sources. It considers the potential effects of the proposed Development on the quality and quantity of water at the PWS sources. The conceptual model, which uses a source-pathway-receptor linkage, is used to assess the risk to each PWS. Where necessary mitigation is proposed.

Following consultation with Dumfries and Galloway Council (D&GC) and East Ayrshire Council (EAC), data was received for 11 PWS sources with 10 km of the centre of the main turbine area. This data was then augmented with information from Ordnance Survey mapping, aerial photography, review of the EIAs of neighbouring developments and information provided by Forestry and Land Scotland (FLS). An extensive programme of site specific field investigation that involved visiting properties, enquiring about their water use and source, and mapping water abstraction locations, has been completed.

A total of five PWS sources were identified within 1 km of the application boundary (see **Chapter 10, Figure 10.1**). This data then informed a PWS survey conducted on 19 – 22 May 2020 where SLR hydrologists visited the properties to confirm data provided by the councils and the desk study. When residents were unavailable on the days that the surveys were conducted questionnaires were left at properties requesting details of their water source or PWS. The results of the PWS survey, returned questionnaires, FLS and council's data is presented in Table 2-1 of this report.

This Technical Appendix should be read in conjunction with **Chapter 10** of the Environmental Impact Assessment Report (EIAR) as the Chapter contains a detailed description of the local hydrology and hydrogeology, flow mechanisms and hydraulic properties of the soils and geology at Site, the embedded mitigation incorporated in the site design, and an assessment of impacts on groundwater and surface water flows and quality.



## 2.0 Private Water Supply Details

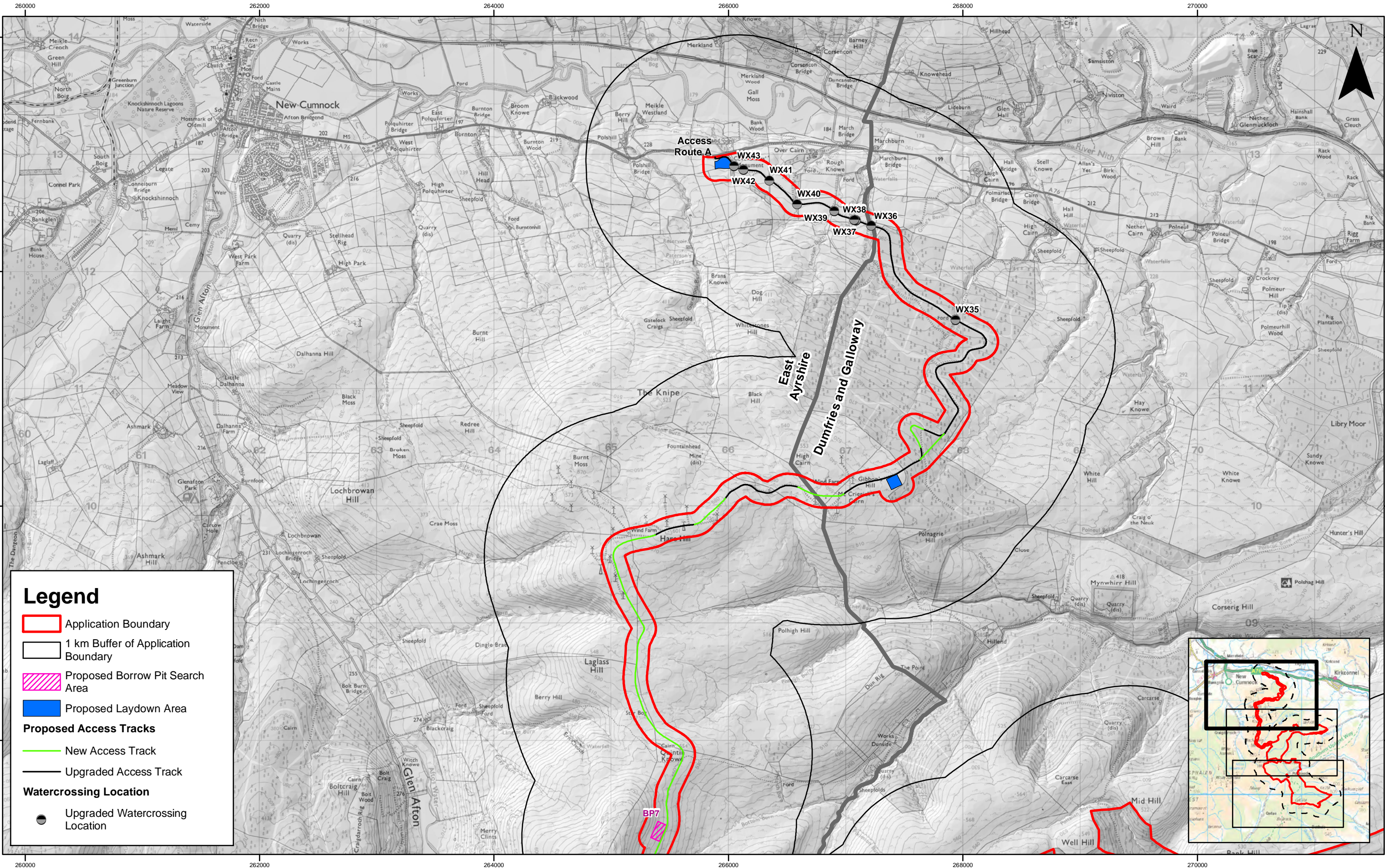
Table 2-1 presents all the information collected from the PWS survey, returned questionnaires, D&GC, EAC and SLC PWS data and desk study. A description of the water sources is presented, and a risk assessment completed which considers the potential for the proposed development to impair the water sources. Where warranted recommendations are made.

**Table 2-1: Private Water Supply Details**

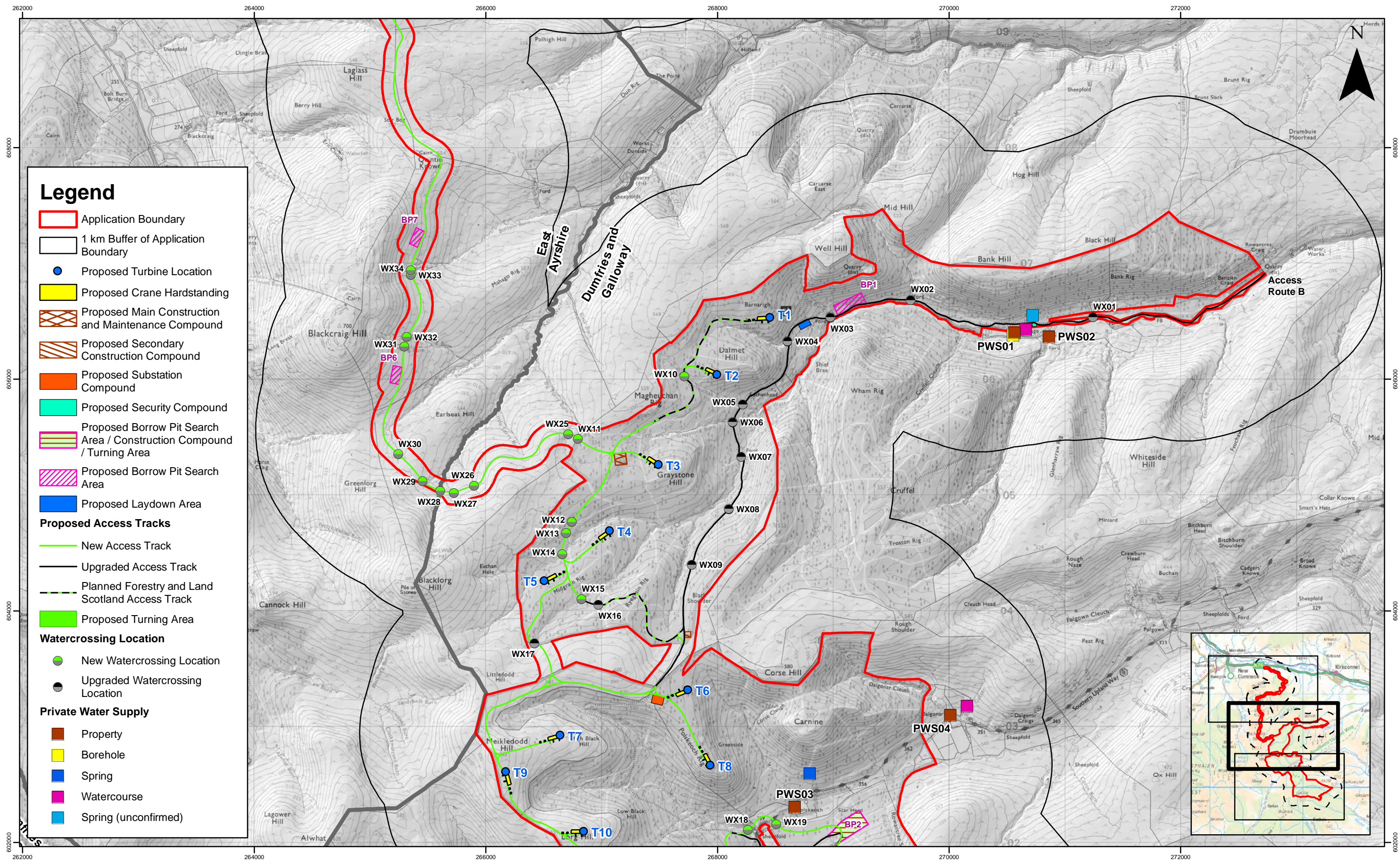
PWS ID (Figure 10.1)	Property Name	Data Source(s)	PWS Source Type	Location of PWS Source (NGR) and Distance from Nearest Element of Proposed Development	Notes	Potential Complete Source – Pathway – Receptor Linkage?
PWS01	Euchanbank	Questionnaire	Borehole (1) Watercourse (2)	<b>Property:</b> NS 70567 06405 75 m south of the existing access track. <b>Abstraction point (1):</b> NS 70555 06387 90 m south of the existing access track. <b>Abstraction point (2):</b> NS 70665 06430 50 m south of the existing access track.	<p>Abstraction point (1) serves the Euchanbank property (also known as Bank Cottage) and is sourced by a borehole located immediately southwest of the property. Water is pumped from the borehole via a pipe to the property and the water is treated prior to use.</p> <p>Proposed turbines T1-5, their hardstanding and access tracks and borrow pit BP1 are located within the Euchan Burn catchment. The borehole is located some 1.3 km from the nearest new development (BP1). Given the distance from the borehole and the absence of a direct pathway to the borehole it is considered that any impacts caused by the development would be negligible on the borehole and no further investigation is proposed.</p> <p>Water is also abstracted from an unnamed tributary of the Euchan Water (abstraction point (2)) which flows eastward to the north of the property. This abstraction is used for livestock only and is untreated. No new development is proposed in the catchment of the tributary but it is noted that the access track lies upstream of the abstraction point (2) and that suspended solids or pollution from the track could impair the abstraction without adherence to best practice measures.</p>	<p>ABSTRACTION POINT (1) – NO</p> <p>ABSTRACTION POINT (2) – YES. MONITORING OF THE WATER ABSTRACTION IS PROPOSED PRIOR TO AND DURING CONSTRUCTION</p>
PWS02	Glenglass	D&GC	Spring (unconfirmed)	<b>Property:</b> NS 70850 06366 100 m south of the existing access track.	<p>Details of the PWS at Glenglass was provided by D&amp;GC and a review of the Sanquhar II Windfarm EIA which states that the property is sourced by a groundwater fed spring. A questionnaire has been left with the residents, but no response has been made. The windows of this property are blacked out and overgrown garden vegetation is encroaching on the building, and it does not appear to be occupied at present.</p> <p>The nearest spring noted on OS mapping is located approximately 225 m to the northwest of the property at NGR NS 70720 06560. The spring is located upstream of the existing access track and is within the Euchan Water surface water catchment. The catchment area to the spring extends northwards toward Bank Hill and does not include the proposed Development. No further investigation is proposed.</p>	NO
PWS03	Polskeoch	Site visit	Spring	<b>Property:</b> NS 68677 02308 200 m northeast of proposed new access track and WX19 <b>Holding Tank:</b> NS 68800 02600 500 m north of the proposed turning area compound and 850 m southeast of turbine T8.	<p>The PWS that serves Polskeoch property is sourced by a number of springs that rise on the hillside located to northeast of the property. The springs are diverted to a holding tank by a series of handmade ditches. The holding tank is located at NS 68800 02600 and is approximately 2 m by 1.5 m wide and 1.6 m deep. From the holding tank water is diverted to the property by a series of underground pipes which go initially downhill to the Polskeoch Burn and then across the field to the east of the property. The PWS source is located in the Polskeoch Burn surface water catchment.</p> <p>No proposed Development is proposed in the catchments to the holding tanks or the spring water sources. It is therefore considered that the PWS is not at risk from the proposed Development.</p>	NO

PWS ID (Figure 10.1)	Property Name	Data Source(s)	PWS Source Type	Location of PWS Source (NGR) and Distance from Nearest Element of Proposed Development	Notes	Potential Complete Source – Pathway – Receptor Linkage?
PWS04	Dalgonar	Questionnaire	Watercourse	<b>Property:</b> NS 70012 03103 1.1 km northeast of the proposed turning area compound and 2.1 km east of turbine T8 <b>Abstraction Point:</b> NS 70164 03178 1.3 km northeast of the proposed turning area compound and 2.3 km east of turbine T8.	<p>Water is abstracted from a tributary of the Polskeoch Burn which is located to the northeast of the property. Water is piped from the watercourse to a holding tank which is located at NS 70164 03178, and then diverted to the property by a series of underground pipes.</p> <p>No proposed Development is proposed in the water catchment to the tributary of the Polskeoch Burn in which the PWS is sourced from. It is therefore considered that the PWS is not at risk from the proposed Development.</p>	NO
PWS05	Shinnelhead	D&GC FLS	Spring	<b>Property:</b> NX 72943 99153 2 km east of turbine T21. <b>Abstraction Point:</b> NX 72850 98940 1.9 km east of turbine T21.	<p>Details of the PWS at Shinnelhead was provided by D&amp;GC and a review of the Sanquhar II Windfarm EIA which states that the property is sourced by a groundwater fed spring. Further correspondence with FLS has determined that the PWS is located approximately 20 m from a tributary of the Shinnel Water.</p> <p>Proposed turbines T15 to T21, their hardstanding and access tracks, and borrow pits BP4 and BP5 are located in the Shinnel Water surface water catchment. It is noted that the PWS is located 1.9 km km from the nearest element of the proposed Development (T21) and no development is proposed in the local water catchment to the tributary of the Shinnel Water in which the PWS is sourced from. It is considered that any impacts caused by the development would be negligible and no further investigation is proposed.</p>	NO









A	13/10/20	AA	Initial Issue
Rev	Date	By	Comment

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Scale @ A3

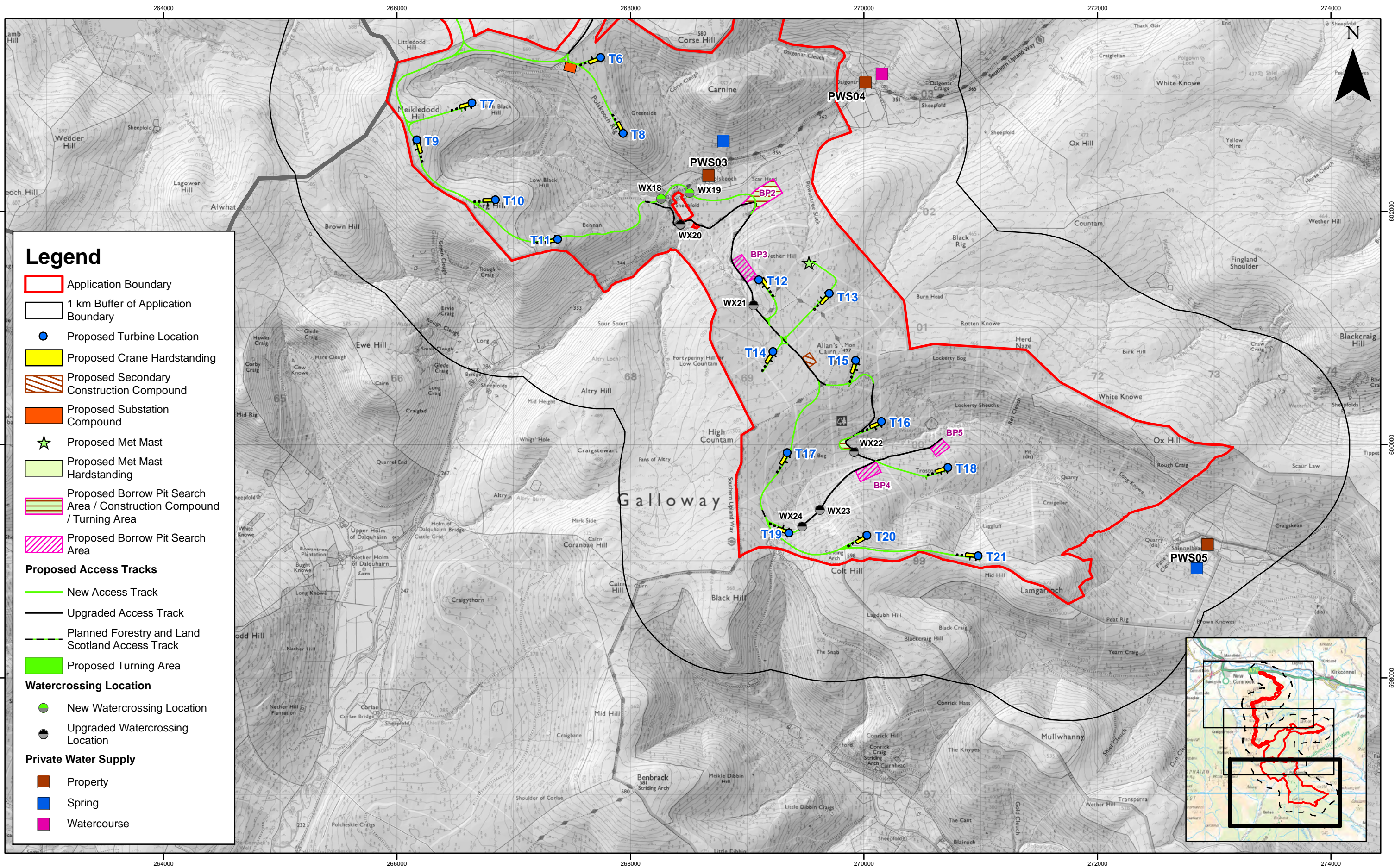
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Private Water Supply data provided by Dumfries and Galloway Council

Euchanhead Renewable Energy Development EIAR			Drg No	00481.00052.0234.0	
Private Water Supply Risk Assessment			Rev	A	Datum: OSGB36
Private Water Supplies			Date	13/10/20	Projection: TM
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