

## Water Framework Directive Groundwater Monitoring Programme

### Site Information

### Allow



This monitoring point is part of the Allow PWS which abstracts an average of 327m<sup>3</sup>/day for a public water supply.



Cork

**August 2011**

SITE INFORMATION					
Site Name:	Allow		County:	Cork	
RBD:	SWRBD		EU Reporting Code:	IE_SW_G_070_04_001	
Easting:	139355		GWB Name:	Rathmore_W	
Northing:	113873		GWB Code:	IE_SW_G_070	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	0500PUB1101	
Hydrometric Area:	18		Water Level Monitoring Network:	Level	Flow
Townland:	FREEMOUNT			N	N
Ownership:	Cork County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	---				

SITE DIRECTIONS					
Location and Access Information:	Located in Freemount village which is 6km northwest of Liscarrol. It is west of Allow Bridge which is beside the junction of the R578 and R579				
Additional Comments:	---				

WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	327	Ground Elevation (m OD):	136
Borehole Log Available:	---	Total Drilled Depth (m bgl):	91	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:	Allow Regional	Number of Abstraction Points in the Scheme:	3	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	The scheme consists of two boreholes and a river intake supplying 2300 m³/d. The boreholes augment the river intake which is the main supply.				

HYDROGEOLOGY								
GEOLOGY	Soil:	Alluviums (AlluvMIN)					Subsoil Permeability:	Moderate
	Subsoil:	Alluvium (A)						
	Bedrock:	Namurian Sandstones						
HYDROGEOLOGY	Aquifer Category:	LI	Vulnerability at Monitoring site:	High to Low		Flow Regime:	Poorly productive	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km <sup>2</sup> ):	0.78	ZOC Delineated By:	OCM (DC)		Recharge Estimate (mm/yr):	154	
	ZOC Delineation Comments:	The ZOC was delineated on the basis of abstraction, recharge and topography. The entire hydrogeological catchment was used.						
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified	
	0.38	5.4	0	0	0	94.22	0	
HYDROCHEMISTRY								
Hydrochemical Signature:	Mg-HCO <sub>3</sub>		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 3 mg/l NO <sub>3</sub> and the maximum nitrate concentration was 20 mg/l NO <sub>3</sub> . The average ammonium concentration was 0.084 mg/l N and the maximum ammonium concentration was 0.17 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.007 mg/l P and the maximum MRP concentration was 0.029 mg/l P. The average chloride concentration was 19.8 mg/l Cl and the maximum chloride concentration was 28.1 mg/l Cl.				
Alkalinity (mg/l HCO <sub>3</sub> ):	Average:	Range:						
	140	30-190						
Hardness (mg/l CaCO <sub>3</sub> ):	Average:	Range:						
	127	33-151						
Conductivity (uS/cm):	Average:	Range:						
	304	109-409						
Monitoring Record Period:	From:	To:						
	2007	2010						
RISK ASSESSMENT								
Pressure (e.g., Nitrates, Phosphates, Abstractions):	---		Typical Contaminants:	---				
Risk Category:	Not 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								
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Borehole Housing



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 NO<sub>3</sub>)

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

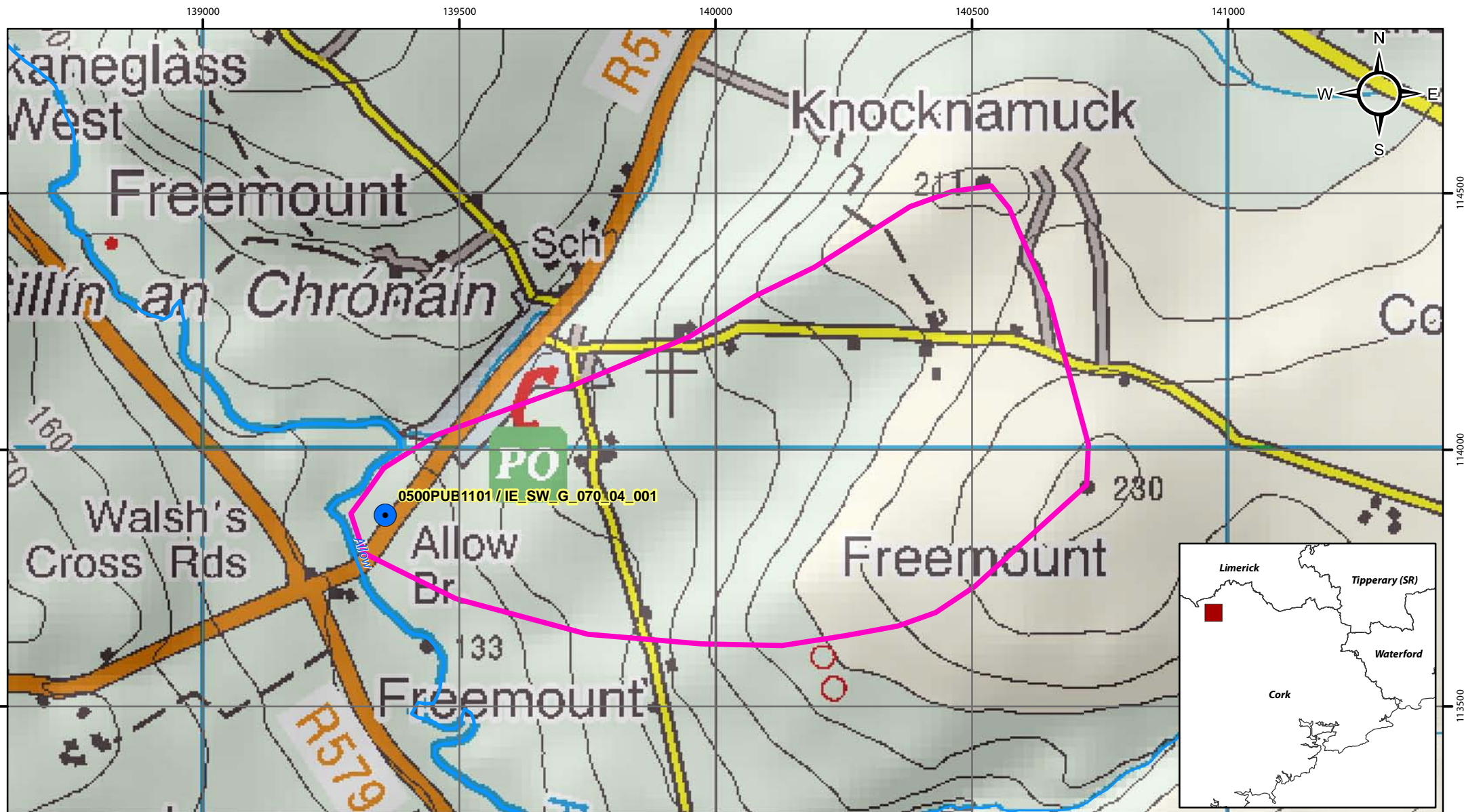
General Downgradient Distances (XL) applied to boreholes sourced in bedrock aquifers are constrained to estimate approximate limits based on data at the GSI. In some cases they may be higher or lower depending on local conditions.

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		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:	

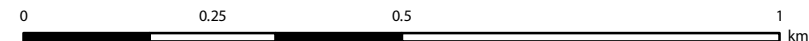


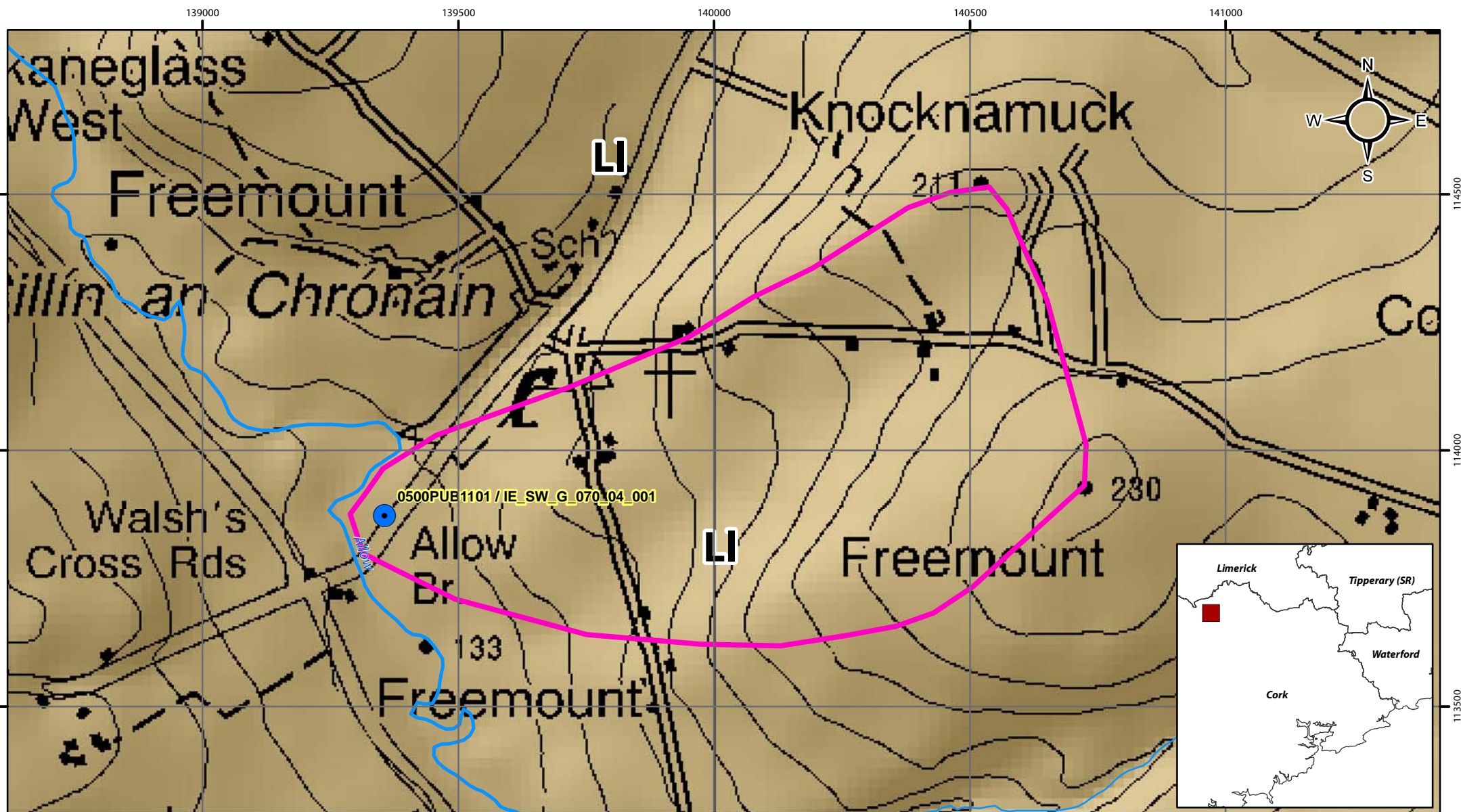


## Location Map for Allow RWSS (BH1)

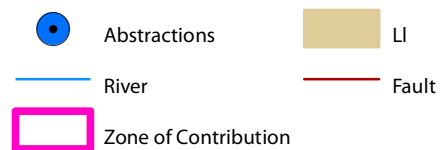
-  Abstractions
-  River
-  Zone of Contribution

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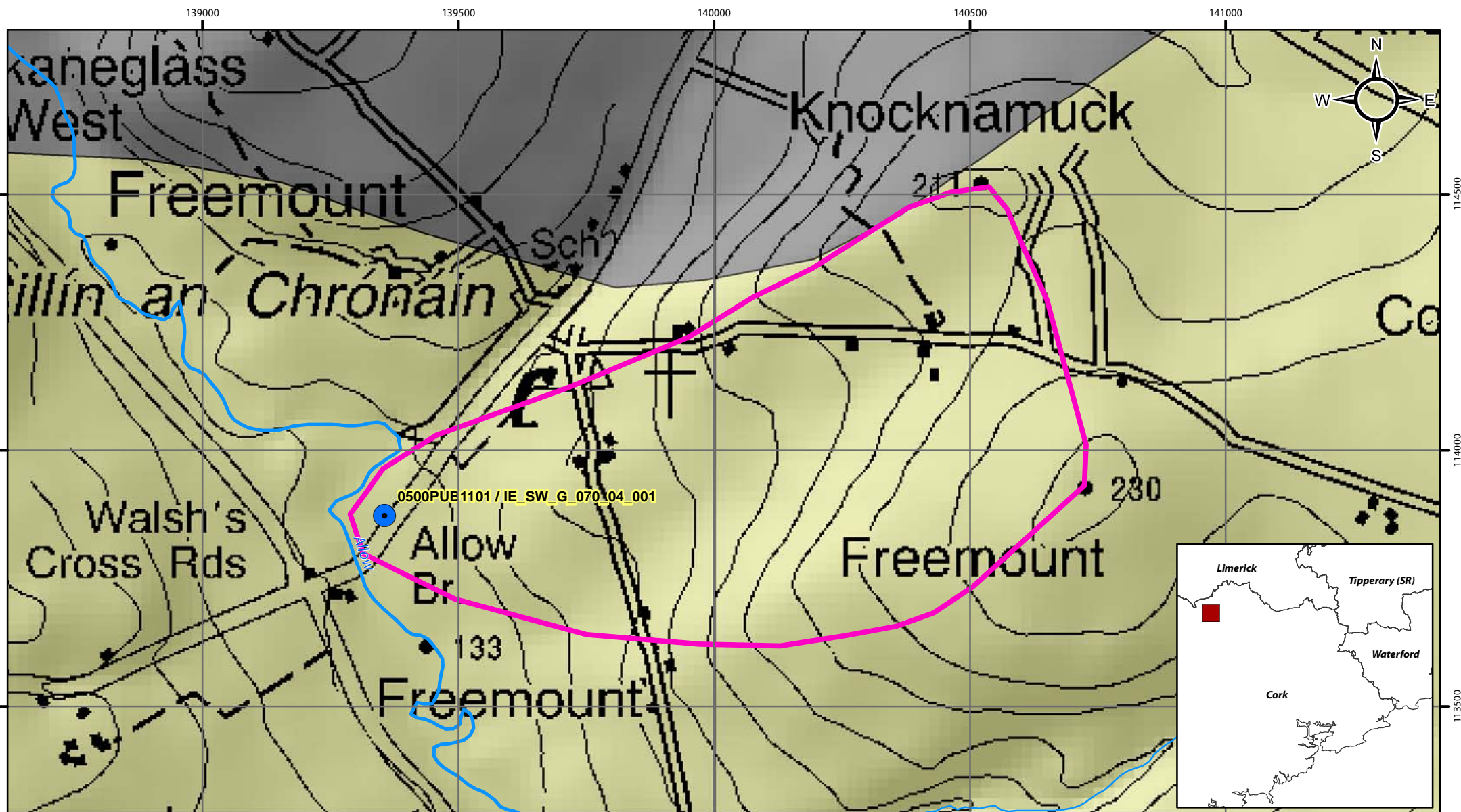




## Aquifer Category Map for Allow RWSS (BH1)

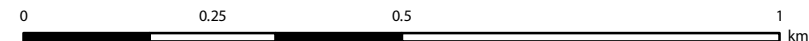




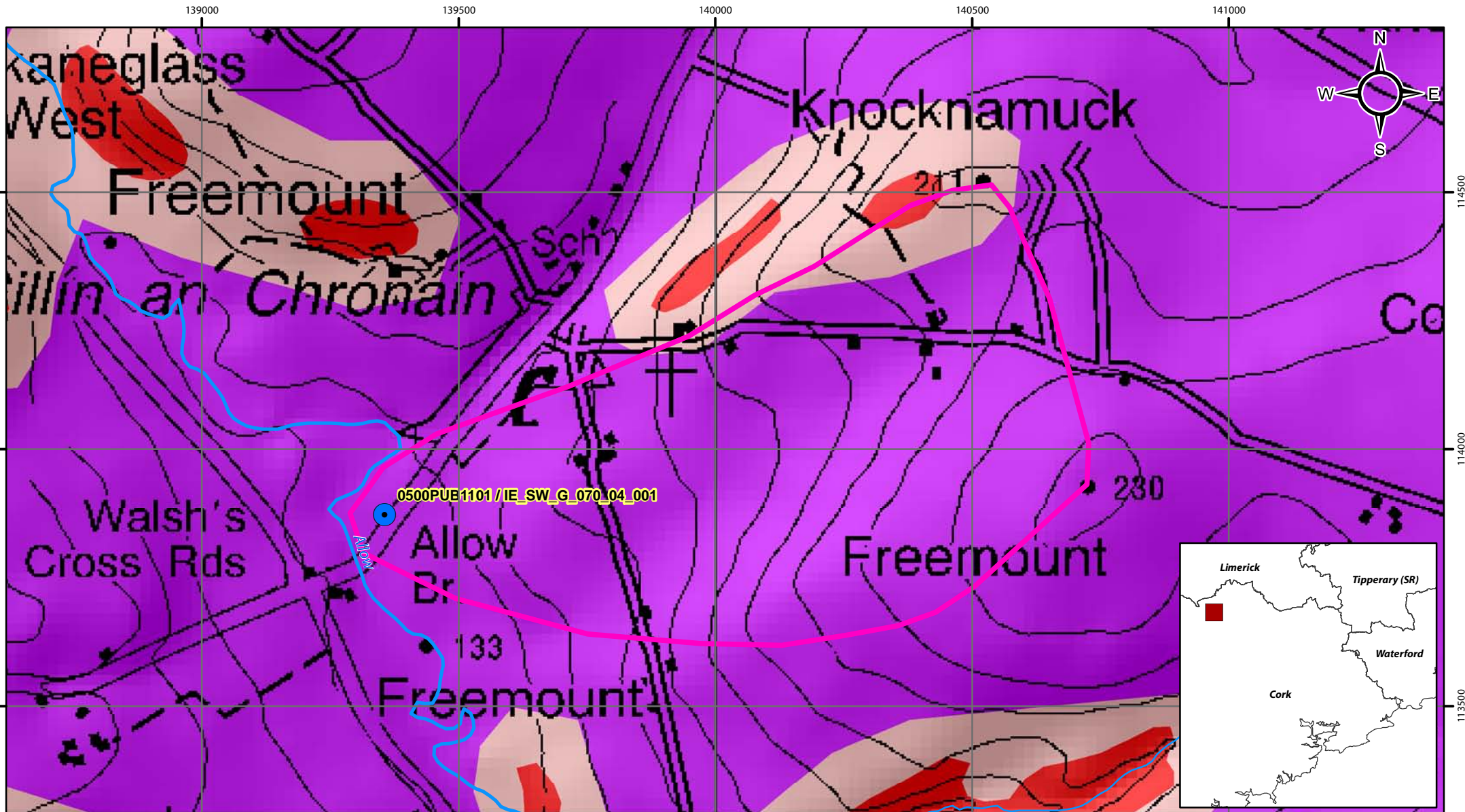


## Bedrock Map for Allow RWSS (BH1)

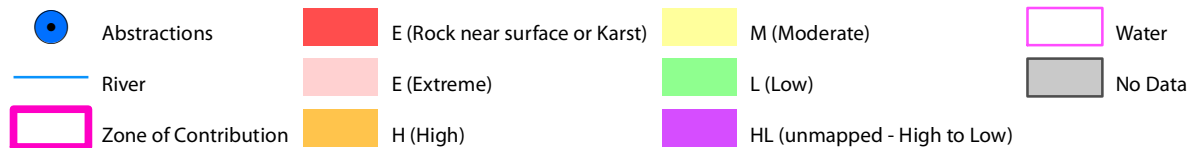
- Abstractions
- Zone of Contribution
- River
- Fault
- Namurian Sandstones
- Namurian Shales



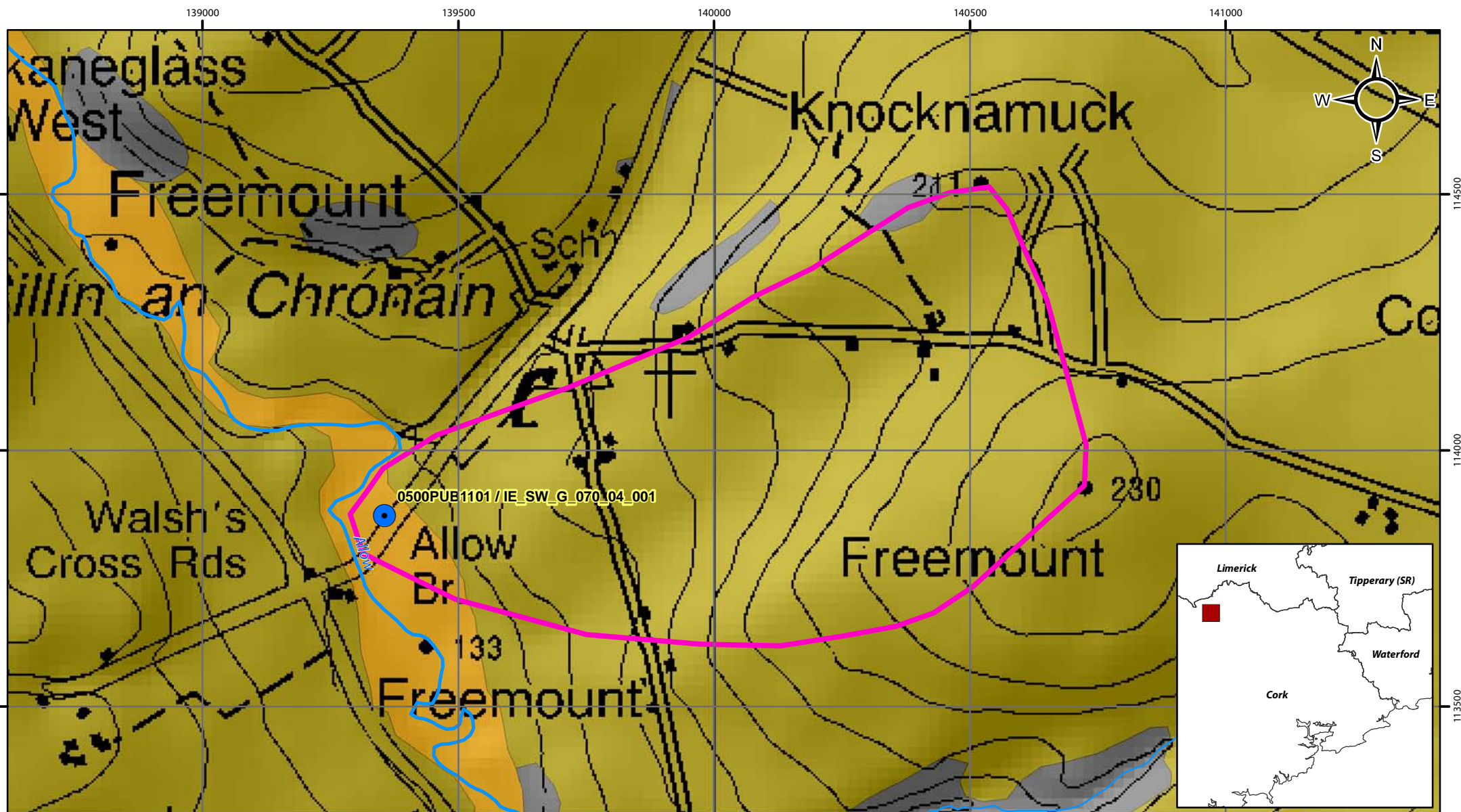




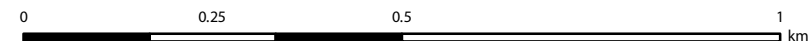
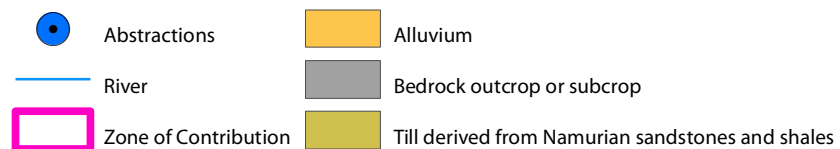
## Groundwater Vulnerability Map for Allow RWSS (BH1)



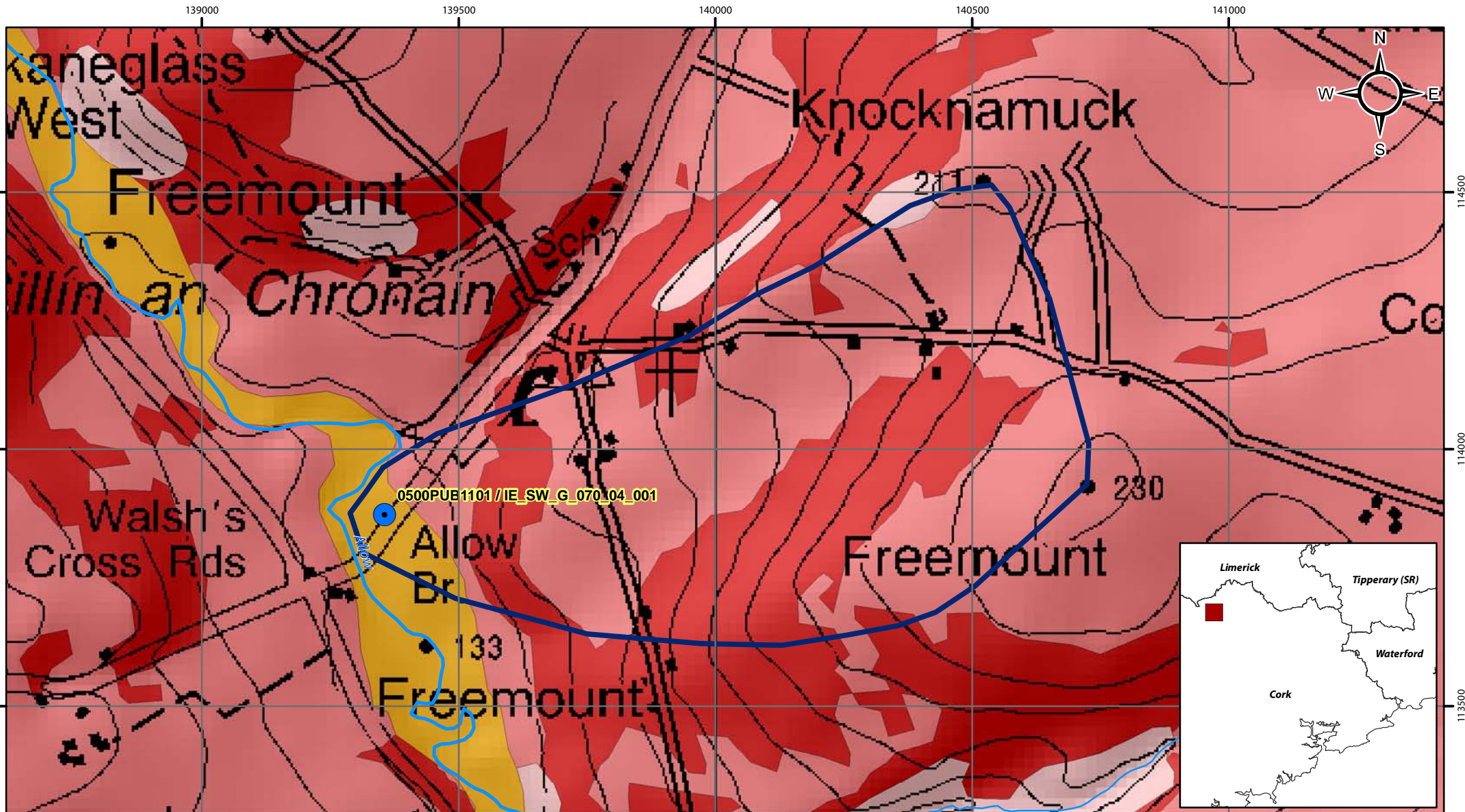




## Subsoils Map for Allow RWSS (BH1)







## Soils Map for Allow RWSS (BH1)

