

## Water Framework Directive Groundwater Monitoring Programme

### Site Information

## Ce Bhreannan - Brandon PWS



Brandon PWS is supplied by a spring abstracting on average 285m<sup>3</sup>/d, located in the hills of Brandon Head. The slopes feeding the spring comprise blanket peat and shallow depth to rock.



Kerry

**August 2011**

SITE INFORMATION					
Site Name:	Ce Bhreannan - Brandon PWS		County:	Kerry	
RBD:	Shannon IRBD		EU Reporting Code:	---	
Easting:	49561		GWB Name:	Brandon Head	
Northing:	114271		GWB Code:	IE_SH_G_044	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	1300PUB1023	
Hydrometric Area:	23		Water Level Monitoring Network:	Level	Flow
Townland:	SLIEVEGLASS			N	N
Ownership:	KERRY COUNTY COUNCIL				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		N
Site Comments:	---				
SITE DIRECTIONS					
Location and Access Information:	From Tralee take R560 off N86, through Stradbally and Cloghane. Approximately 3.5km from Cloghane, take a left a Yjcn, signposted for the Dingle Way. This junction is 1km southwest of Brandon village. Follow road, keeping left until another Yjcn is met, stay left. Keep straight ahead, following the walking signs, to a gate with a turnstile, see photo. Keep going for 1.5km, parallel to the hill contours. The spring is 100m off the road on the downhill side.				
Additional Comments:	---				
WELL INFORMATION					
Monitoring Point Type:	Spring	Abstraction Rate (m³/d):	285 average	Ground Elevation (m OD):	255
Borehole Log Available:	---	Total Drilled Depth (m bgl):	---	Depth to Bedrock (m bgl):	---
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	---	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:	Surface water seems to be entering chamber, although there is drain to assist diversion. Large overflow - estimated to be 5l/s. Reservoir located at 50383 13882.		
Specific Capacity (m³/d/m):	---				
Static Water Level (m bgl):	---				
Scheme Name:	Ce Bhreannan	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	Brandon PWS: Spring source supplying 130-140 houses. Also feeds into Cappagh Scheme. Chlorinated. Population is seasonal.				

HYDROGEOLOGY								
GEOLOGY	Soil:	Unknown (Blanket Peat)					Subsoil Permeability:	Less than 3m - not applied
	Subsoil:	Unknown (Blanket Peat)						
	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):	0.2	ZOC Delineated By:	TOBIN (CK)	Recharge Estimate (mm/yr):	1500		
	ZOC Delineation Comments:	Spring issuing from mid slope close to stream. High rainfall expected to generate high recharge which mostly flows through top of the rock discharging at the spring. Abstraction ranges from 170-530m³/d. ZOC based on 428m³/d (150%) plus 5l/s overflow. Boundaries based on topography.						
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified	
	0	100	0	0	0	0	0	
HYDROCHEMISTRY								
Hydrochemical Signature:	---		Additional Water Chemistry Information:	Low nitrates (<2mg/l), low mineralisation. Exceedances of faecal coliforms and total coliforms of treated water in 2005. Chlorides higher than expected - may be due to proximity to sea.				
Alkalinity (mg/l HCO3):	Average:	Range:						
	---	---						
Hardness (mg/l CaCO3):	Average:	Range:						
	---	---						
Conductivity (uS/cm):	Average:	Range:						
	---	130-150						
Monitoring Record Period:	From:	To:						
	---	---						
RISK ASSESSMENT								
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Abstraction/ GWDTE		Typical Contaminants:	---				
Risk Category:	At risk, low confidence		GWB Status:	Good				
Impact Potential within ZOC (% area):	Extreme:	High:	Moderate:	Low:	Negligible:			
	0.00	0.00	0.00	0.00	100.00			
OTHER INFORMATION								
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Site Overview



View from Site



Site Entrance

## 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  $\mu$ S/cm) / Drinking Water Test (1,875  $\mu$ S/cm)

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

### General Downgradient Distances

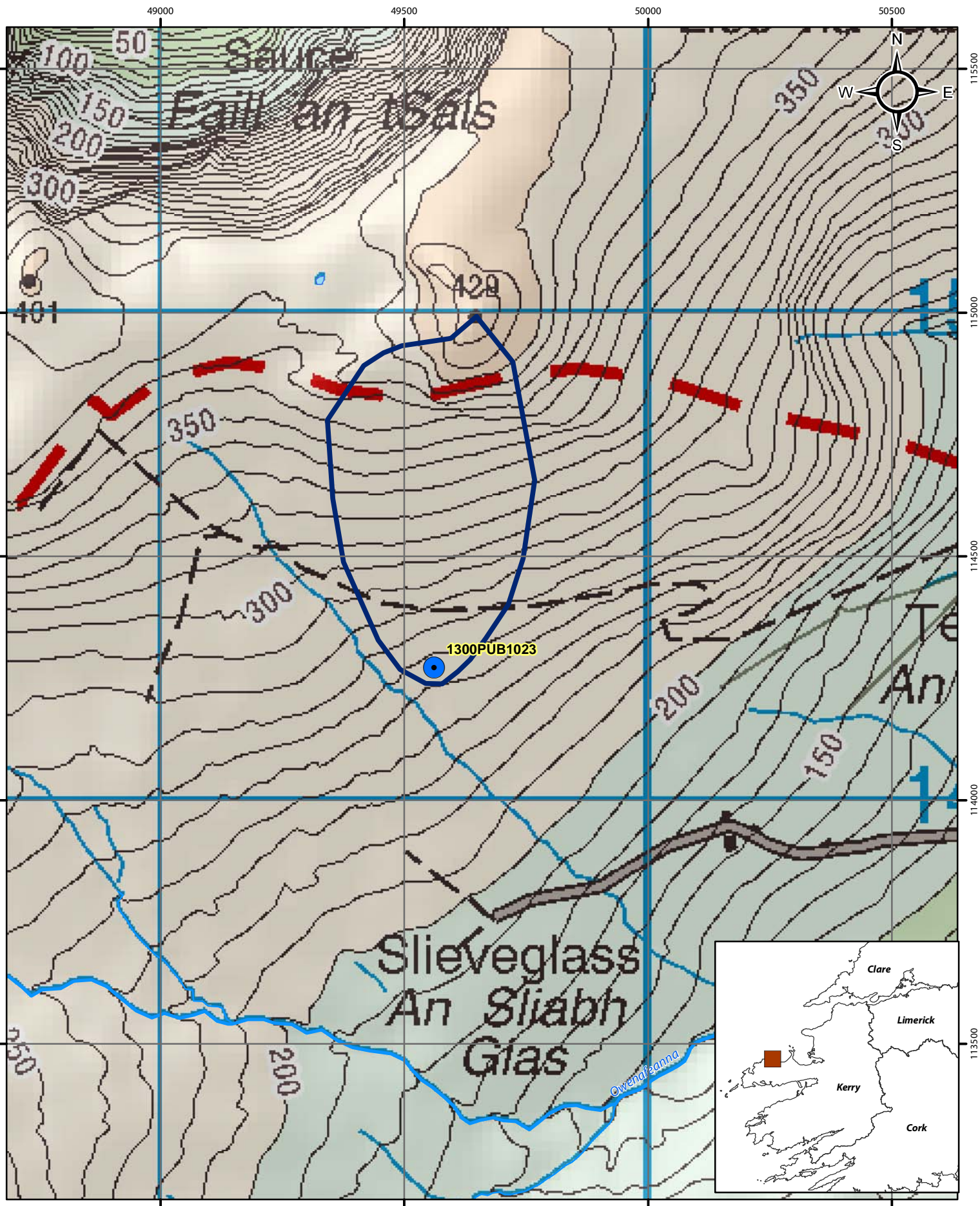
General Downgradient Distances (XL) applied to boreholes sourced in bedrock aquifers are constrained to estimate approximate limits based on data at the GSI. In some cases they may be higher or lower depending on local conditions.

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	Tobin (CK)	Date:	Feb 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	

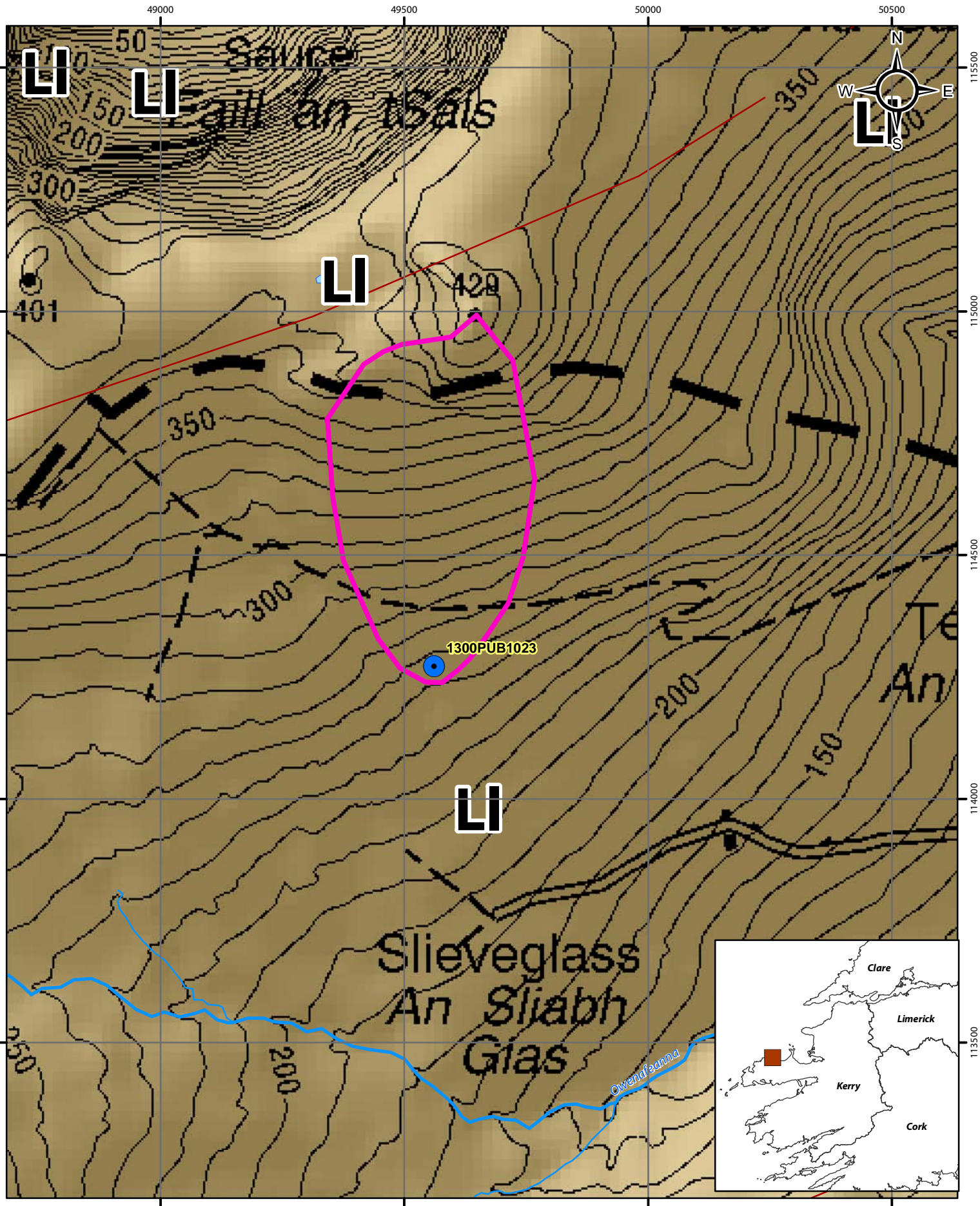




## Location Map for Ce Bhreanainn 015D

- Abstractions
- Zone of Contribution
- River

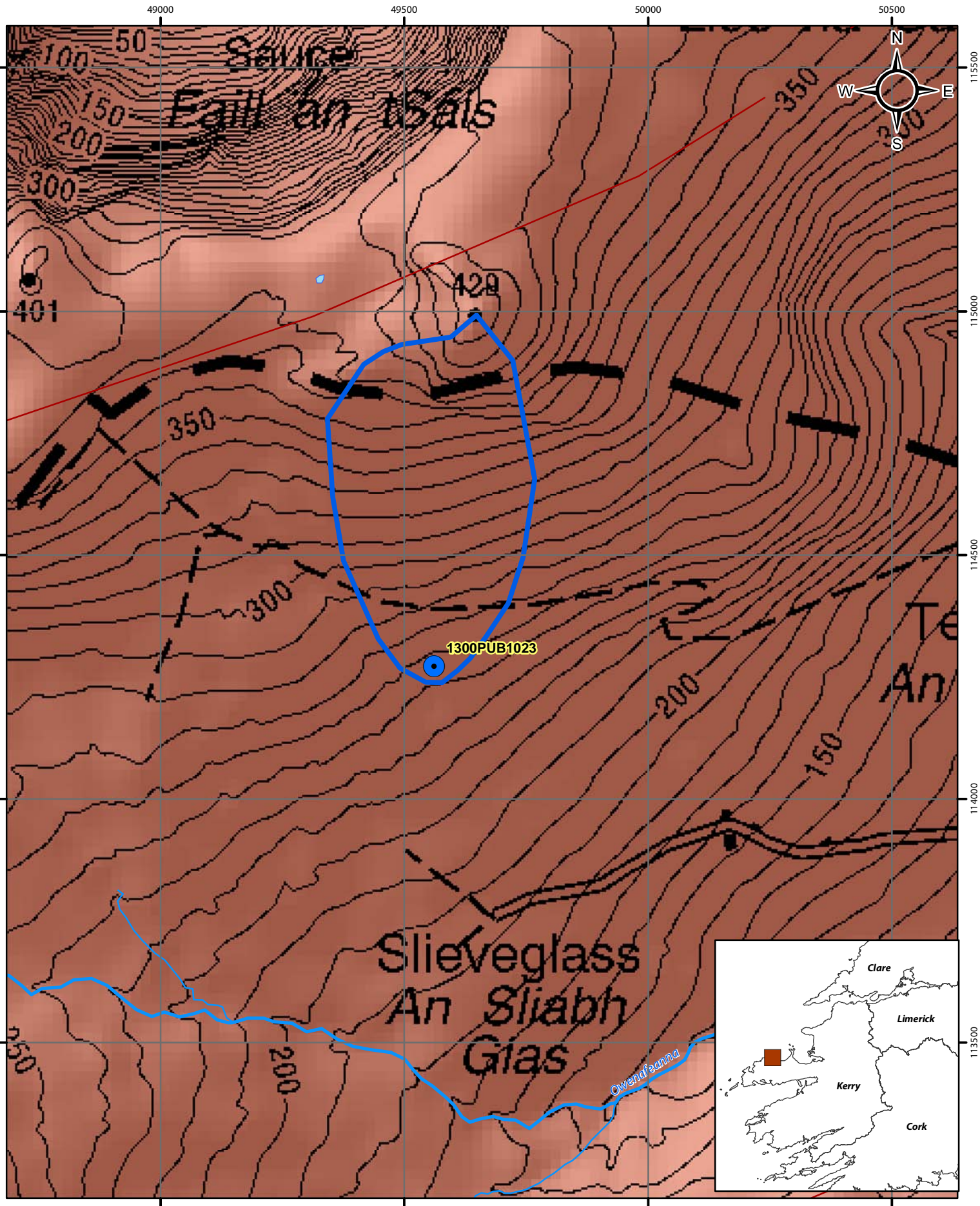




## Aquifer Category Map for Ce Bhreanainn 015D

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

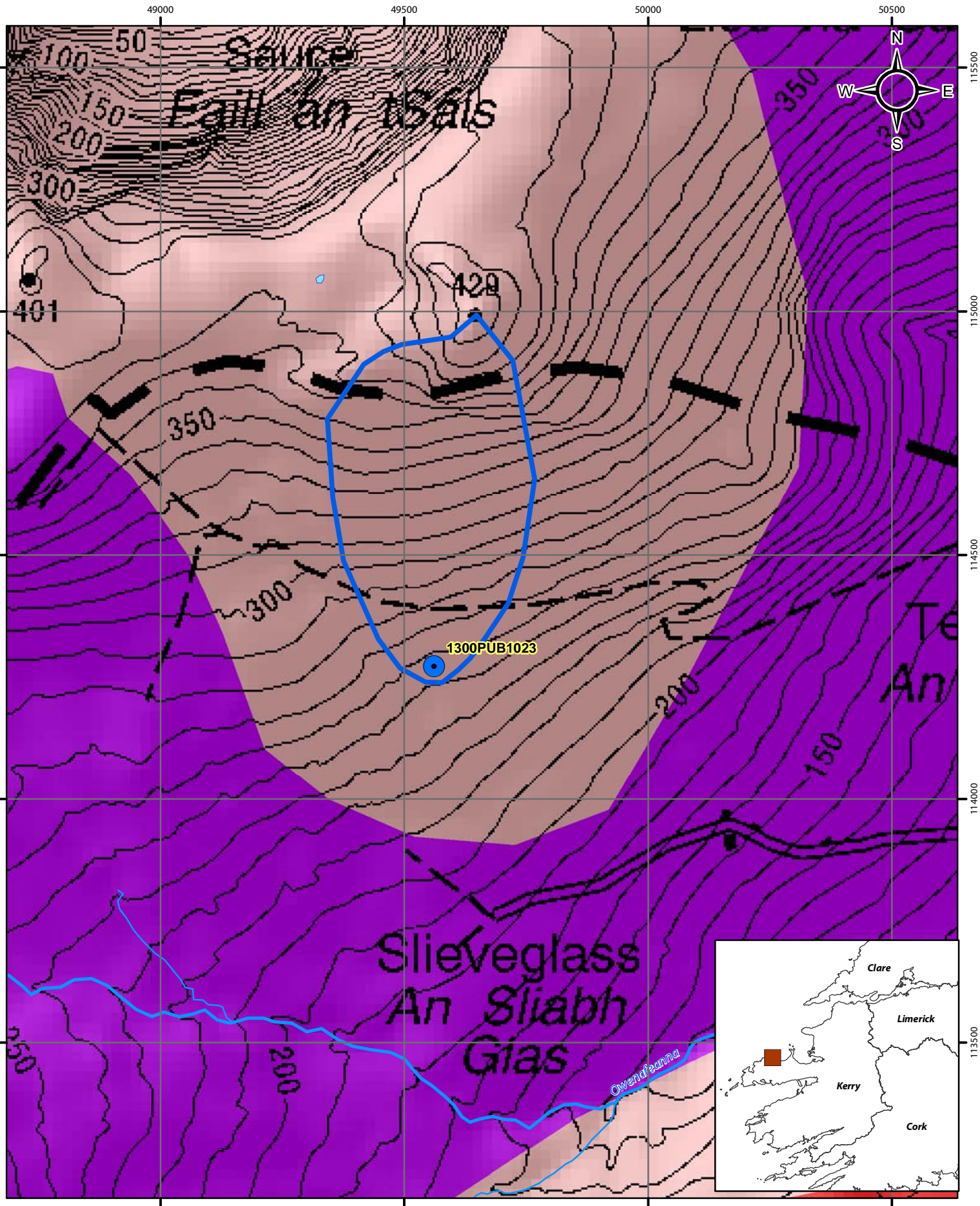




## Bedrock Map for Ce Bhreanainn 015D

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

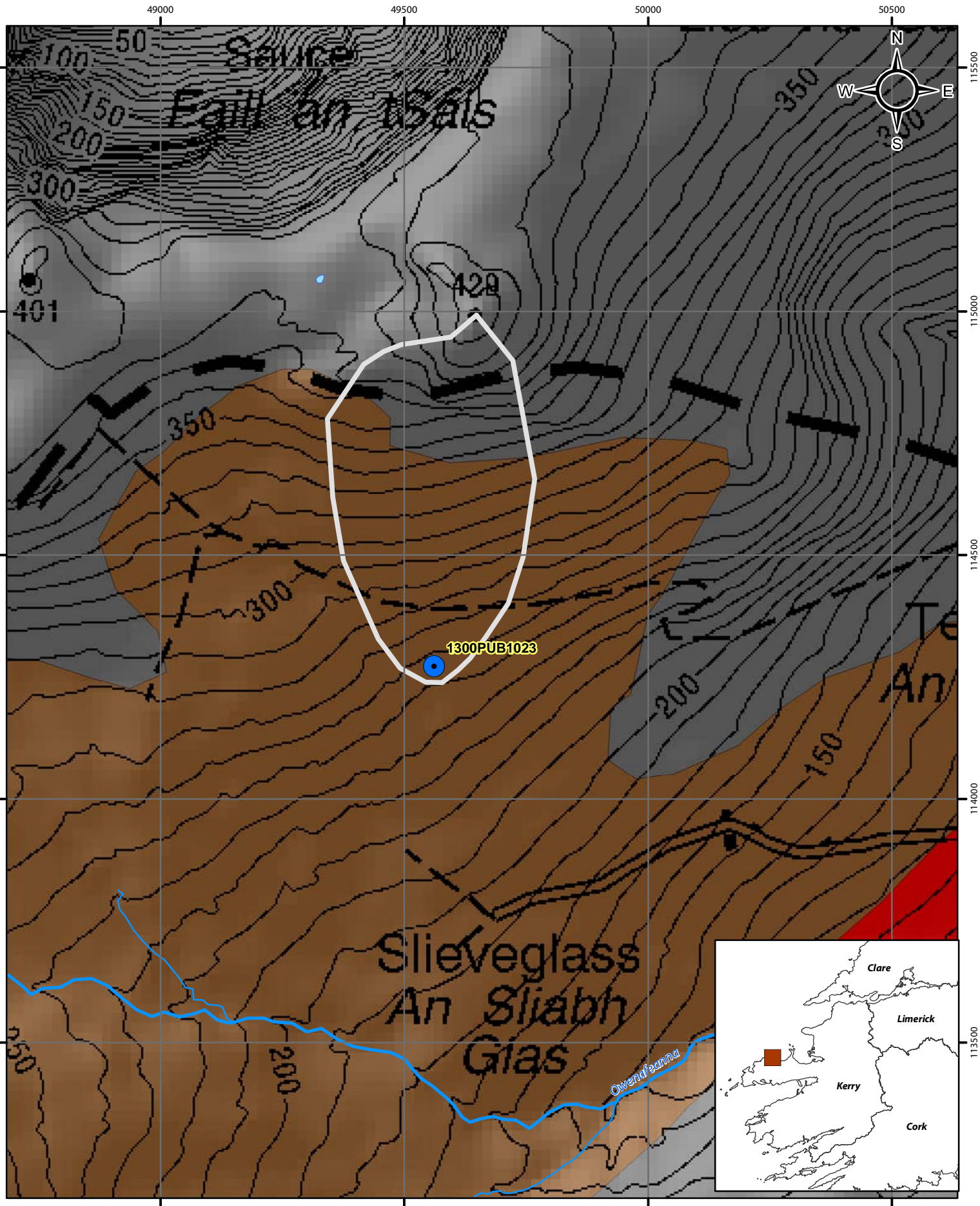












## Groundwater Vulnerability Map for Ce Bhreanainn 015D



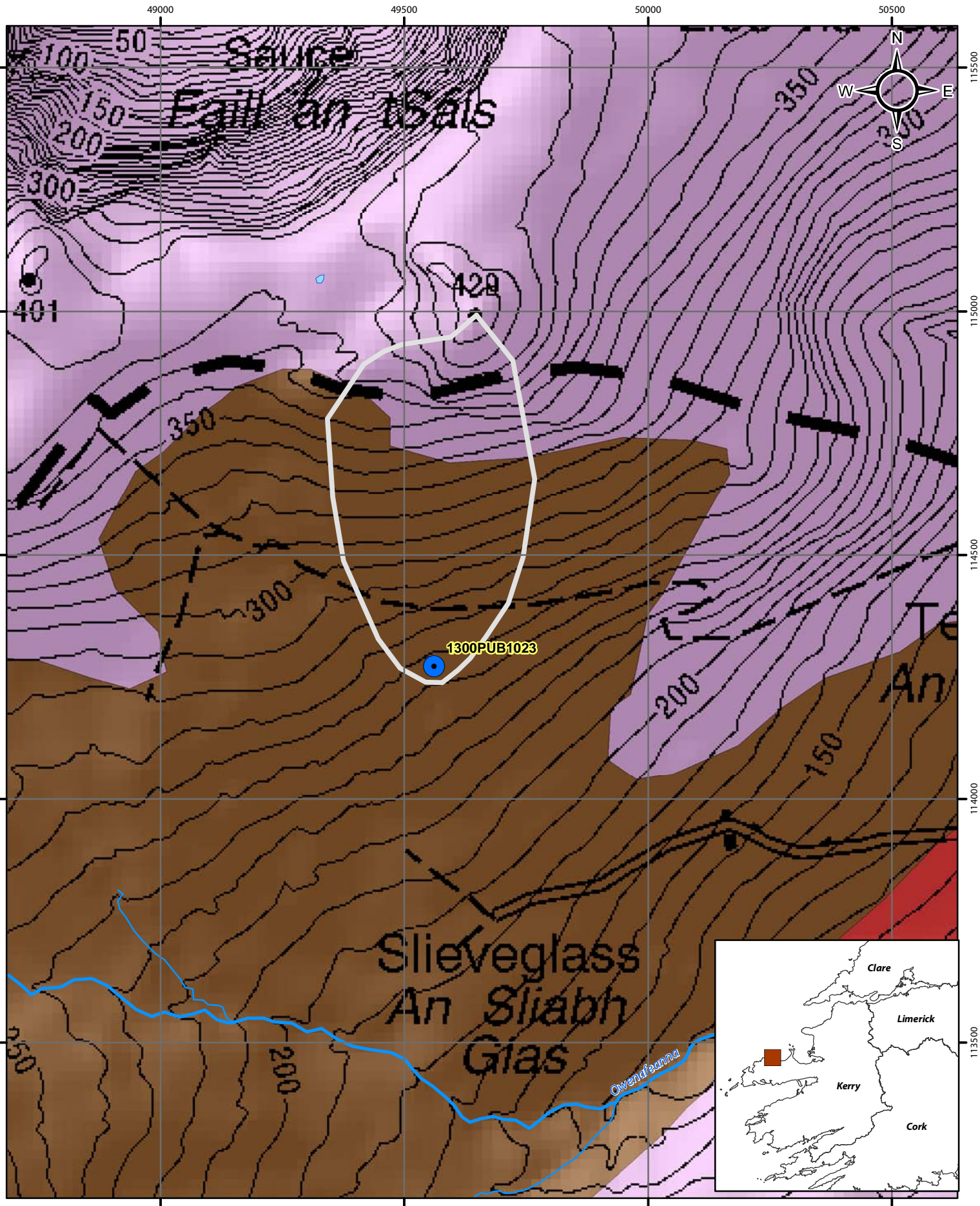




## Subsoils Map for Ce Bhreanainn 015D

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





## Soils Map for Ce Bhreanainn 015D

