

Water Framework Directive Groundwater Monitoring Programme

Site Information

Bruree BH



Bruree PWS is supplied through a borehole with an abstraction of 500m³/day. The GSI have published a source protection report for the site.

SITE INFORMATION					
Site Name:	Bruree BH		County:	Limerick	
RBD:	Shannon IRBD		EU Reporting Code:	IE_SH_G_046_13_003	
Easting:	154671		GWB Name:	Bruree	
Northing:	130510		GWB Code:	IE_SH_G_046	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	1900PUB1014	
Hydrometric Area:	24		Water Level Monitoring Network:	Level	Flow
Townland:	KNOCKFENORA			N	N
Ownership:	Limerick County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	Bruree PWS is situated in a Regionally Important Fissured Aquifer (Rf)/ Devonian Kiltorcan-type Sandstone. The PWS is included in the diffuse GW quality monitoring network.				
SITE DIRECTIONS					
Location and Access Information:	Drive west along the main street of Bruree, before crossing the river turn right into St. Munchins tce. Drive along the road to a right hand bend and there is a dirt track; the borehole is located at the end of the track, on the northern bank of the river, behind the old mill house. The bore is enclosed by a small brick house with removable felt roof and it is fenced off. The pumphouse is located in the next field.				
Additional Comments:	---				
WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	500	Ground Elevation (m OD):	45
Borehole Log Available:	---	Total Drilled Depth (m bgl):	90	Depth to Bedrock (m bgl):	---
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	150	Lower Casing Diameter (mm):	---
Final Borehole Depth (m):	---	Upper Casing Bottom Depth (m bgl) :	---	Lower Casing Bottom Depth (m bgl):	---
Screen Interval (m bgl):	---	Screen Type (PVC,Steel,other):	---	Screen Slot Size (mm):	---
Grout Type (cement,bentonite):	---	Grouted above (m bgl):	---	Grout Volume Injected (m³):	---
Gravel Pack Interval (m bgl):	---	Gravel Pack Volume (m³):	---	Open Hole Interval (m bgl):	---
Potential Yield (m³/day):	---	Comments on Monitoring Site:	A second council supply, a borehole next to the reservoir at the top of the hill, to the north of the site, is maintained as a backup supply but is rarely used as it has an inadequate yield.		
Specific Capacity (m³/d/m):	---				
Static Water Level (m bgl):	---				
Scheme Name:	Bruree	Number of Abstraction Points in the Scheme:	1	Source Report Available	Y
Source Report Info:	Source report prepared by GSI.				
Scheme Summary:	The source is the main public supply well for Bruree and is pumped up to a reservoir at the top of the hill.				

HYDROGEOLOGY								
GEOLOGY	Soil:	Alluviums (AlluvMIN)					Subsoil Permeability:	n/a
	Subsoil:	Alluvium (A)						
	Bedrock:	Devonian Kiltorcan-type Sandstones						
HYDROGEOLOGY	Aquifer Category:	Rf	Vulnerability at Monitoring site:	Extreme		Flow Regime:	Productive fissured bedrock	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km ²):	0.19	ZOC Delineated By:	GSI		Recharge Estimate (mm/yr):	256	
	ZOC Delineation Comments:	ZOC delineated by the GSI. Both Inner and Outer Source Protection Areas were defined. Available from the groundwater section at GSI.						
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified	
	22.64	77.36	0	0	0	0	0	
HYDROCHEMISTRY								
Hydrochemical Signature:	Ca-HCO3		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 14 mg/l NO3 and the maximum nitrate concentration was 24 mg/l NO3. The average ammonium concentration was 0.034 mg/l N and the maximum ammonium concentration was 0.323 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.015 mg/l P and the maximum MRP concentration was 0.047 mg/l P. The average chloride concentration was 25.4 mg/l Cl and the maximum chloride concentration was 34 mg/l Cl.				
Alkalinity (mg/l HCO3):	Average:	Range:						
	308	272-410						
Hardness (mg/l CaCO3):	Average:	Range:						
	328	280-451						
Conductivity (uS/cm):	Average:	Range:						
	641	468-792						
Monitoring Record Period:	From:	To:						
	2007	2010						
RISK ASSESSMENT								
Pressure (e.g., Nitrates, Phosphates, Abstractions):	---		Typical Contaminants:	---				
Risk Category:	At risk, high confidence		GWB Status:	Good				
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:			
	0.00	100.00	0.00	0.00	0.00			
OTHER INFORMATION								



Borehole Housing



Sampling Tap

Data Summary Sheet - July 2011

Disclaimer: The data in this document are based on the best available information and understanding at time of writing. Neither the Environmental Protection Agency, nor the individual bodies supplying data for this document and accompanying maps will be responsible for any loss or damage from the use or interpretation of these data.

Rock Unit Geology Map: GSI, 2009

Aquifer Type Map: GSI, 2009

Groundwater Vulnerability Map: GSI, 2009

Soils & Subsoils Type: Teagasc, 2007

Recharge Map: GSI, 2009

Impact Potential Map: EPA, 2009

Risk Assessment Map: EPA WFD Risk Assessment, 2006

Groundwater Body Status: EPA WFD Status Assessment, 2008

Water Quality Data: EPA WFD Monitoring, 2008

Groundwater Threshold Values

Groundwater threshold values for selected parameters:

Nitrate - General Chemical Test/ Drinking Water Test (37.5 mg/l N03)

Ammonium - Drinking Water Test (0.175 mg/l N) / Surface Water Test (0.065 mg/l N)

Molybdate Reactive Phosphorus (MRP) - Surface Water Test (0.035 mg/l P)

Chloride -Saline/Intrusive Test (24 mg/l) / Drinking Water Test (175 mg/l Cl)

Electrical Conductivity -Saline/Intrusive Test (800 µS/cm) / Drinking Water Test (1,875 µS/cm)

Further information on groundwater threshold values is contained in the Groundwater Regulations (S.I. No.9 of 2010).

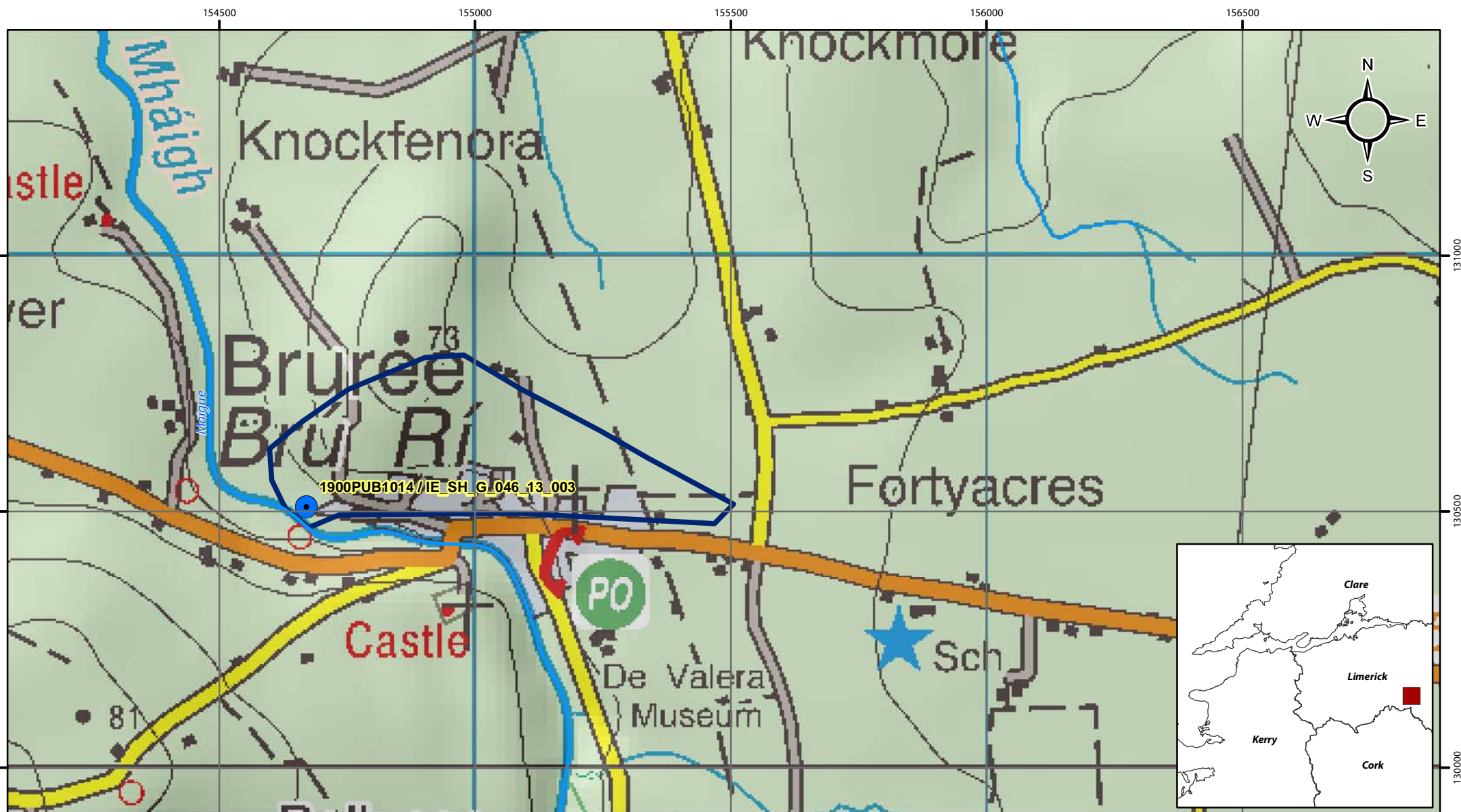
General Downgradient Distances

General Downgradient Distances (XL) applied to boreholes sourced in bedrock aquifers are constrained to estimate approximate limits based on data at the GSI. In some cases they may be higher or lower depending on local conditions.

Rk, Rkd, Lk	225 m
Lm	150 m
Ll, Pl	60 m

It is assumed that groundwater downgradient of a spring cannot flow back up to the spring, however a precautionary 30m buffer is generally applied which allows for instances where pumping under dry weather periods may induce a drawdown or where the ground may be sloping toward the spring from the downgradient side.

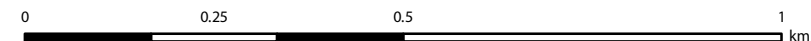
Version 0:	Prepared by	GSI	Date:	12/01/1995
Version 1:	Prepared by	Tobin (CK)	Date:	Mar2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

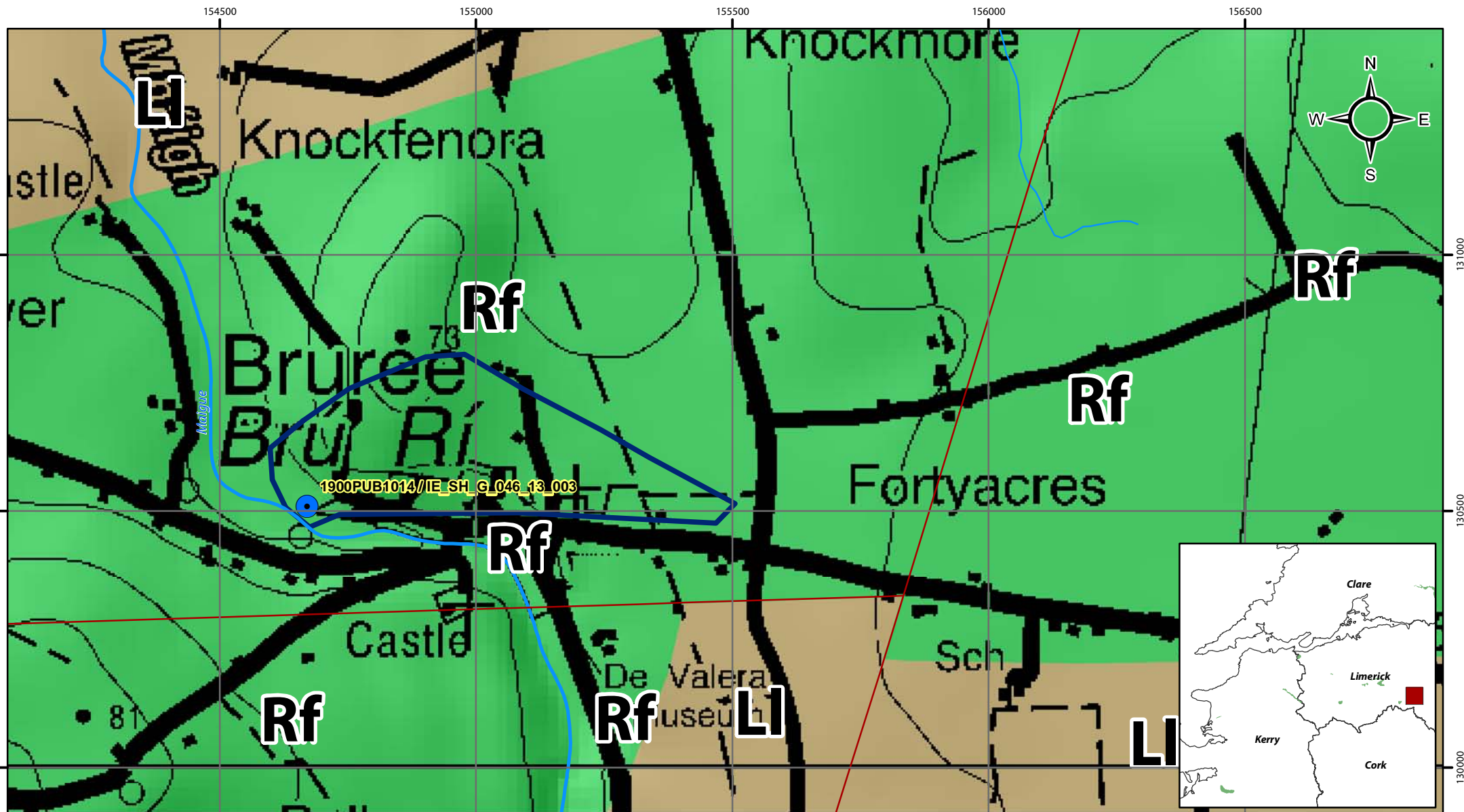


Location Map for Bruree BH







- Abstractions
- River
- Zone of Contribution

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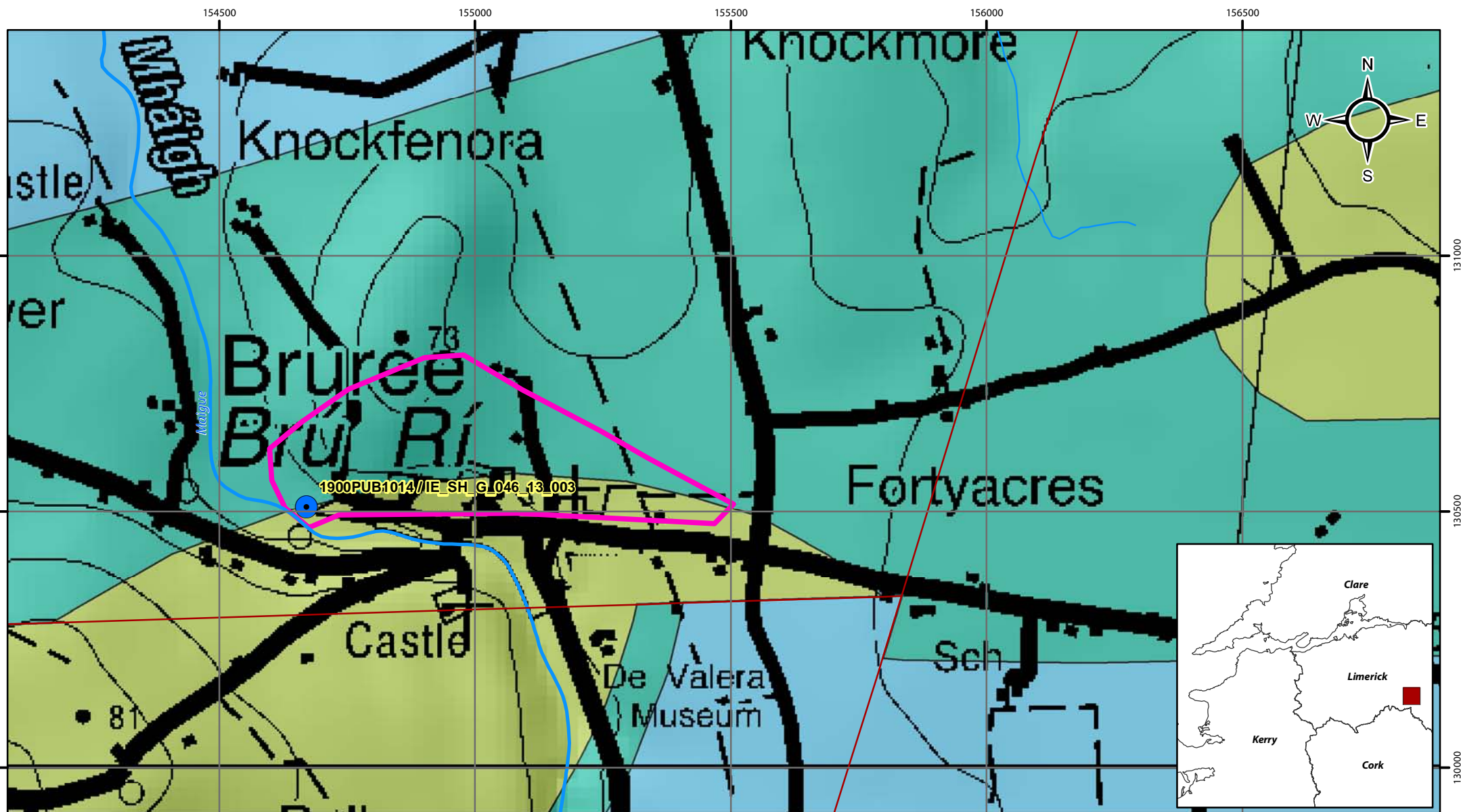


Aquifer Category Map for Bruree BH

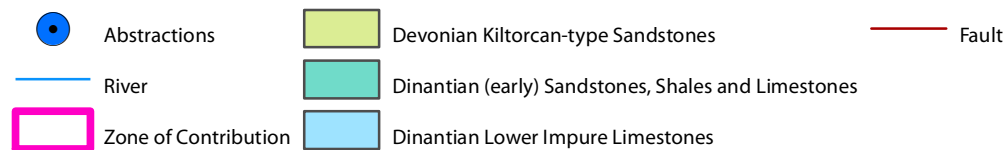
-  Abstractions
-  River
-  Zone of Contribution
-  LI
-  Rf
-  Fault

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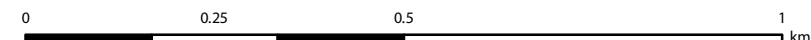
0 0.25 0.5 1 km



Bedrock Map for Bruree BH



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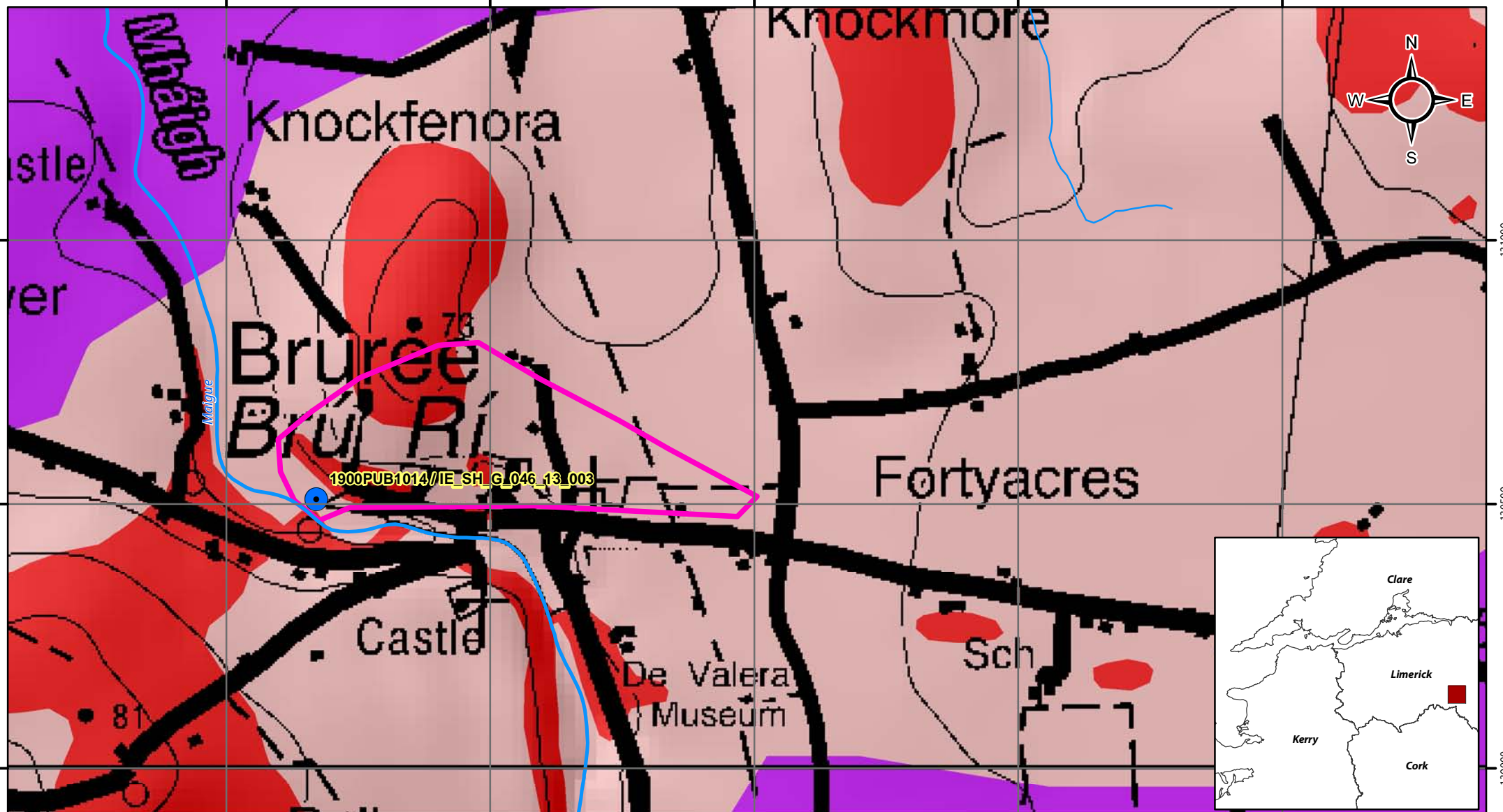
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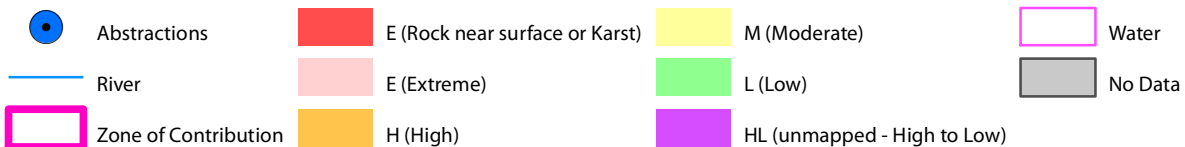
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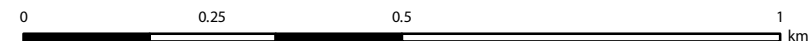
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Groundwater vulnerability Map for Bruree BH



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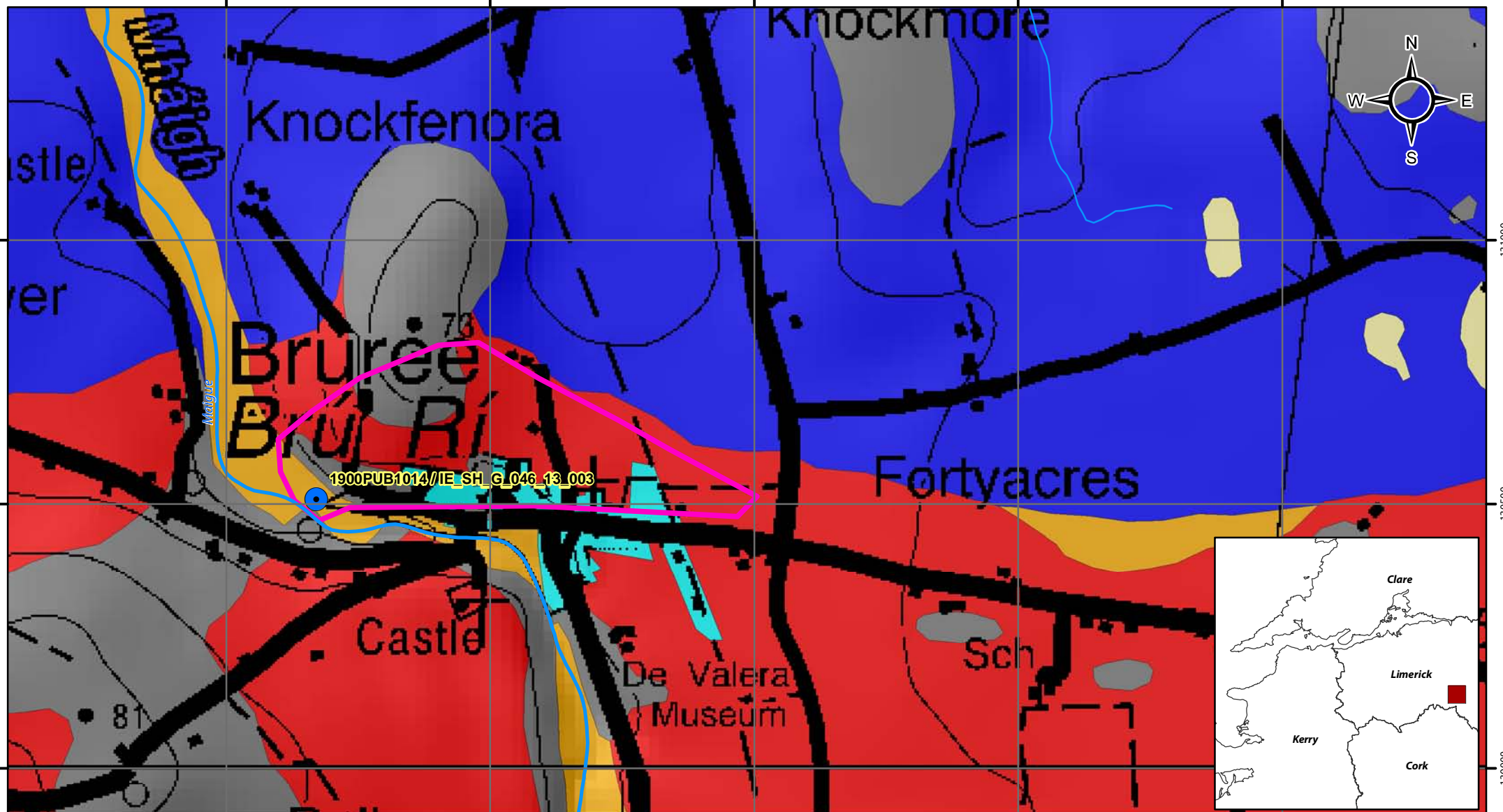
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






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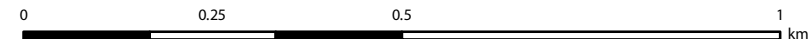
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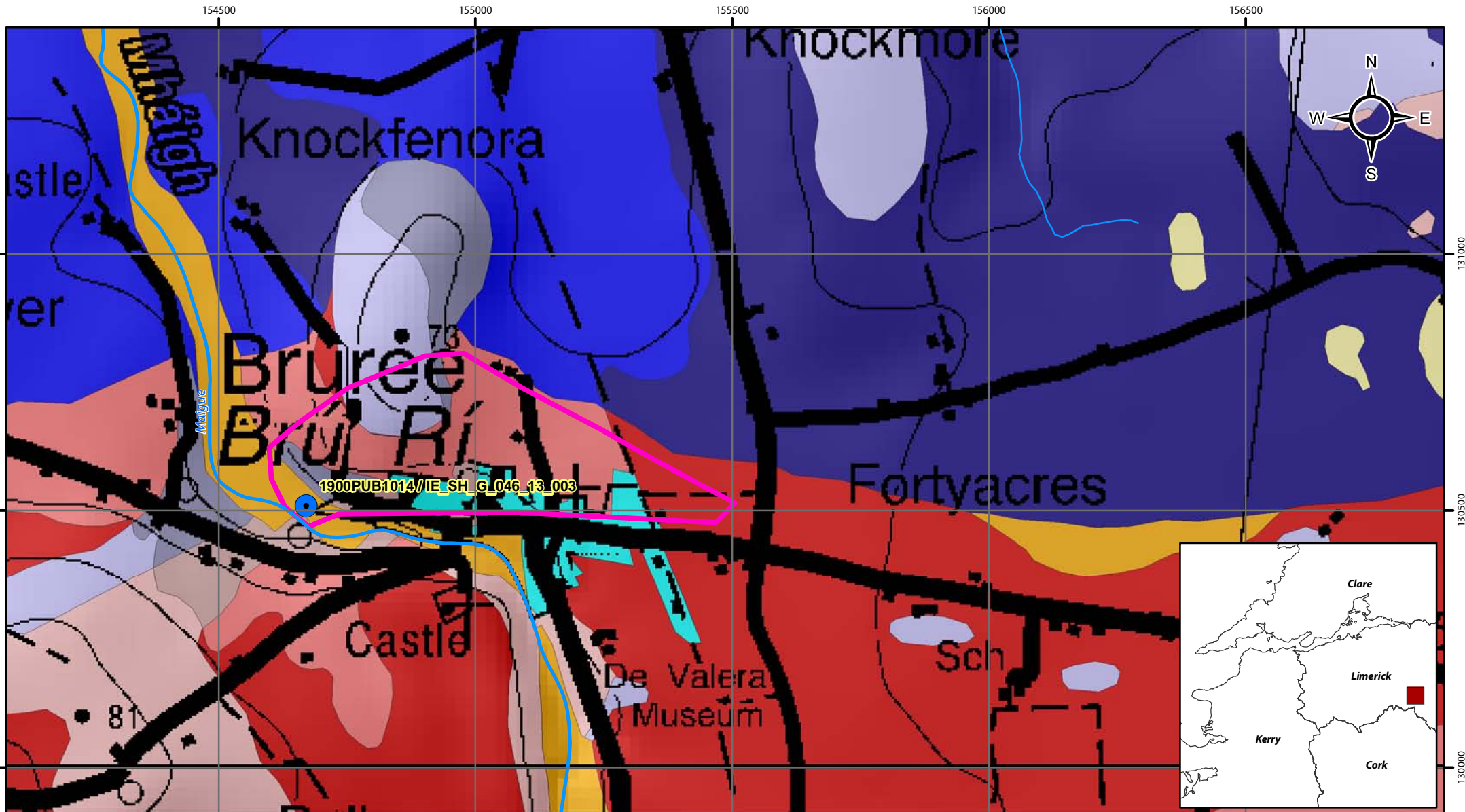


Subsoils Map for Bruree BH

- | | | |
|---|--|---|
|  Abstractions |  Alluvium |  Made ground |
|  River |  Bedrock outcrop or subcrop |  Till derived from Devonian sandstones |
|  Zone of Contribution |  Lacustrine sediments |  Till derived from limestones |

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Soils Map for Bruree BH

