

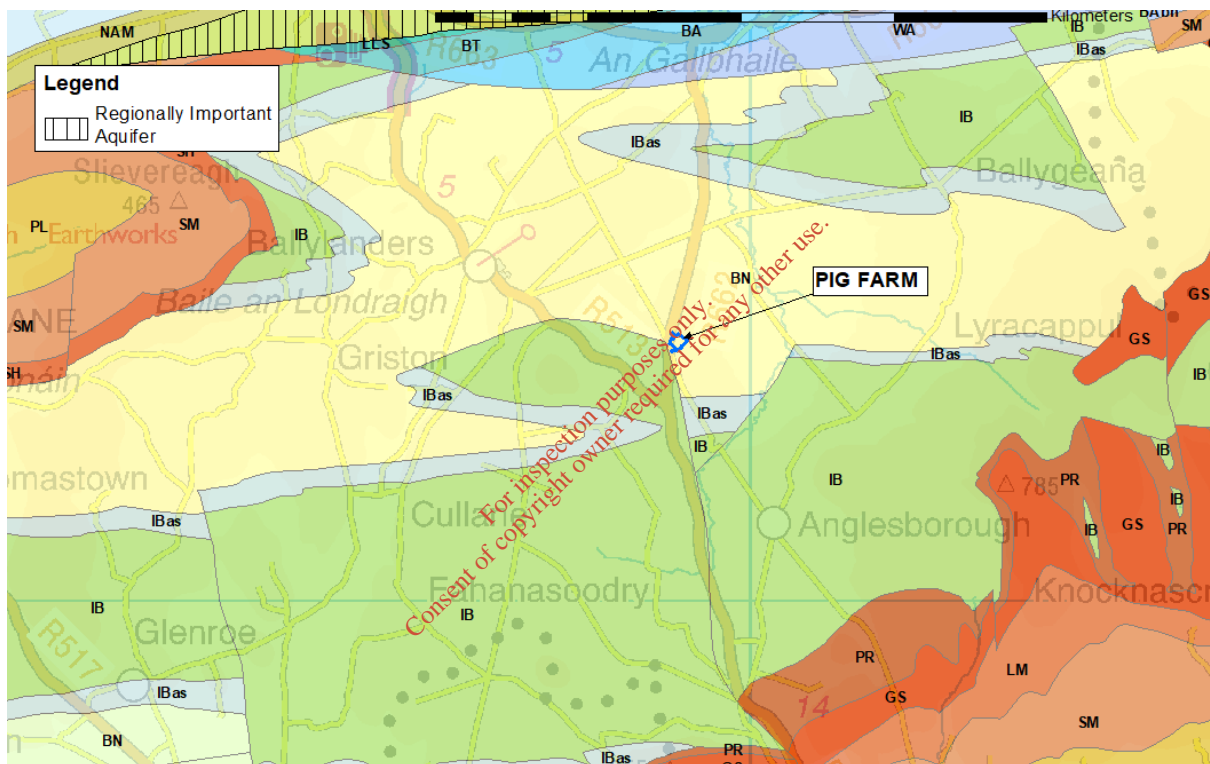
ATTACHMENT-4-8-4-SITE CONDITION REPORT

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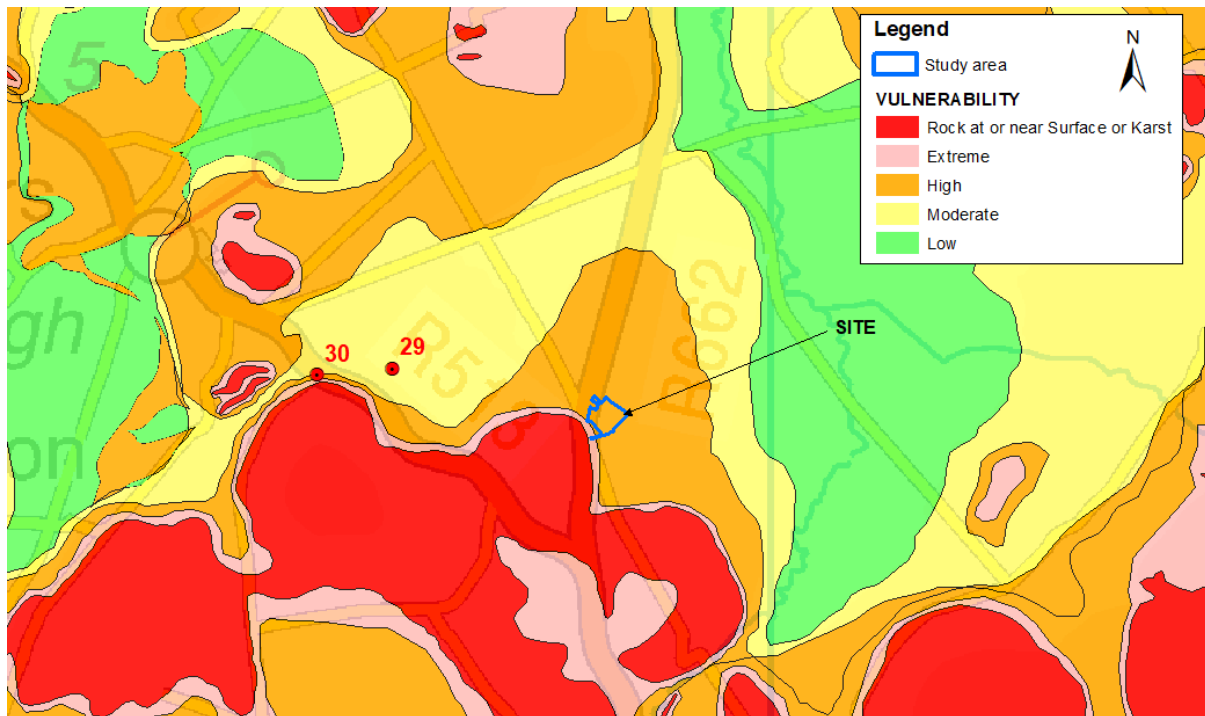
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1.0 Geology

The pig farm site is located in the townland of Ballyfauskeen. The townland overlies bedrock of the *Broad Haven* (BN) formation which is a dark grey/black shale and greywacke rock which is categorised as a locally important aquifer which is moderately productive only in local zones. The site is located more than 4km from a Regionally Important Aquifer.



The vulnerability at the site is medium.



2.0 Ground Water Quality

In East Limerick and North Cork there are 21 ground waterbodies (EPA maps.ie). Approximately 80% of the area overlies poorly productive ground waterbodies (aquifers) and 20% overlies productive karstic and fissured rock. Approximately 1.2% of the study area overlies ground waterbodies of poor status as per EPA Maps.ie. The Mitchelstown (SE_G_082) and Industrial Facility (SE_G_219) waterbodies are poor quality – more than 8km from the site. Approximately 55% of the general area overlies ground waterbodies that are not at risk from deteriorating water quality and 20% of the general area overlies ground waterbodies that are under review due to increased pressures. Approx. 25% of the general area overlies ground waterbodies that are at risk due to deteriorating water quality. This compares with approx. 40%, 37% and 23% of ground waterbodies in County Limerick that are not at risk, under review and at risk. Agriculture is the dominant significant pressure on ground water quality for five ground water bodies - 15% of the general area. The site is located on Knockashallen Ground Water Body (SE_G_087). According to EPA maps data this is a *Poor Aquifer*, *Good* water quality status and *Not At Risk*.

The well for the existing site is located 0.67km north west of the site in land owned by the developer. The existing site well is tested for E.coli and Coliforms – and tests show that there is no bacteria contamination (See Appendix 1). The water quality results and yields for public ground water supplies in the vicinity of the study area as shown in Table 1 are derived from waterquality.limerick.ie, from online GSI Groundwater Protection Schemes and from well data from GSI.ie.

Table 1: Water analysis for Public Groundwater Supplies in the vicinity of the Pig Farm

Public Supply	Map Label	NH ₄ -N (mg/l)	Coliforms	E.coli	NO ₃ (mg/l)	Ortho P (mg/l)	Population served	M ³ /day
Anglesborough	34	0.02	1.9	0.75	21	0.01	34	2
Ballyduff	33	0.02	22 ¹	0	17	0.02	86	18

Public Supply	Map Label	NH ₄ -N (mg/l)	Coliforms	E.coli	NO ₃ (mg/l)	Ortho P (mg/l)	Population served	M ³ /day
Ballylanders	29, 30	0.03	0.05	0	6.9	0.01	549	164
Bohernane	36	-	-	-	-	-	-	-
Cush	24	-	-	-	-	-	-	-
Duntryleague	27	-	-	-	-	-	-	131
Galbally	28	0.02	6.2 ²	0.71	12 ³	0.03	361	350
Griston (1 & 2)	25, 26	0.03	0.25 ⁴	0	19	0.01	165	36
Kilfinnane	31	0.02	5.2 ⁵	0.01	21 ⁶	0.06	-	414
Ruppulagh	32							
Threshold values		0.3	0	0	37.5	0.03	-	-
Average		0.02	5.9	0.25	16.1	0.02	-	160
Maximum		0.03	22	0.75	21	0.06	-	414
Minimum		0.02	0.05	0	6.9	0.01	-	2
Table Notes								
¹ One spike in 2016 – otherwise zero								
¹ One spike in 2017 – otherwise zero								
² One spike in 2012 & 2013								
³ Exceedance in 2011								
⁴ One spike in 2004 – otherwise zero								
⁵ One spike in 2018 – otherwise zero								
⁶ Large spike in 2013								

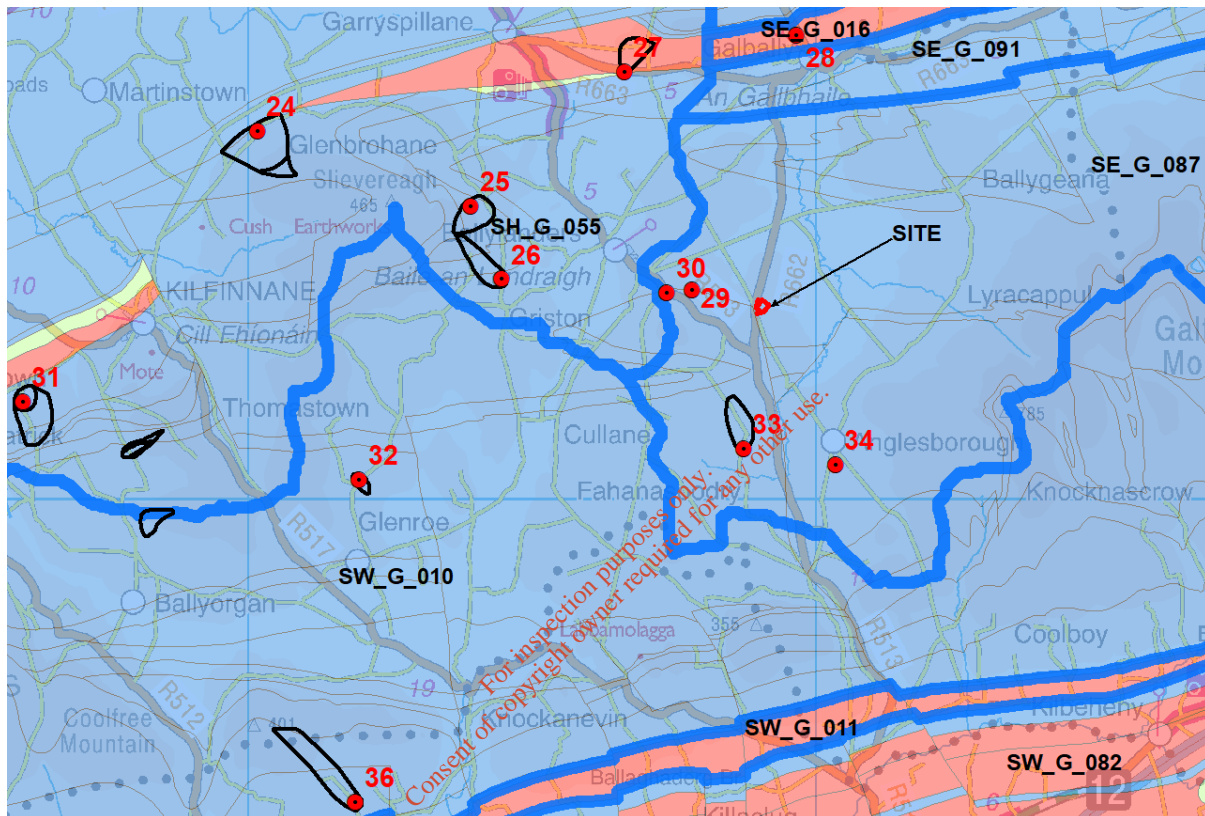
The nearest public water supplies (Ballylanders Ref Nos 29 & 30) are located more than 1km from the site. The site well supplies 14,000m³ to 15,500m³ per annum (42m³ / day) which is safely within the normal range of yields of public wells within the study area. Within 2km of the site there are 7 records on the GSI website – the average yield per day is 62m³ per day. Unconfirmed reports from the site owner state that the site well capacity as measured by the original drilling company was 3,000 gallons per hour = 330m³ per day. The requirement in the proposed development will be approx. 48m³ per day. Therefore there is sufficient groundwater supply for the proposed development.

The water analysis results from the public water supplies of East Limerick/North Cork

- Average Ammonium–N levels in this area is approx. 0.02 mg/l which is satisfactory and below threshold levels. High Ammonium–N in groundwater indicates contamination from organic materials such as farmyard effluents / manures or waste materials from domestic septic tanks and domestic and industrial waste water treatment systems;
- The presence of Coliform and or E.coli bacteria indicates contamination from waste organic materials, and in the case of Coliforms, indicates the presence of agricultural or human

excrement. Therefore the threshold for these bacteria is zero. Many of the public water supplies have had one-off spikes in bacterial counts, but generally levels are acceptably low;

- Nitrate-N levels are generally satisfactory, ranging from 7 to 24 mg / l NO₃-N and averaging 16.4 mg / l NO₃-N. Nitrate-N arises from land-spreading organic manures, waste water treatment materials and chemical fertilisers. There is a weak upward trend in Nitrates in the groundwater bodies in the area; and
- Ortho – Phosphate levels are generally low with the average increased to threshold levels due to one high Phosphate source in Knocklong.



Appendix 1 – Site Ground Water Analysis Results

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