

Water Framework Directive Groundwater Monitoring Programme

Site Information

Fethard RWS (Laffansbridge)



Fethard RWS (Laffansbridge) is a 36.5m deep borehole situated in Dinantian Pure Bedded Limestones. It is not in use presently as a public water supply.



SITE INFORMATION					
Site Name:	Fethard RWS (Laffansbridge)		County:	Tipperary South	
RBD:	SERBD		EU Reporting Code:	IE_SE_G_040_23_004	
Easting:	219100		GWB Name:	Clonmel	
Northing:	146620		GWB Code:	IE_SE_G_040	
Site Use:	Drinking Water (PWS)		Drinking Water Code:	---	
Hydrometric Area:	16		Water Level Monitoring Network:	Level	Flow
Townland:	MANSERGHSHILL			N	N
Ownership:	South Tipperary County Council				
Water Quality Monitoring Network:	Surveillance		Operational (Point)		Operational (Diffuse)
	N		N		Y
Site Comments:	Fethard RWS (Laffansbridge) is a 36.5m deep borehole situated in Dinantian Pure Bedded Limestones and is no longer used as a public water supply. The abstraction rate is 900m³/day.				

SITE DIRECTIONS	
Location and Access Information:	Located 3.1 km northwest of Killenale. The site is accessed from the third class road running south from the R691 at Laffansbridge.
Additional Comments:	---

WELL INFORMATION					
Monitoring Point Type:	BH	Abstraction Rate (m³/d):	n/a	Ground Elevation (m OD):	120
Borehole Log Available:	---	Total Drilled Depth (m bgl):	36.5	Depth to Bedrock (m bgl):	---
Top of Casing (m agl):	---	Upper Casing Diameter (mm):	200	Lower Casing Diameter (mm):	---
Final Borehole Depth (m):	Cased to Rock	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:	Fethard	Number of Abstraction Points in the Scheme:	7	Source Report Available	N
Source Report Info:	---				
Scheme Summary:	The Fethard scheme consists of seven abstraction location at three sites, 5 boreholes at Coalbrook, a spring at Mullinabawn and one borehole at Laffansbridge. The scheme at Laffansbridge is not in use. All three site are in the EPA GW Monitoring Network.				

HYDROGEOLOGY							
GEOLOGY	Soil:	Shallow well drained mineral (BminSW)				Subsoil Permeability:	n/a
	Subsoil:	Bedrock at or close to surface (Rck)					
	Bedrock:	Dinantian Pure Bedded Limestones					
HYDROGEOLOGY	Aquifer Category:	Rkd	Vulnerability at Monitoring site:	X-Extreme	Flow Regime:	Karstified	
ZONE OF CONTRIBUTION	Estimated ZOC Size (km ²):	0.51	ZOC Delineated By:	OCM (DC)	Recharge Estimate (mm/yr):	439	
	ZOC Delineation Comments:	This source is not in use. The ZOC was delineated based on topography and the entire hydrogeological catchment was used.					
Groundwater Vulnerability within ZOC (% area):	Extreme (X)	Extreme (E)	High	Moderate	Low	High to Low	Unclassified
	43.18	56.82	0	0	0	0	0
HYDROCHEMISTRY							
Hydrochemical Signature:	Ca-HCO ₃		Additional Water Chemistry Information:	During the monitoring period: The average nitrate concentration was 30 mg/l NO ₃ and the maximum nitrate concentration was 191 mg/l NO ₃ . The average ammonium concentration was 0.105 mg/l N and the maximum ammonium concentration was 1.74 mg/l N. The average molybdate reductive phosphorus (MRP) concentration was 0.01 mg/l P and the maximum MRP concentration was 0.12 mg/l P. The average chloride concentration was 17.1 mg/l Cl and the maximum chloride concentration was 33 mg/l Cl.			
Alkalinity (mg/l HCO ₃):	Average:	Range:					
	221	127-300					
Hardness (mg/l CaCO ₃):	Average:	Range:					
	316	189-468					
Conductivity (uS/cm):	Average:	Range:					
	690	507-1228					
Monitoring Record Period:	From:	To:					
	1993	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	69.06	0.00	0.00	30.94		
OTHER INFORMATION							



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 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).

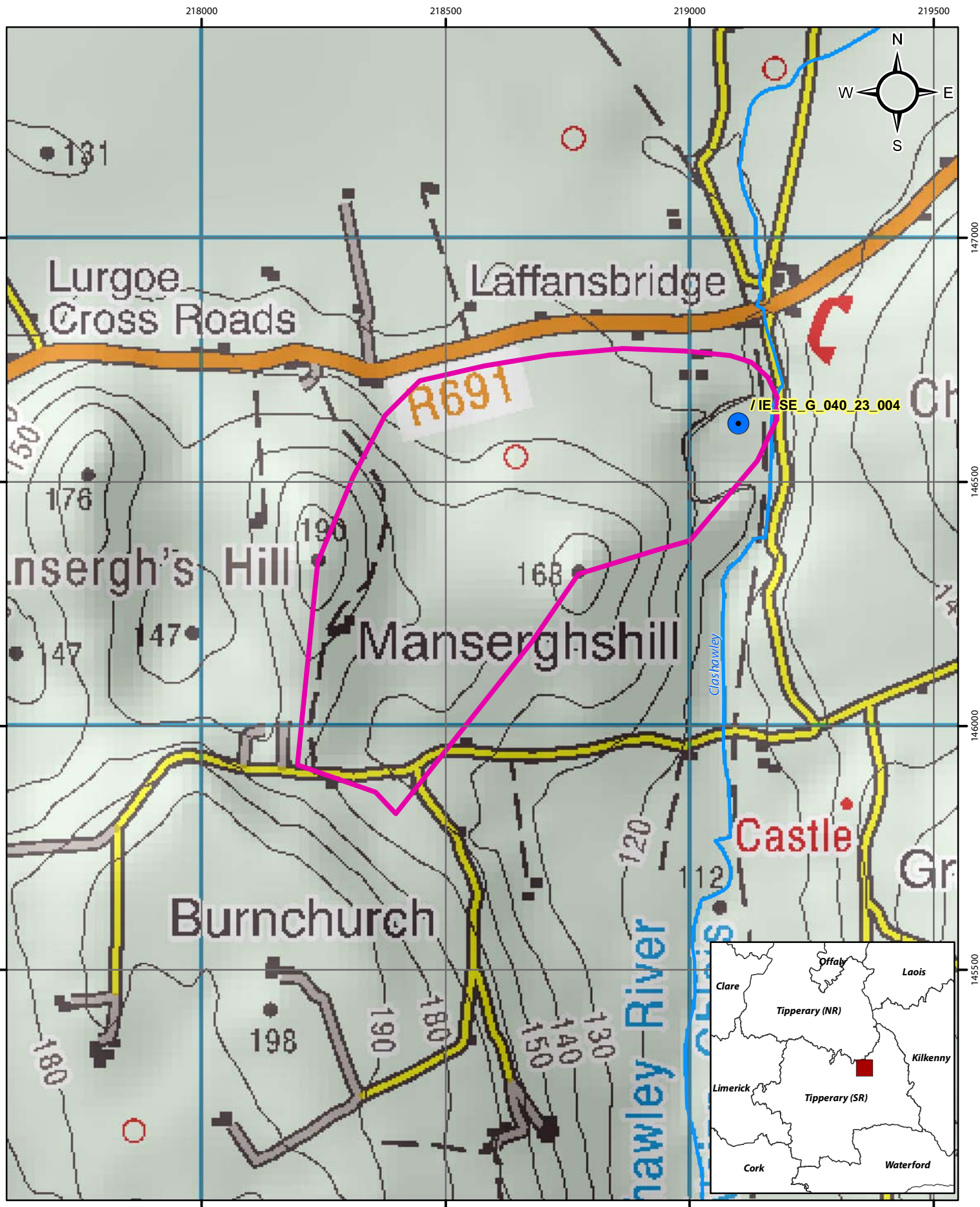
General Downgradient Distances

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
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:	

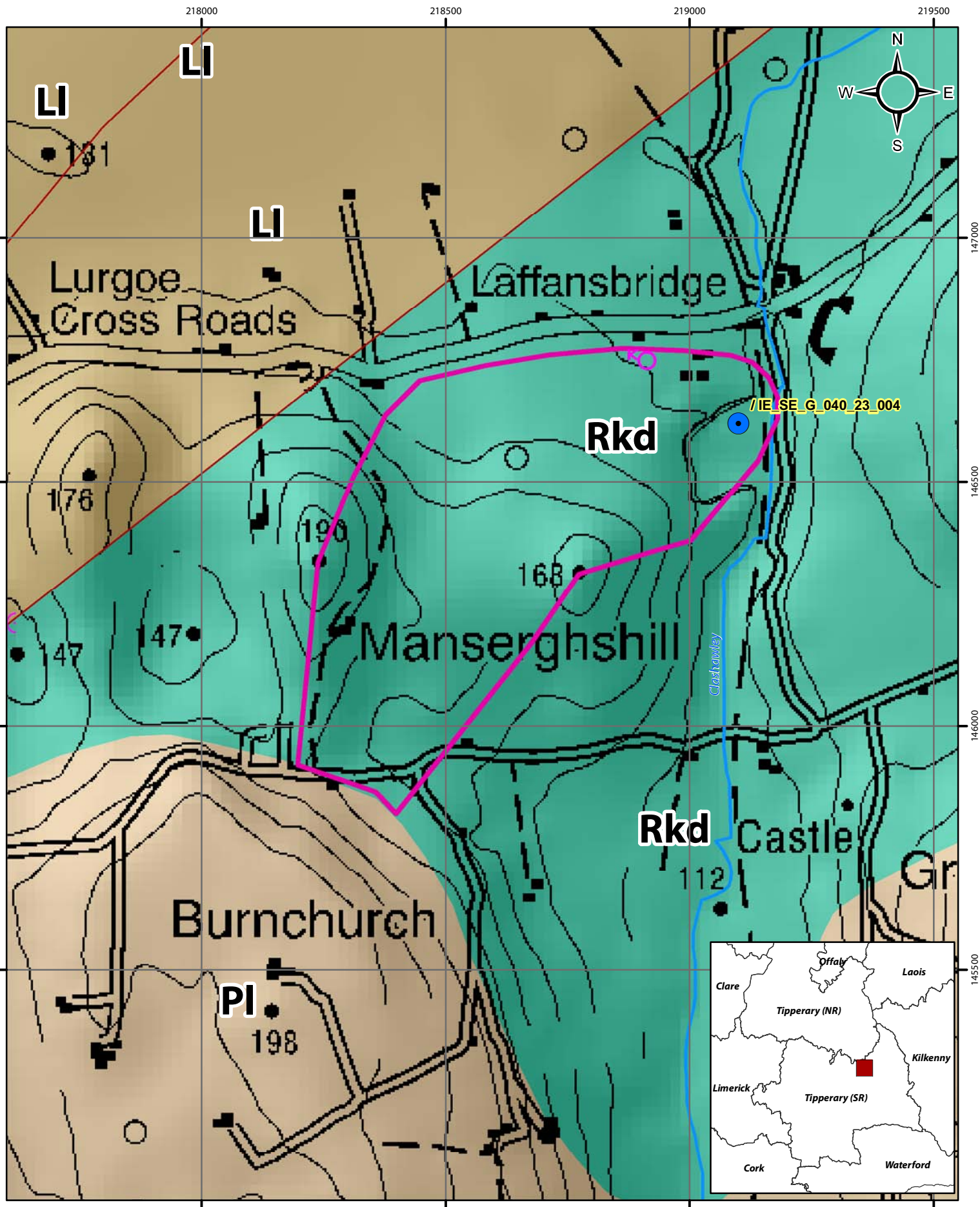


Location Map for Fethard RWS (Laffansbridge)








-  Abstractions
-  Zone of Contribution
-  River

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0 0.25 0.5 1 km

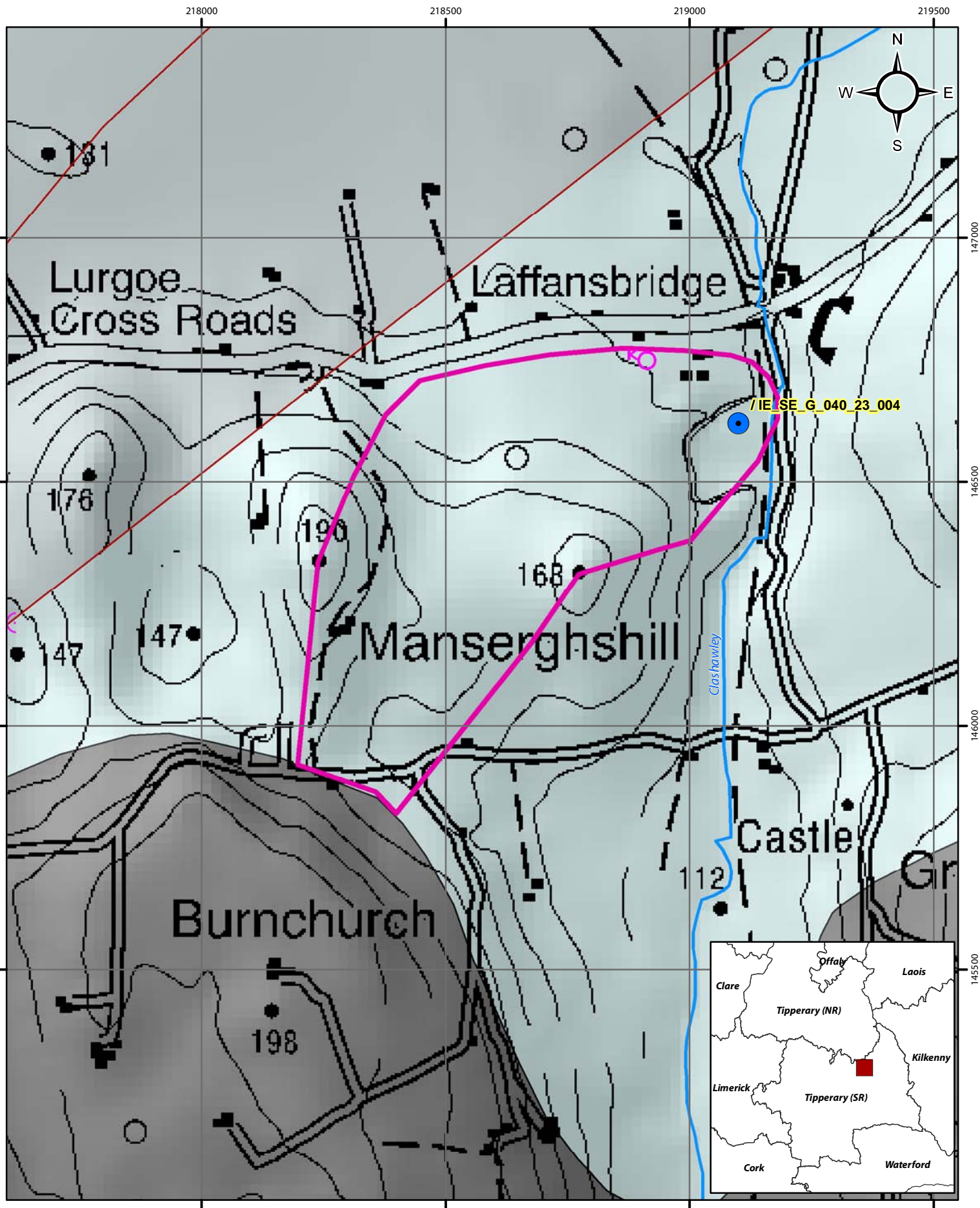


Aquifer Category Map for Fethard RWS (Laffansbridge)

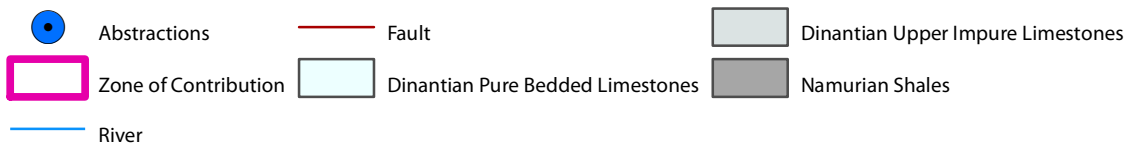
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|--|----------------------|---|-------|---|-----|
|  | Abstractions |  | Fault |  | LI |
|  | Zone of Contribution |  | PI |  | Rkd |
|  | River | | | | |

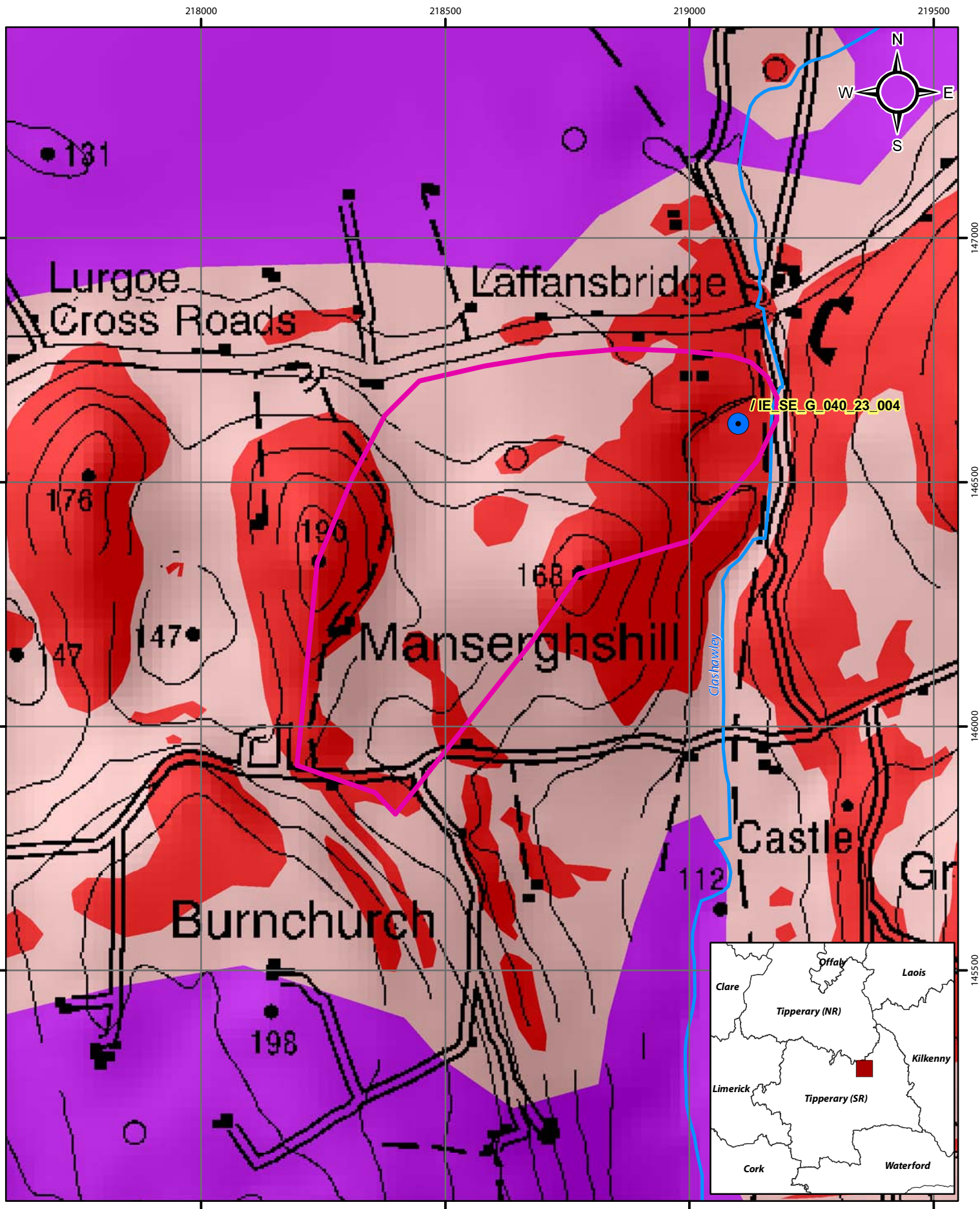
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0 0.25 0.5 1 km

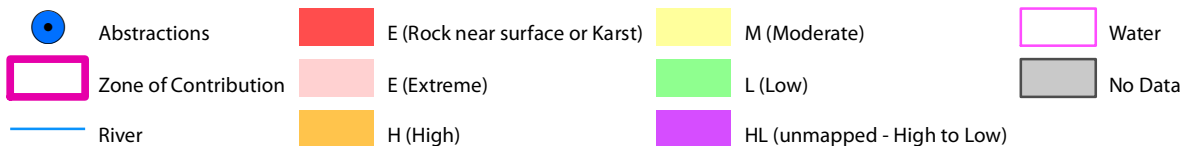


Bedrock Map for Fethard RWS (Laffansbridge)

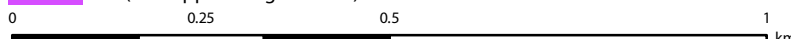


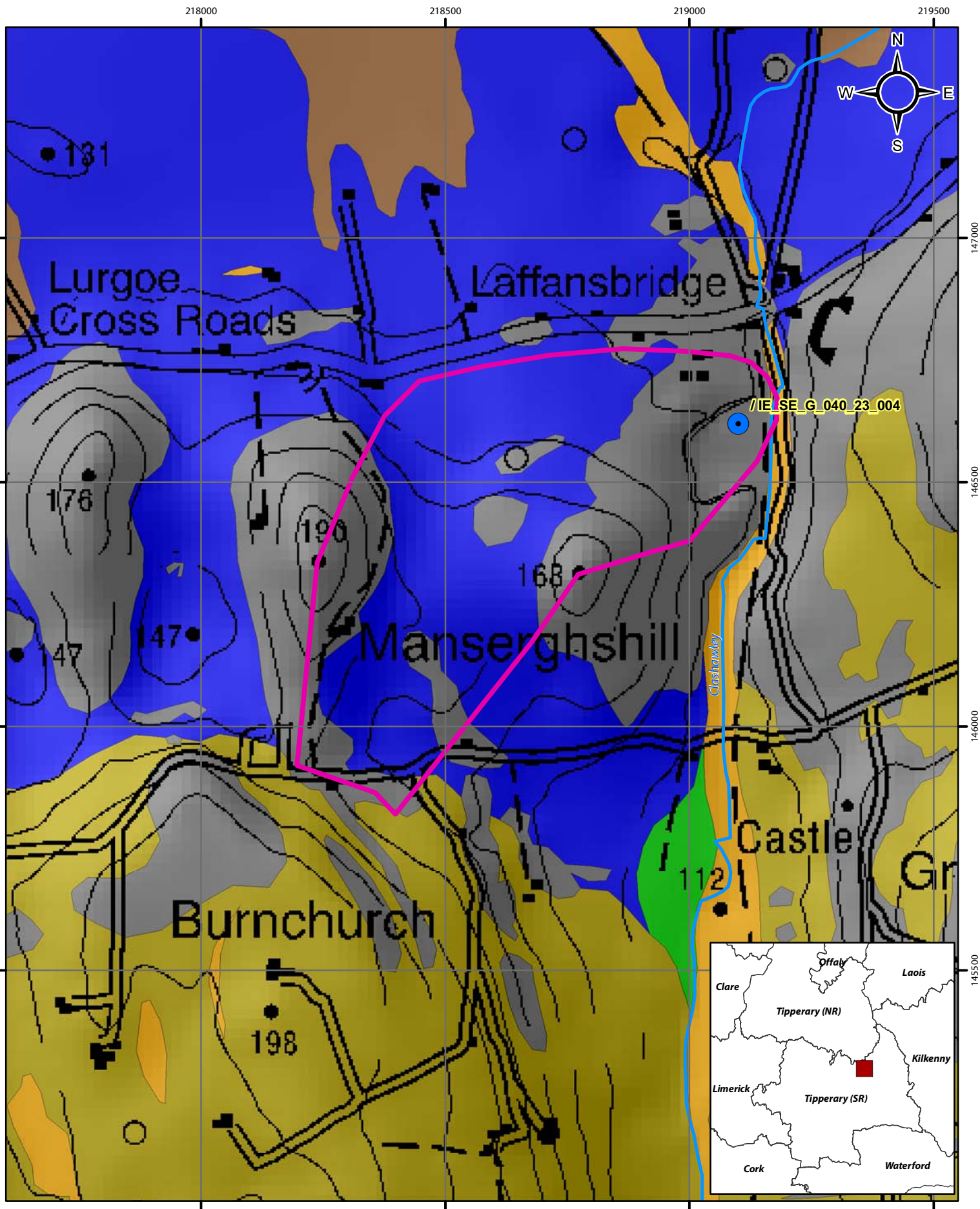


Groundwater Vulnerability Map for Fethard RWS (Laffansbridge)












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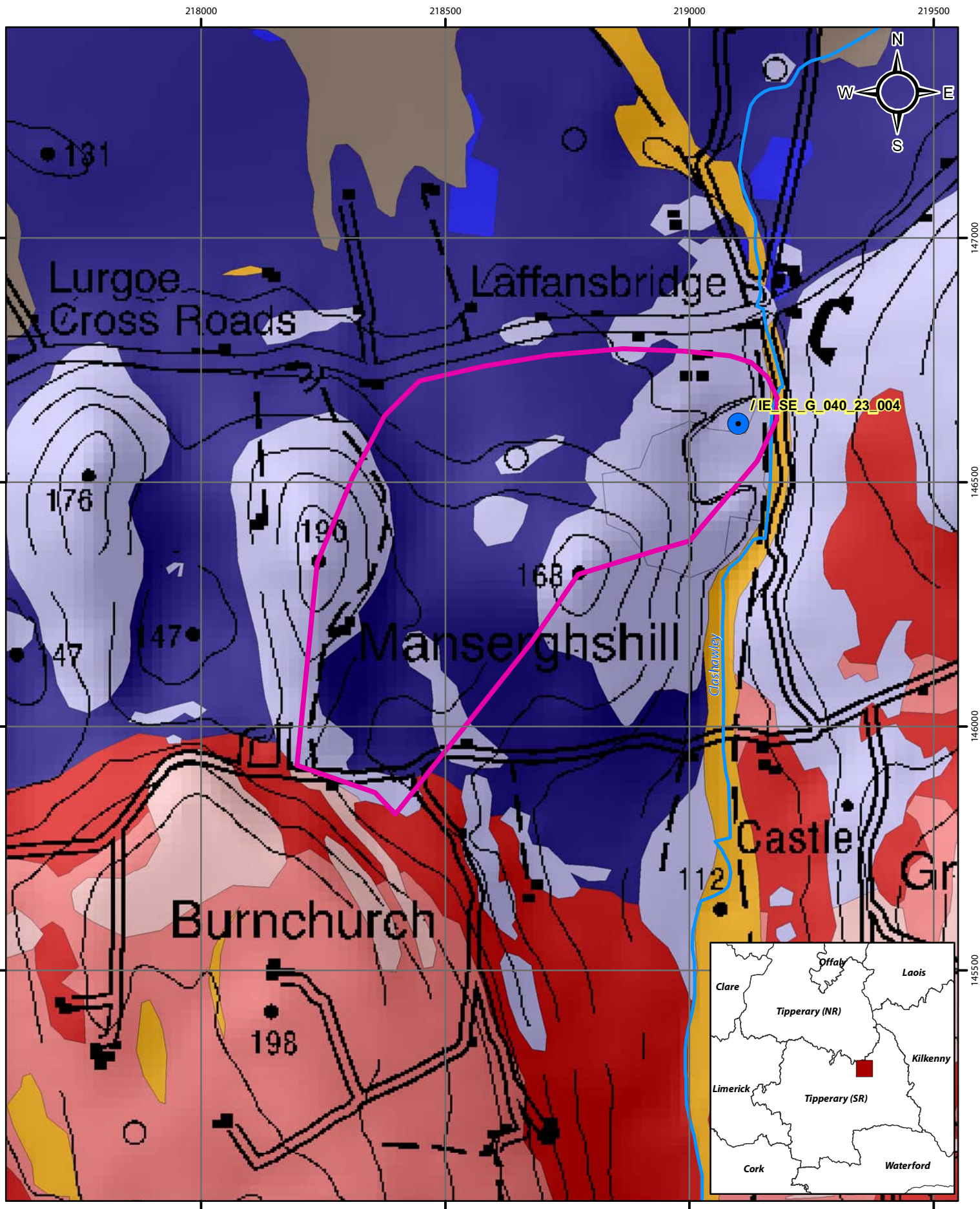


Subsoils Map for Fethard RWS (Laffansbridge)

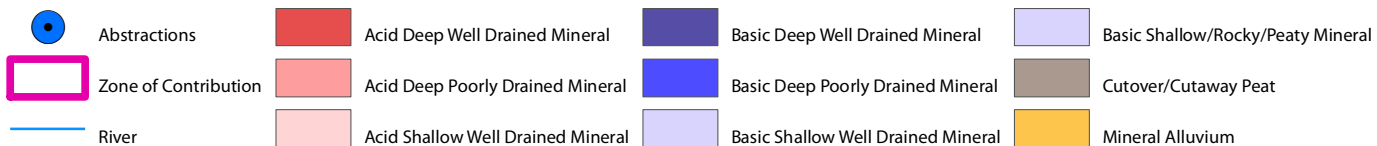
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|---|---|--|
|  Abstractions |  Alluvium |  Bedrock outcrop or subcrop |
|  Zone of Contribution |  Cutover raised peat |  Till derived from limestones |
|  River |  Gravels derived from limestones |  Till derived from Namurian sandstones and shales |

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0 0.25 0.5 1 km



Soils Map for Fethard RWS (Laffansbridge)



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