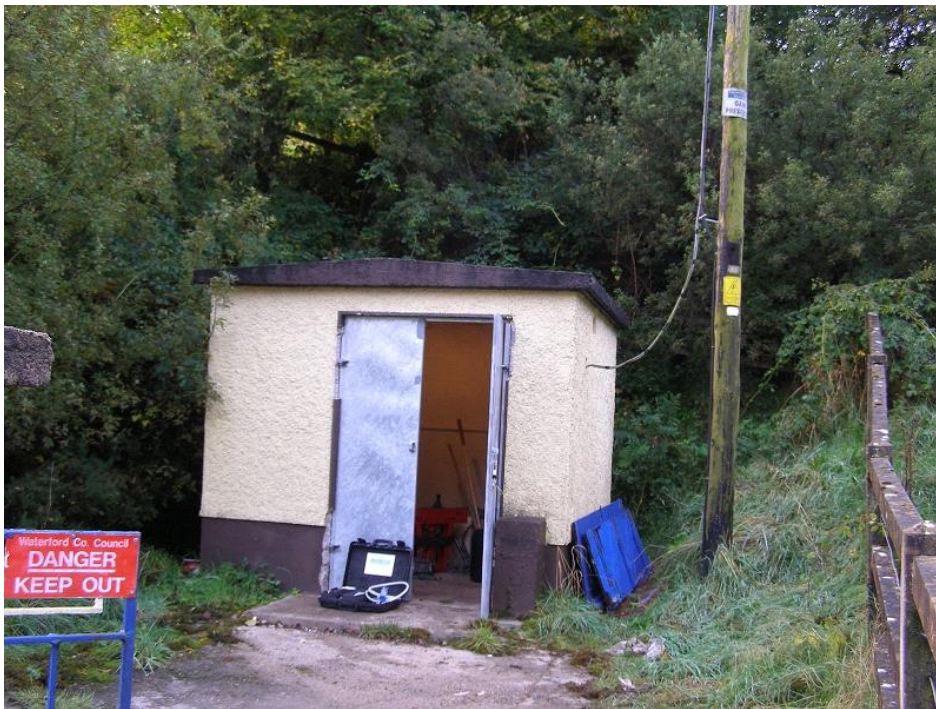


Water Framework Directive Groundwater Monitoring Programme

Site Information

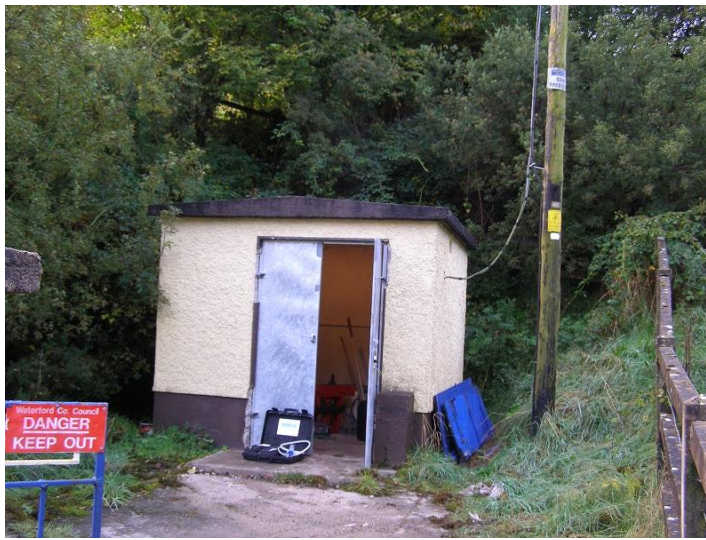
Ballyrohan/Ballymacarbry PWS



Ballyrohan/Ballymacarbry PWS is a borehole used as a public water supply. The abstraction rate is 330m³/day. The GSI has completed a source report.

SITE INFORMATION					
Site Name:	Ballyrohan/Ballymacarbry PWS		County:	Waterford	
RBD:	SERBD		EU Reporting Code:	IE_SE_G_098_24_005	
Easting:	219605		GWB Name:	Mullinavat	
Northing:	110953		GWB Code:	IE_SE_G_098	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	3100PUB1014	
Hydrometric Area:	16		Water Level Monitoring Network:	Level	Flow
Townland:	CURRAGHATESKIN			N	N
Ownership:	Waterford County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	---				
SITE DIRECTIONS					
Location and Access Information:	Located 2 km south of Ballymacarbry by the junction of the R671 and the third class road at a sharp bend.				
Additional Comments:	---				
WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	330	Ground Elevation (m OD):	121
Borehole Log Available:	---	Total Drilled Depth (m bgl):	---	Depth to Bedrock (m bgl):	---
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	200	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:	---		
Specific Capacity (m³/d/m):	---				
Static Water Level (m bgl):	---				
Scheme Name:	Ballyrohan/Ballymacarbry	Number of Abstraction Points in the Scheme:	1	Source Report Available	Y
Source Report Info:	Source report prepared by GSI 1996.				
Scheme Summary:	The source is the main public supply well for Ballymacarbry and it is located 1.5 km south of Ballymacarbry, in the town land of Ballyrohan, just off the main Dungarvan to Clonmel road (Figure 1). The well is in a small pumphouse and a small area around the pumphouse is paved and fenced off. A second council supply was drilled in sand and gravel in the village of Ballymacarbry, however the quality of water is poor so this well is only used in emergencies (Area Engineer, pers. Comm.).				

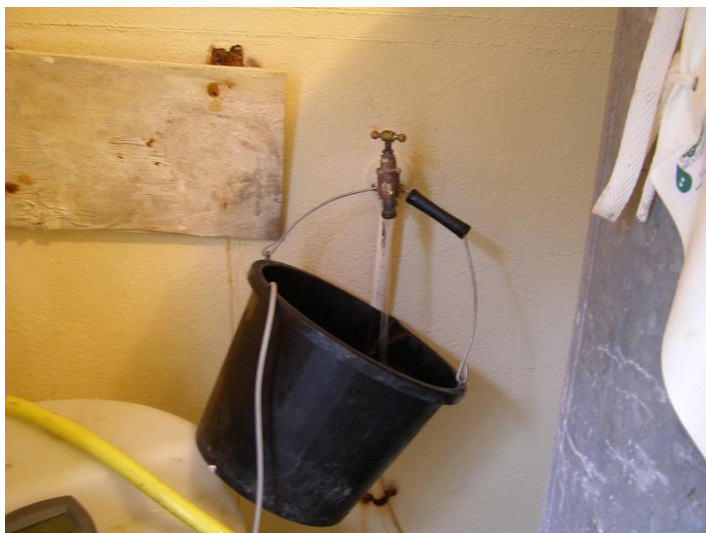
HYDROGEOLOGY								
GEOLOGY	Soil:	Alluviums (AlluvMIN)					Subsoil Permeability:	n/a
	Subsoil:	Alluvium (A)						
	Bedrock:	Devonian Old Red Sandstones						
HYDROGEOLOGY	Aquifer Category:	LI	Vulnerability at Monitoring site:	Extreme			Flow Regime:	Poorly productive
ZONE OF CONTRIBUTION	Estimated ZOC Size (km²):	0.33	ZOC Delineated By:	GSI			Recharge Estimate (mm/yr):	480
	ZOC Delineation Comments:	The GSI delineated a source area based on numerical modelling of the groundwater system together with hydrogeological mapping techniques. See the source report for details.						
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified	
	43.31	56.69	0	0	0	0	0	
HYDROCHEMISTRY								
Hydrochemical Signature:	Ca-HCO3		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 17 mg/l NO3 and the maximum nitrate concentration was 27 mg/l NO3. The average ammonium concentration was 0.045 mg/l N and the maximum ammonium concentration was 0.7 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.015 mg/l P and the maximum MRP concentration was 0.071 mg/l P. The average chloride concentration was 12.7 mg/l Cl and the maximum chloride concentration was 30 mg/l Cl.				
Alkalinity (mg/l HCO3):	Average:	Range:						
	112	88-164						
Hardness (mg/l CaCO3):	Average:	Range:						
	119	92-149						
Conductivity (uS/cm):	Average:	Range:						
	255	183-314						
Monitoring Record Period:	From:	To:						
	1993	2010						
RISK ASSESSMENT								
Pressure (e.g., Nitrates, Phosphates, Abstractions):	---			Typical Contaminants:	---			
Risk Category:	At risk, low 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								



Pump House



Borehole



Sampling Point

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 NO₃)

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).

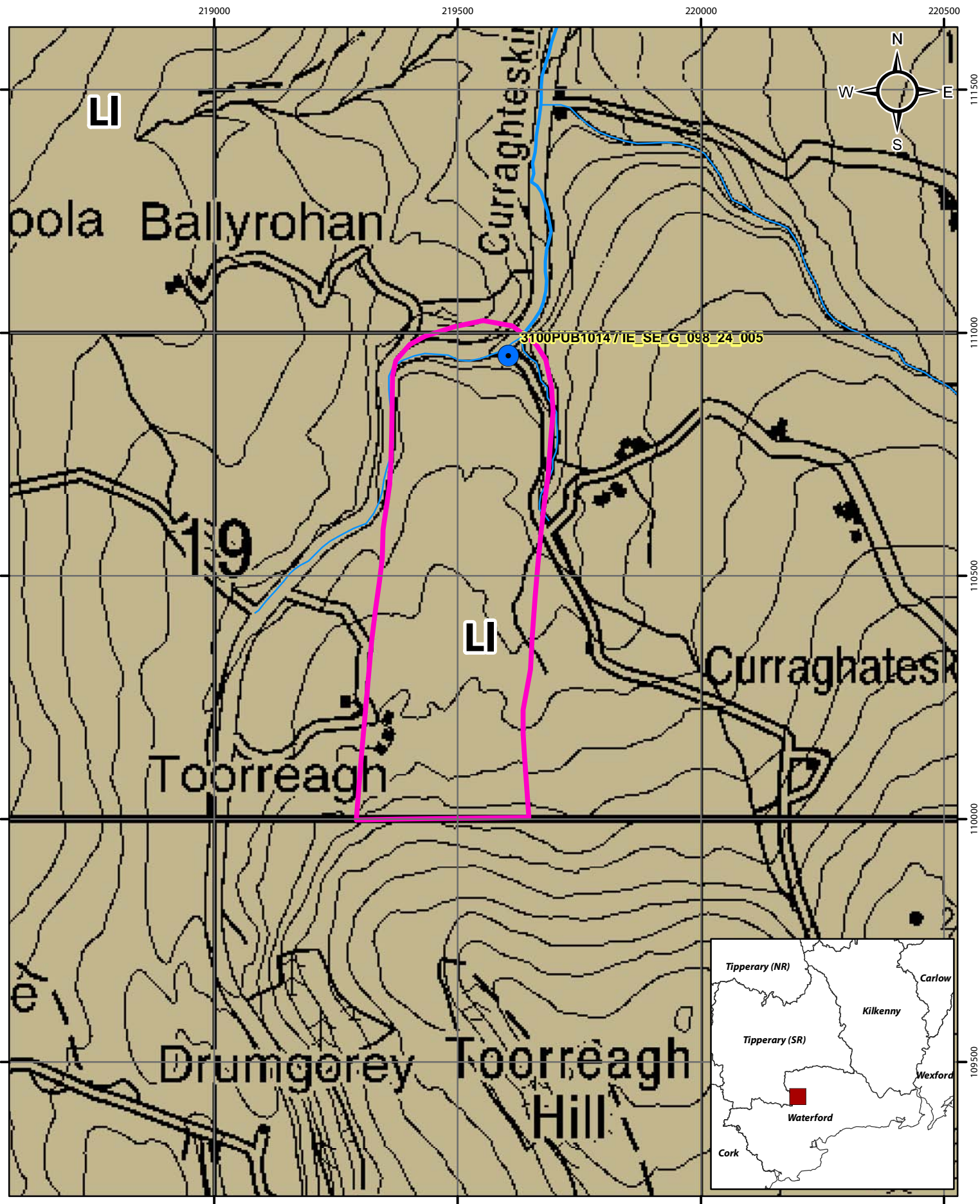
General Downgradient Distances

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
LI, PI	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.

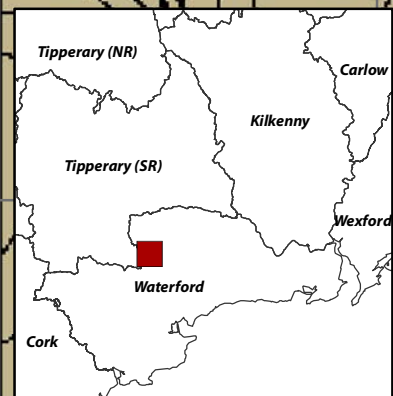
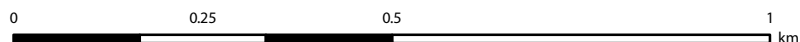
Version 0:	Prepared by	GSI	Date:	
Version 1:	Prepared by	OCM (DC)	Date:	Feb 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

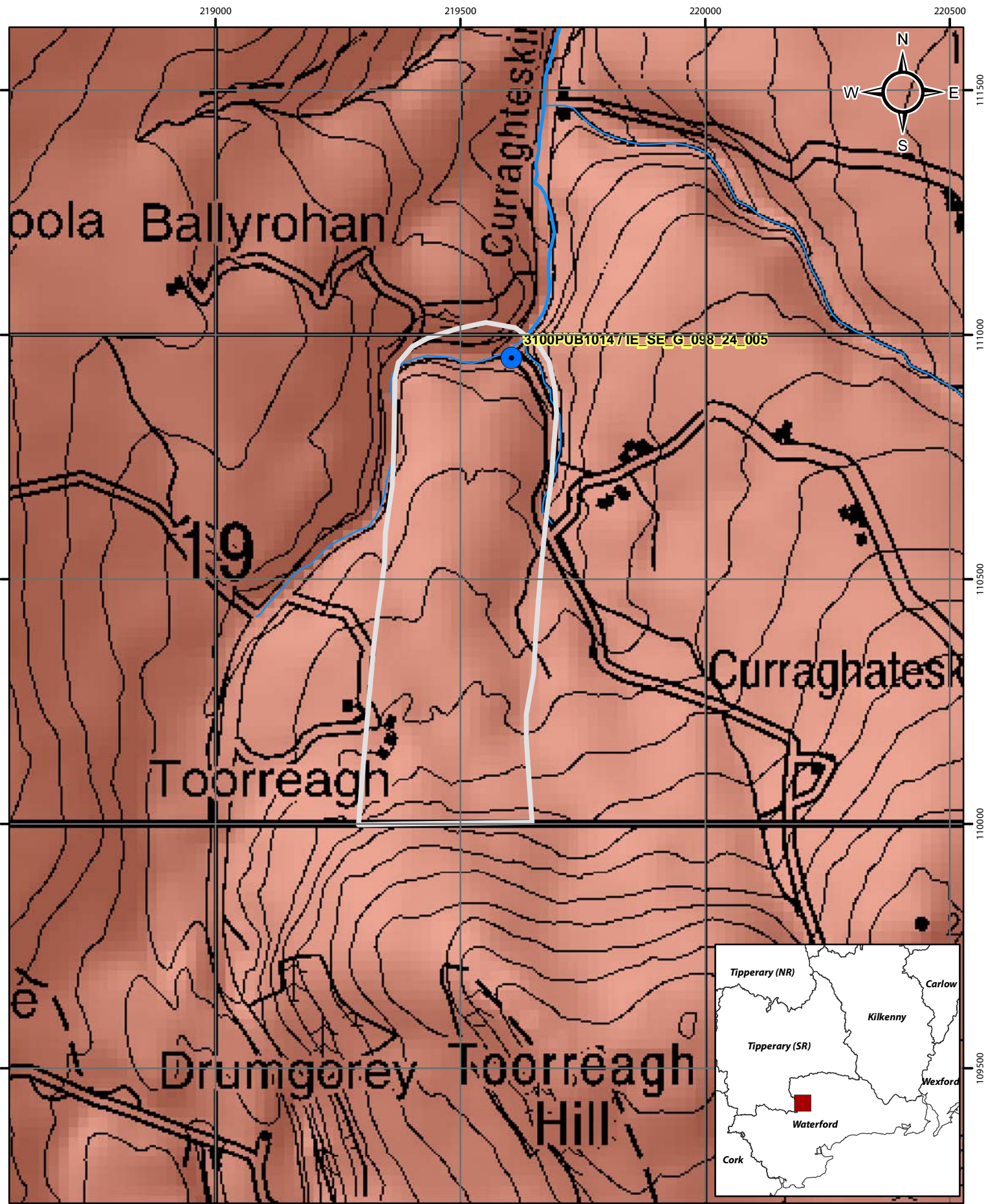


Aquifer Category Map for Ballyrohan/Ballymacarby PWS

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

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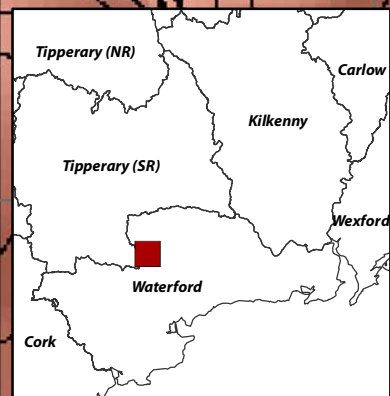
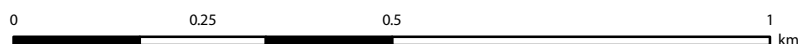


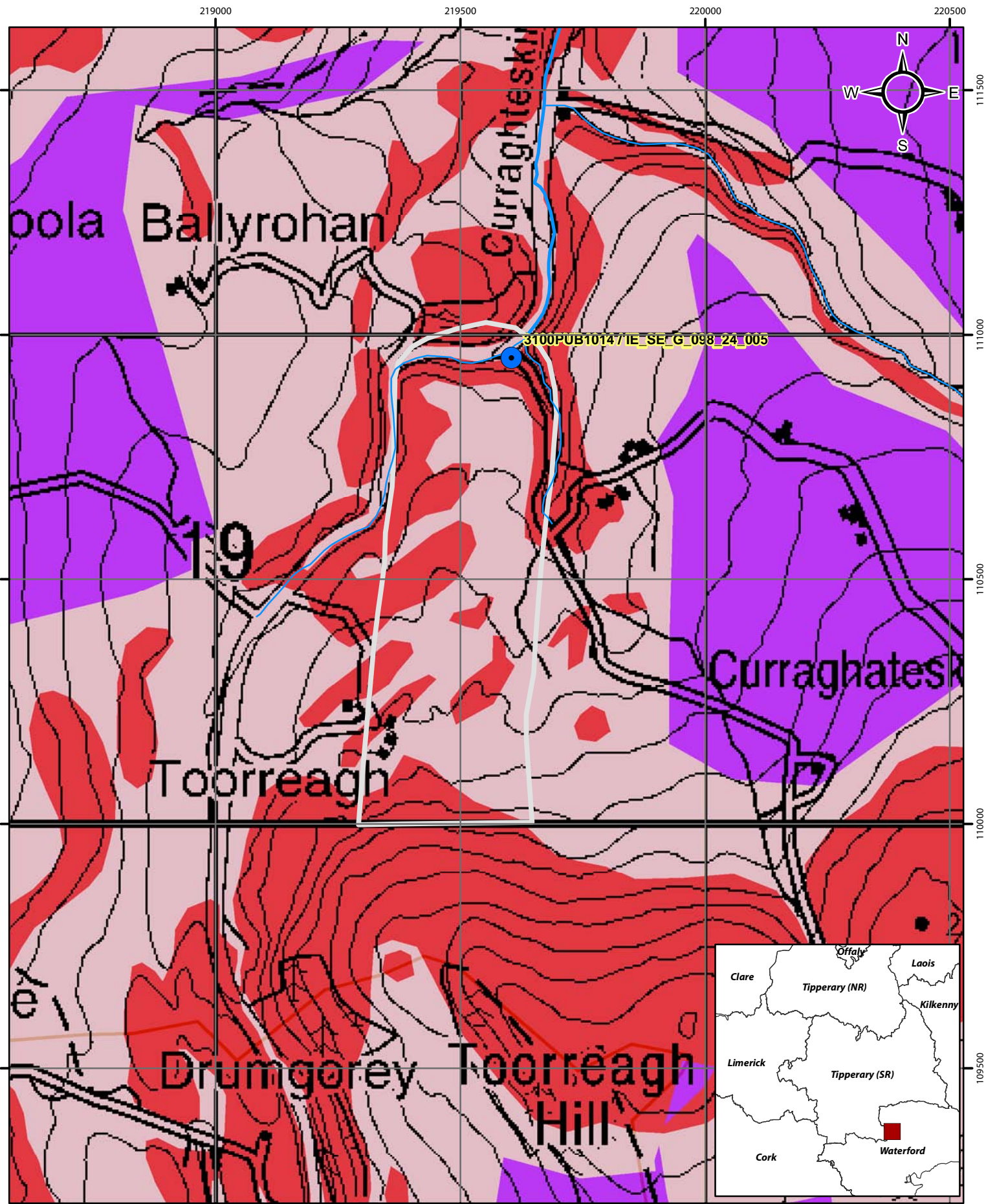


Bedrock Map for Ballyrohan/Ballymacarby PWS

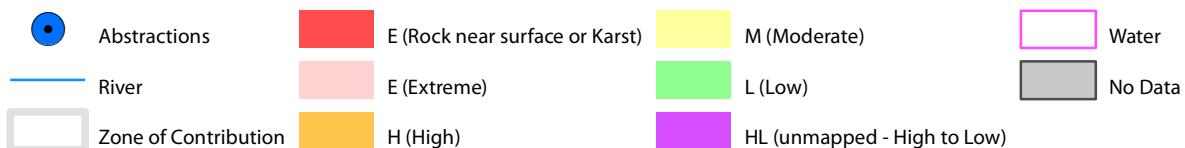
- Abstractions
- Fault
- Zone of Contribution
- Devonian Old Red Sandstones
- River

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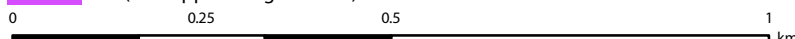


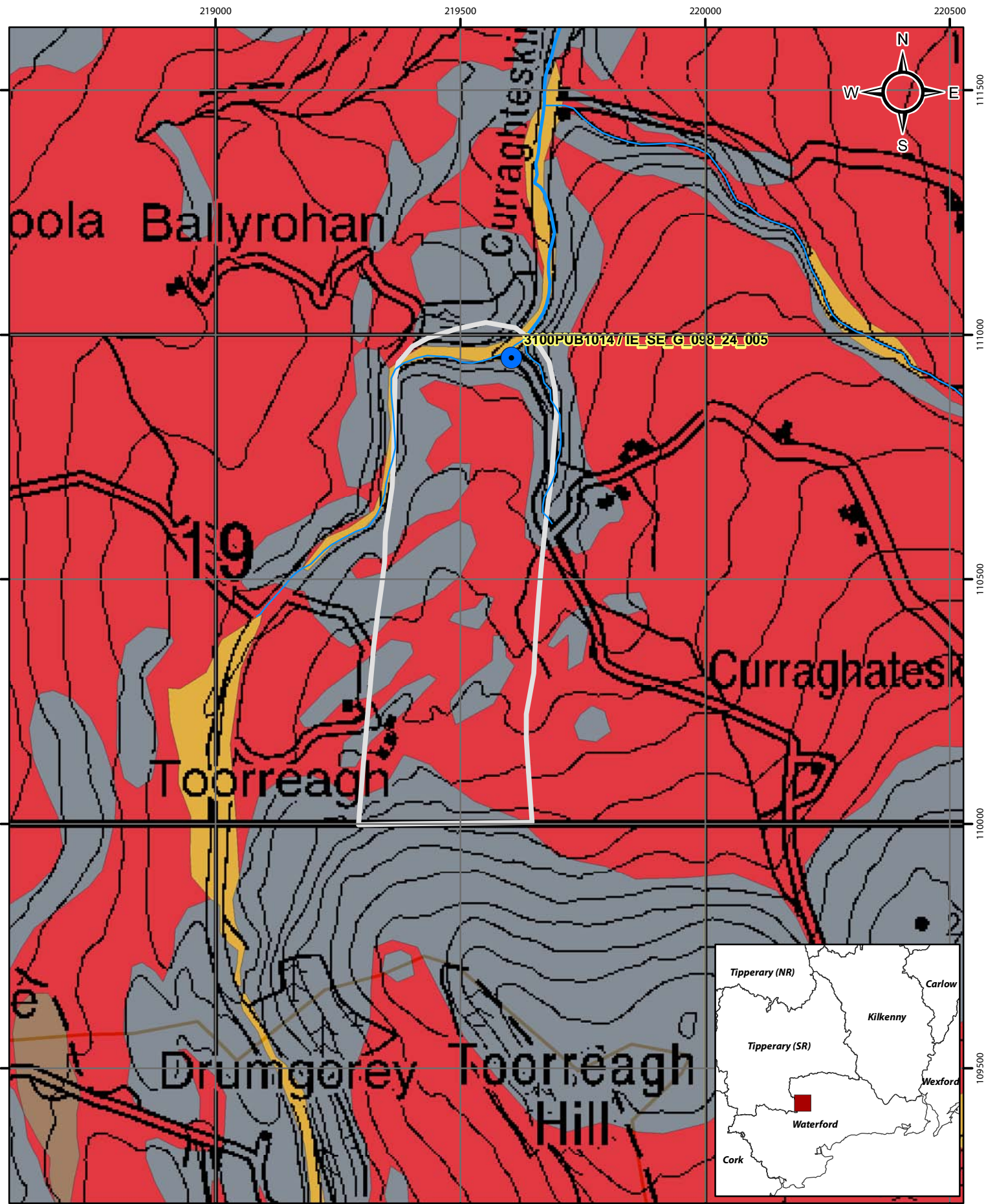


Groundwater Vulnerability Map for Ballyrohan/Ballymacarby PWS





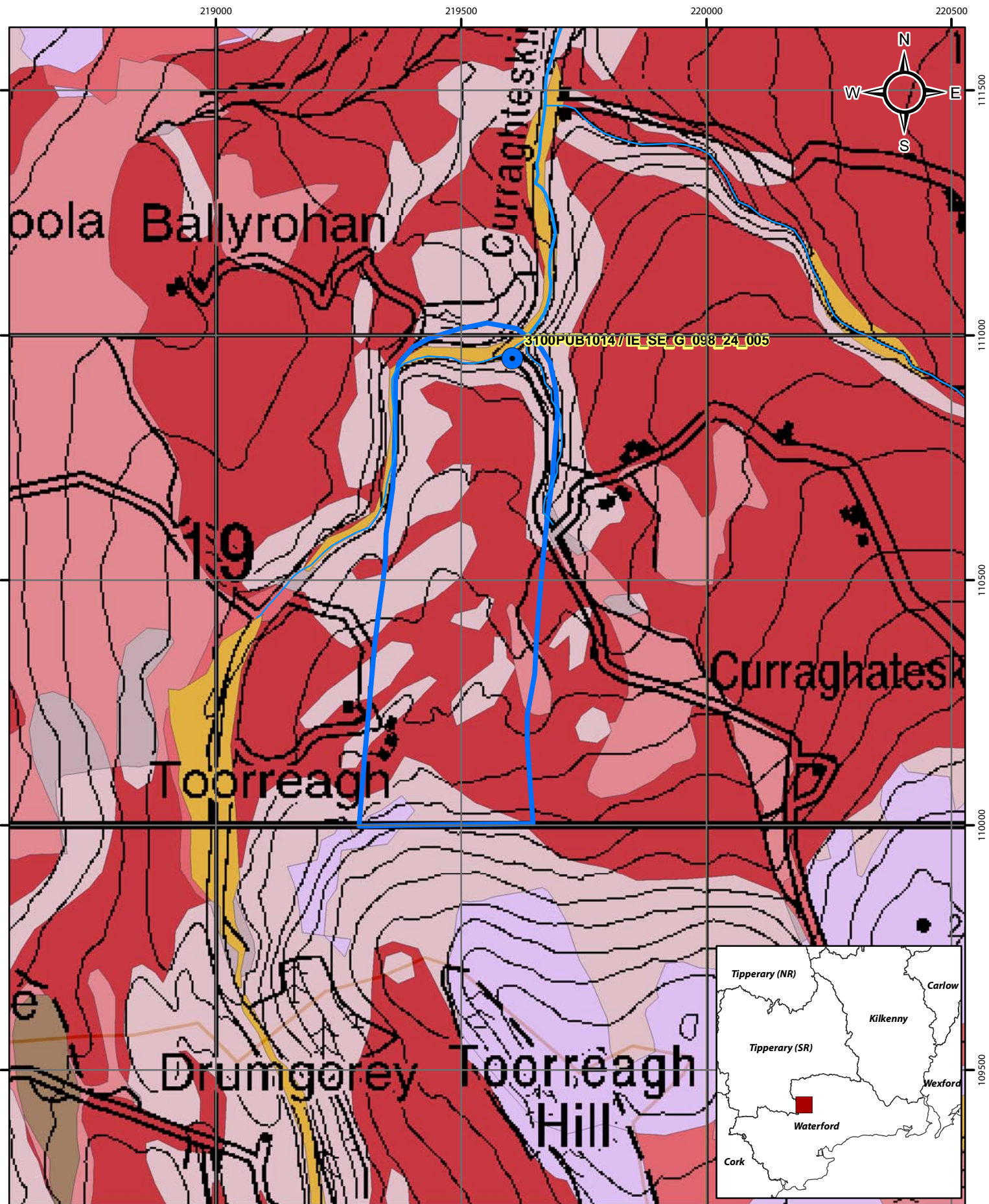
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Subsoils Map for Ballyrohan/Ballymacarby PWS

-  Abstractions
-  Alluvium
-  Bedrock outcrop or subcrop
-  River
-  Blanket peat
-  Till derived from Devonian sandstones
-  Zone of Contribution



Soils Map for Ballyrohan/Ballymacarby PWS

