

## Water Framework Directive Groundwater Monitoring Programme

### Site Information

### Clonroche



Clonroche PWS is a borehole situated in Volcanics and is used as a public water supply. The abstraction rate is 230 m<sup>3</sup>/day. A backup supply well is located adjacent to the pumping well.



Wexford

August 2011

SITE INFORMATION					
Site Name:	Clonroche		County:	Wexford	
RBD:	SERBD		EU Reporting Code:	---	
Easting:	132078		GWB Name:	Enniscorthy	
Northing:	285495		GWB Code:	IE_SE_G_061	
Site Use:	Drinking Water		Drinking Water Code:	3300PUB1452	
Hydrometric Area:	12		Water Level Monitoring Network:	Level	Flow
Townland:	Tomfarney			N	N
Ownership:	Wexford County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		N
Site Comments:	---				

SITE DIRECTIONS	
Location and Access Information:	Clonroche is located down a laneway off the N30 road, 2.5 km SE of Clonroche Village. The source is securely fenced.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	Borehole	Abstraction Rate (m³/d):	230	Ground Elevation (m OD):	100
Borehole Log Available:	---	Total Drilled Depth (m bgl):	Unknown	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):	steel	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:	Clonroche	Number of Abstraction Points in the Scheme:	1	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	A single borehole abstracts 230 m³/day for Clonroche village.				

HYDROGEOLOGY							
GEOLOGY	Soil:	Deep poorly drained mineral (AminPD)				Subsoil Permeability:	Moderate
	Subsoil:	Tills (diamictos) (TLPs)					
	Bedrock:	Volcanics					
HYDROGEOLOGY	Aquifer Category:	Rf	Vulnerability at Monitoring site:	High	Flow Regime:	Productive fissured bedrock	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km <sup>2</sup> ):	0.3	ZOC Delineated By:	Tobin (JD)	Recharge Estimate (mm/yr):	200	
	ZOC Delineation Comments:	ZOC is based on topography, an abstraction rate 150% of current rate and assuming streams are groundwater divides. Discharge and hydrogeological field mapping required; ZOC uncertain. Large Fault dissects ZOC.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	42.09	36.36	0	0	0	21.56	0
HYDROCHEMISTRY							
Hydrochemical Signature:	---		Additional Water Chemistry Information:	Limited dataset. Chlorides about 20mg/l. nitrates concentration 35.2mg/l in 2007.			
Alkalinity (mg/l HCO <sub>3</sub> ):	Average:	Range:					
	---	---					
Hardness (mg/l CaCO <sub>3</sub> ):	Average:	Range:					
	---	---					
Conductivity (uS/cm):	Average:	Range:					
	221	145-270					
Monitoring Record Period:	From:	To:					
	---	---					
RISK ASSESSMENT							
Pressure (e.g., Nitrates, Phosphates, Abstractions):	Phosphates		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							
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Borehole Cover BH1



Borehole Cover BH2

## 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 (JD)	Date:	Feb 2011
Version 2:	Prepared by		Date:	
Version 3:	Prepared by		Date:	
Version 4:	Prepared by		Date:	



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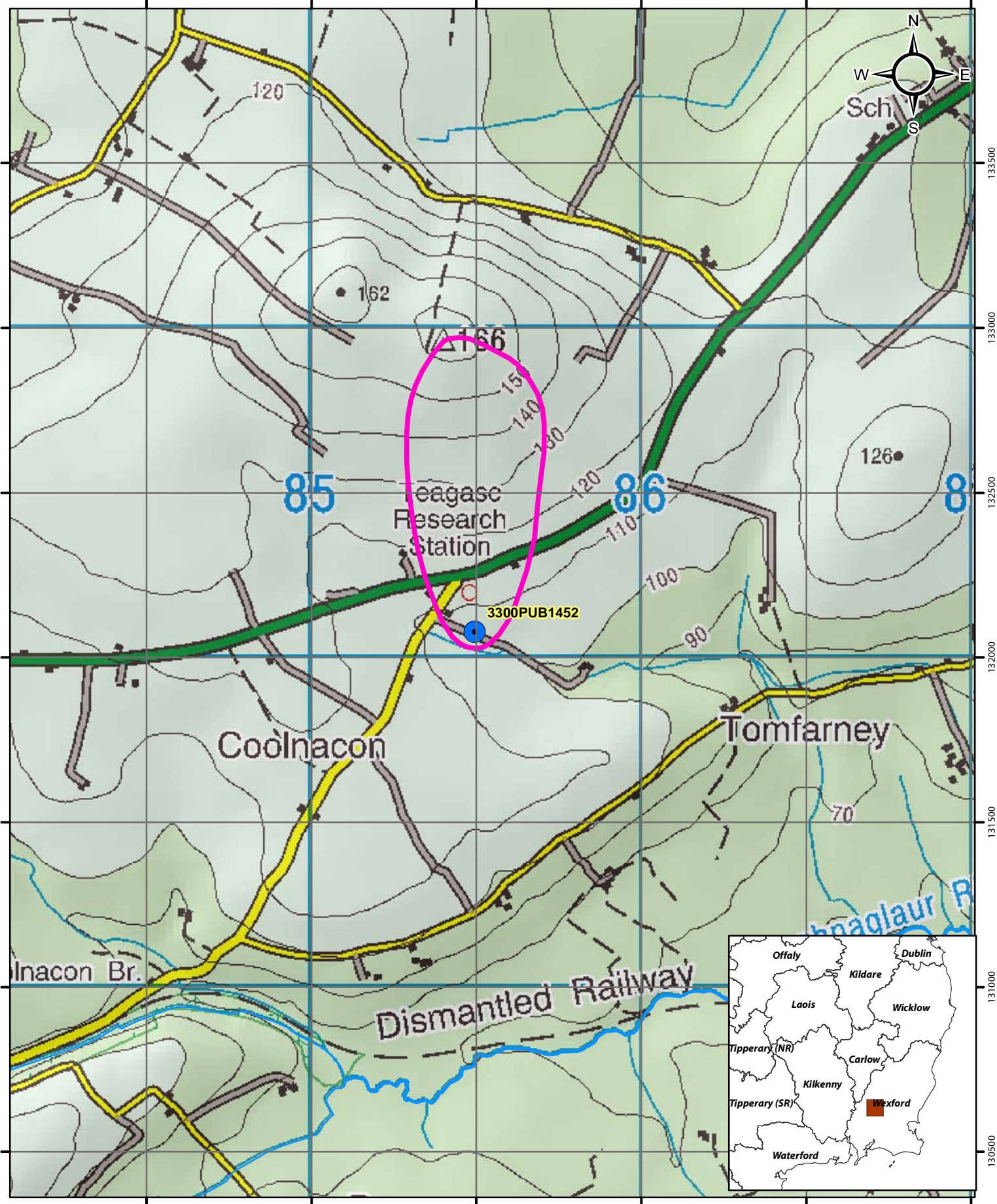
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## Location Map for Clonroche

- Abstractions
- Zone of Contribution
- River

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0 0.25 0.5 1 km



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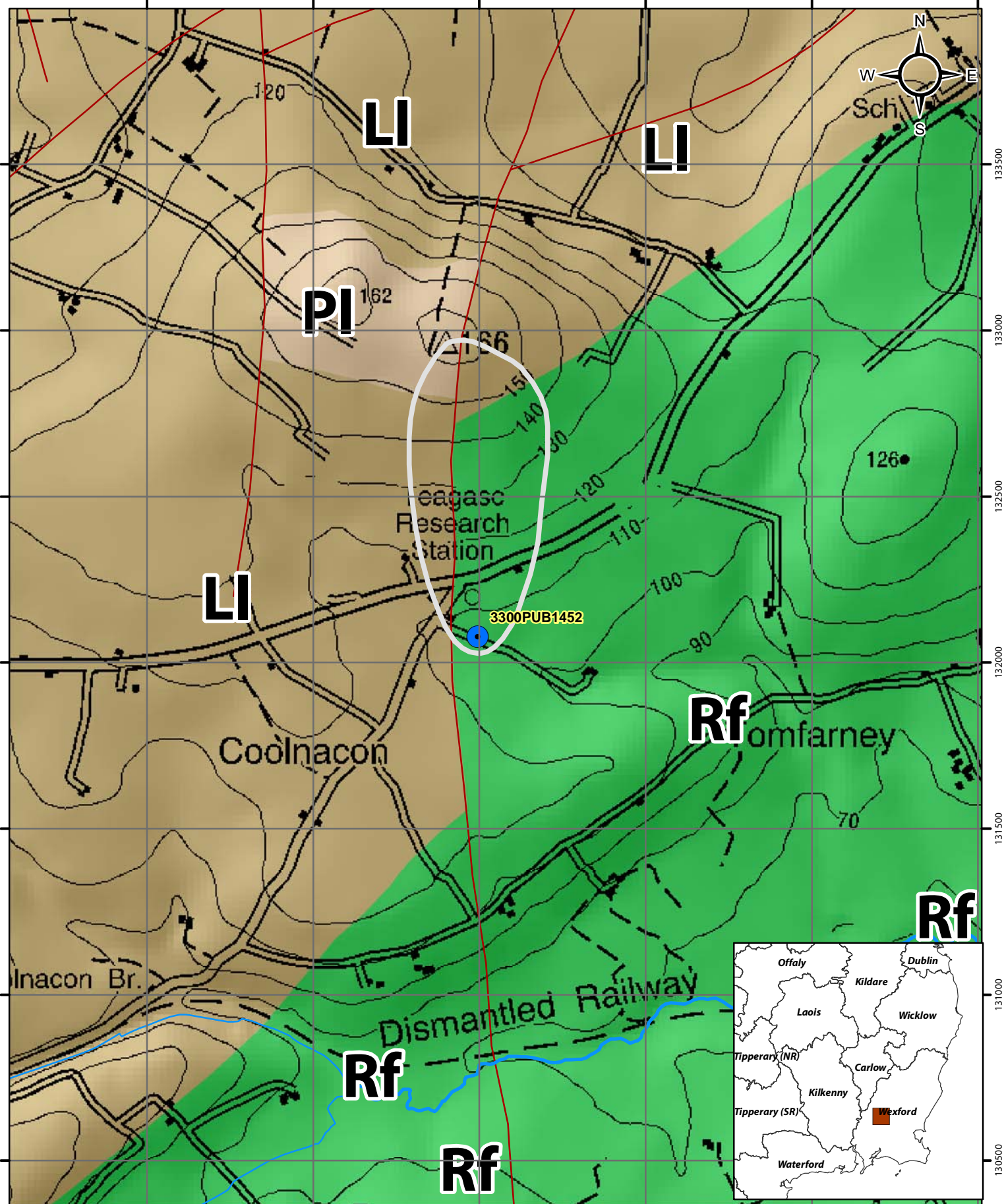
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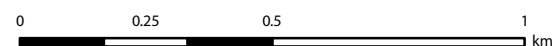
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## Aquifer Category Map for Clonroche





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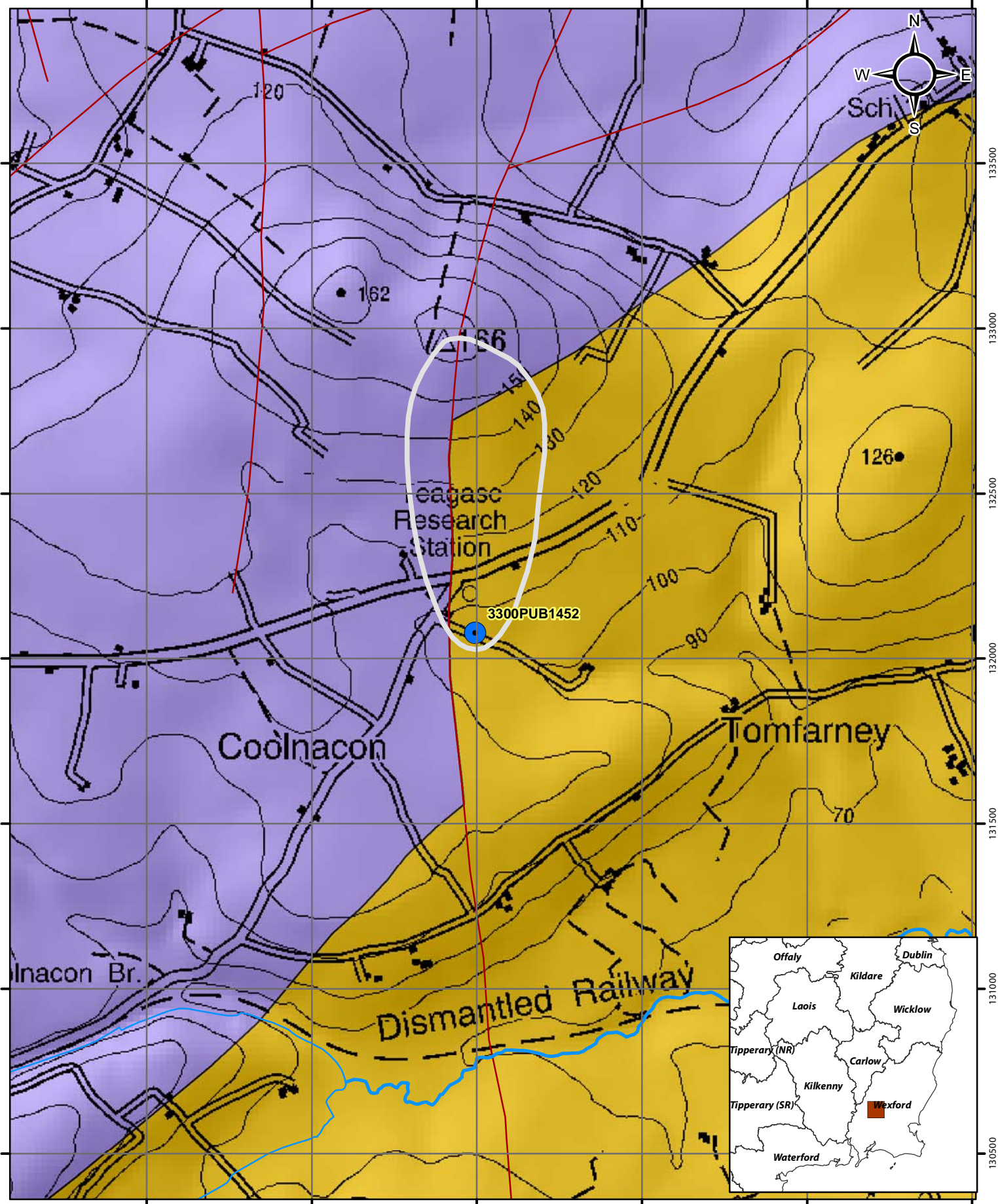
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## Bedrock Map for Clonroche

- Abstractions
- Fault
- Granites & other Igneous Intrusive rocks
- Zone of Contribution
- River
- Ordovician Metasediments
- Ordovician Volcanics



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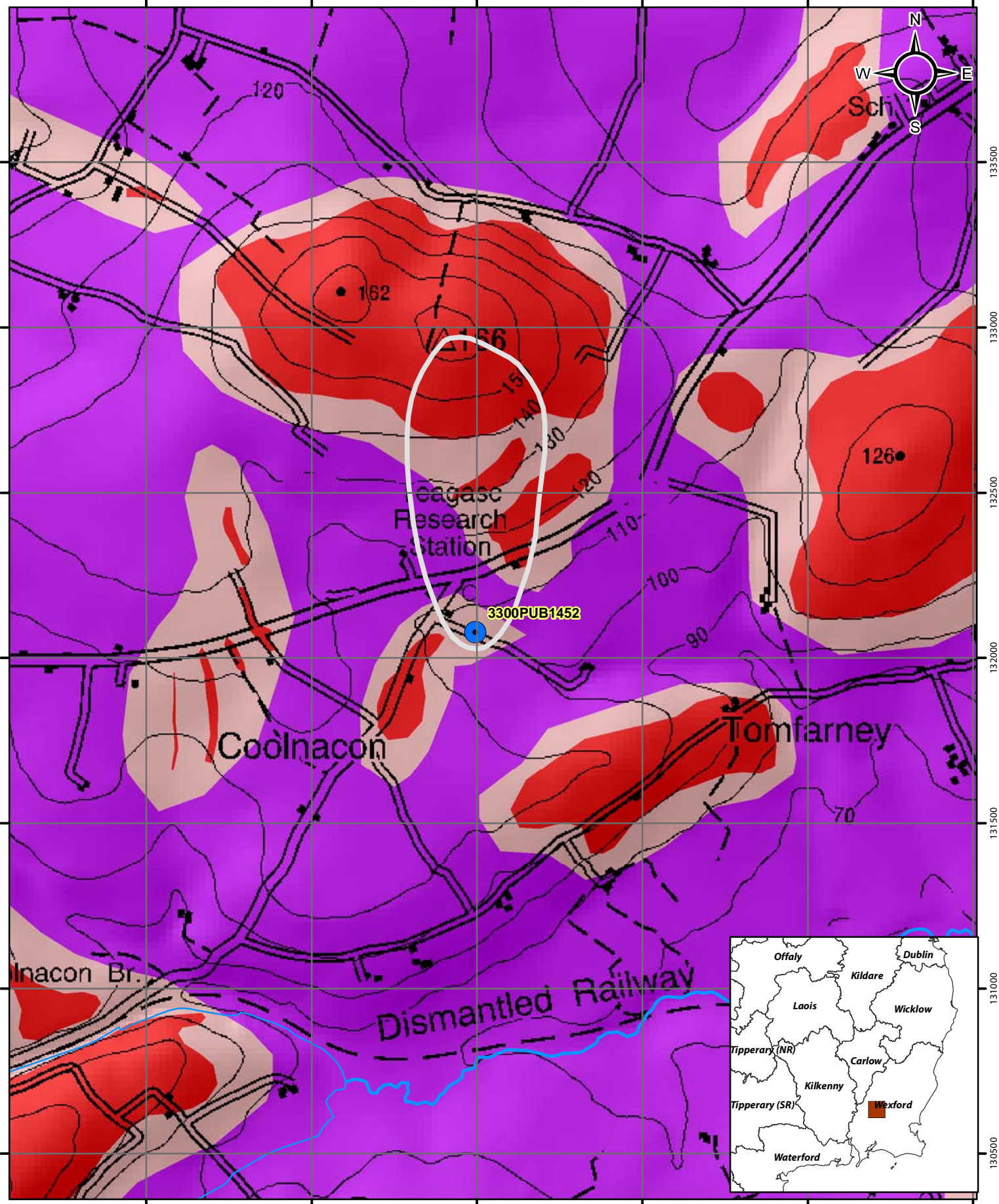
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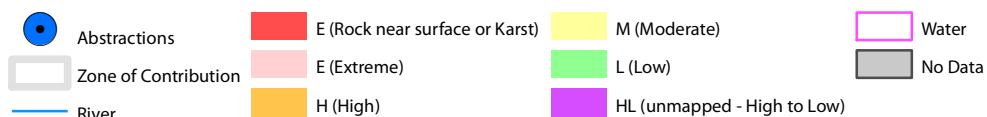
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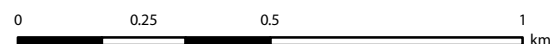
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## Groundwater Vulnerability Map for Clonroche



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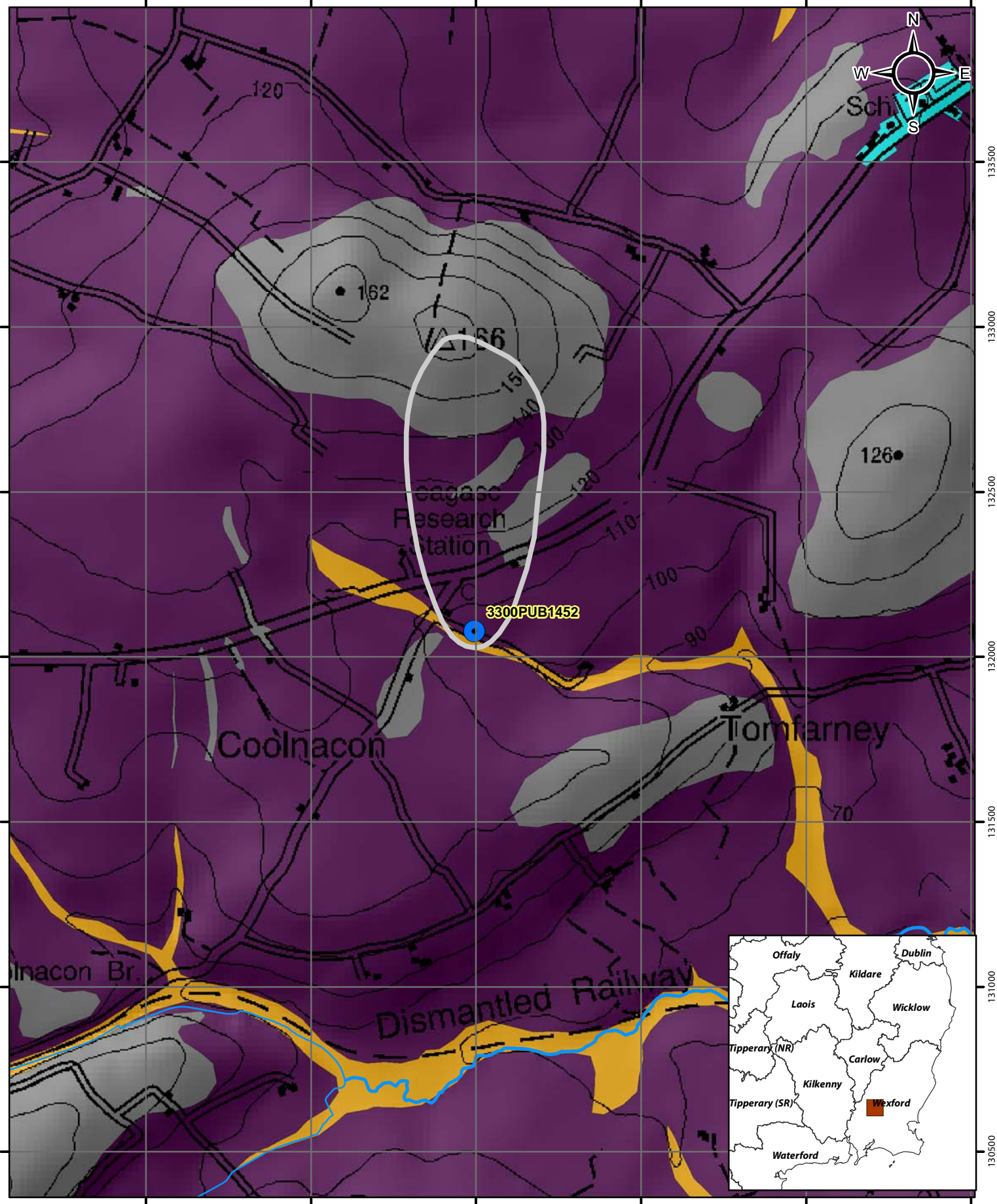
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## Subsoils Map for Clonroche



Abstractions

Alluvium

Made ground

Zone of Contribution

Bedrock outcrop or subcrop

Till derived from Lower Palaeozoic shales

River



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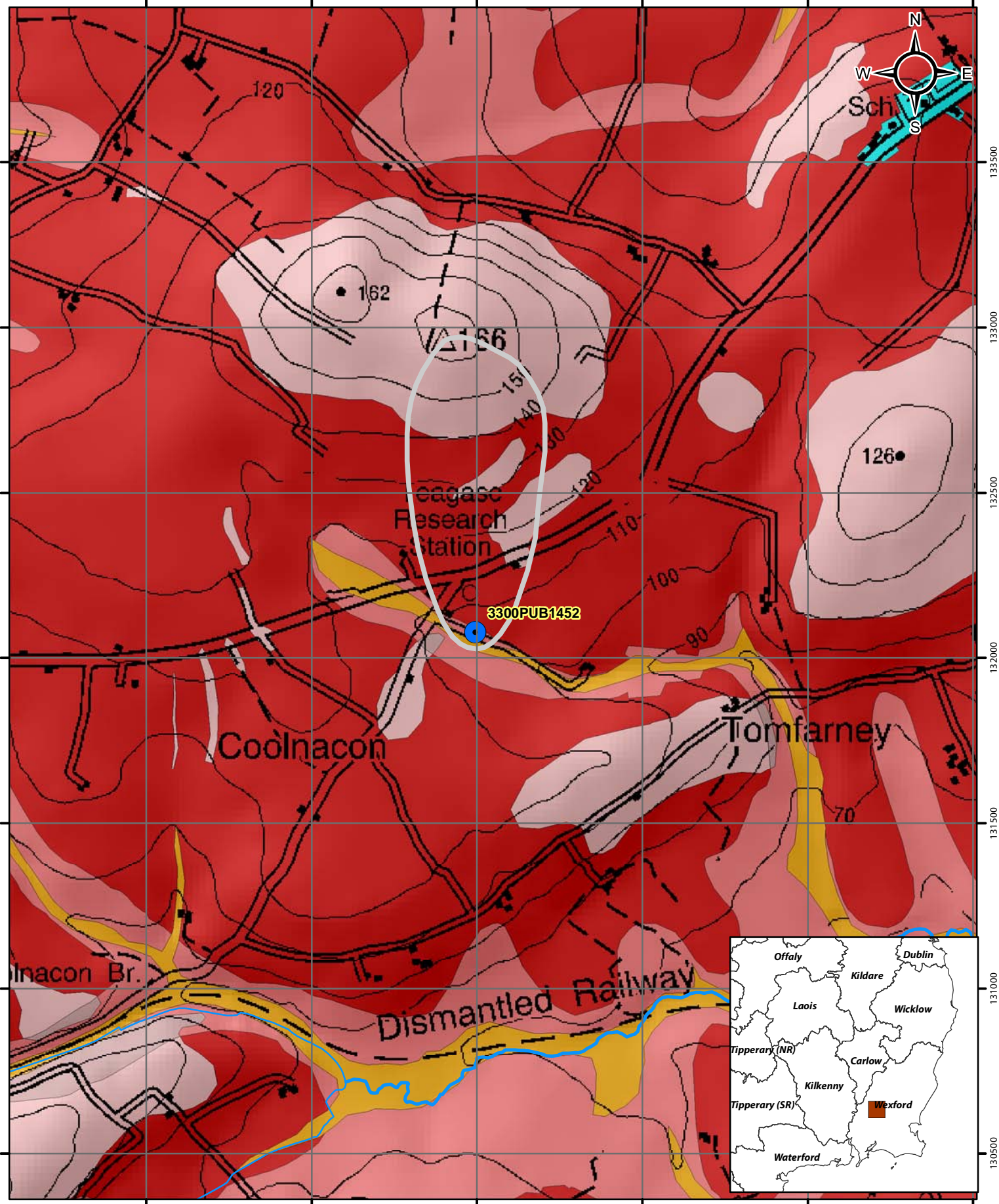
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## Soils Map for Clonroche

