



Water Framework Directive Quarries Risk Assessment Process

Midleton Park Hotel
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Wastewater & industrial discharges

Other point sources, i.e. landfills, quarries, contaminated sites

Agriculture

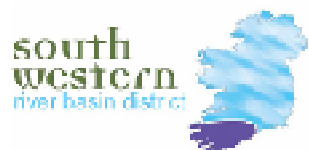
Wastewater from unsewered properties, i.e. septic tanks

Forestry

Dangerous substances

Physical changes to water bodies

Abstractions, e.g. for water supply





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Quarry Risk Assessment

- This assessment process is based largely on information received by local authorities under the registration process of Section 261 of the Planning and Development Act (2000). Section 261.
- Only those Quarries for which planning permission was granted in the 5 years before section 261 became operative are excluded.

Quarry Risk Assessment

- Those excluded quarries are considered to have been comprehensively assessed in terms of likely environmental impact as part of the more recent planning requirements and should therefore have sufficient information contained as part of the planning files to provide the necessary information to complete the risk assessment process for WFD purposes.
- The proposed methodology comprises two levels of assessment.

- The first level is an initial assessment to rank quarries in order of the potential risk they pose to receptors based on information collected through the registration and planning review and using information on the hydrological and hydrogeological settings (GIS).
- The second level is a more detailed assessment of the highest risk quarries. The methodology considers both the quantitative and chemical/water quality risk of the quarry to the GWB and related SWB and GWDTs. It also considers the impacts on DWPA's which are groundwater abstractions.

Data Collection

- Quarry Name
- Location (Grid Reference)
- Quarry Area
- Extracted Material (Rock / Sand & Gravel)
- Available Monitoring Data
- Discharges to ground / surface water
- GW Abstraction Rates
- Water Table level if excavation below water table (winter or summer)



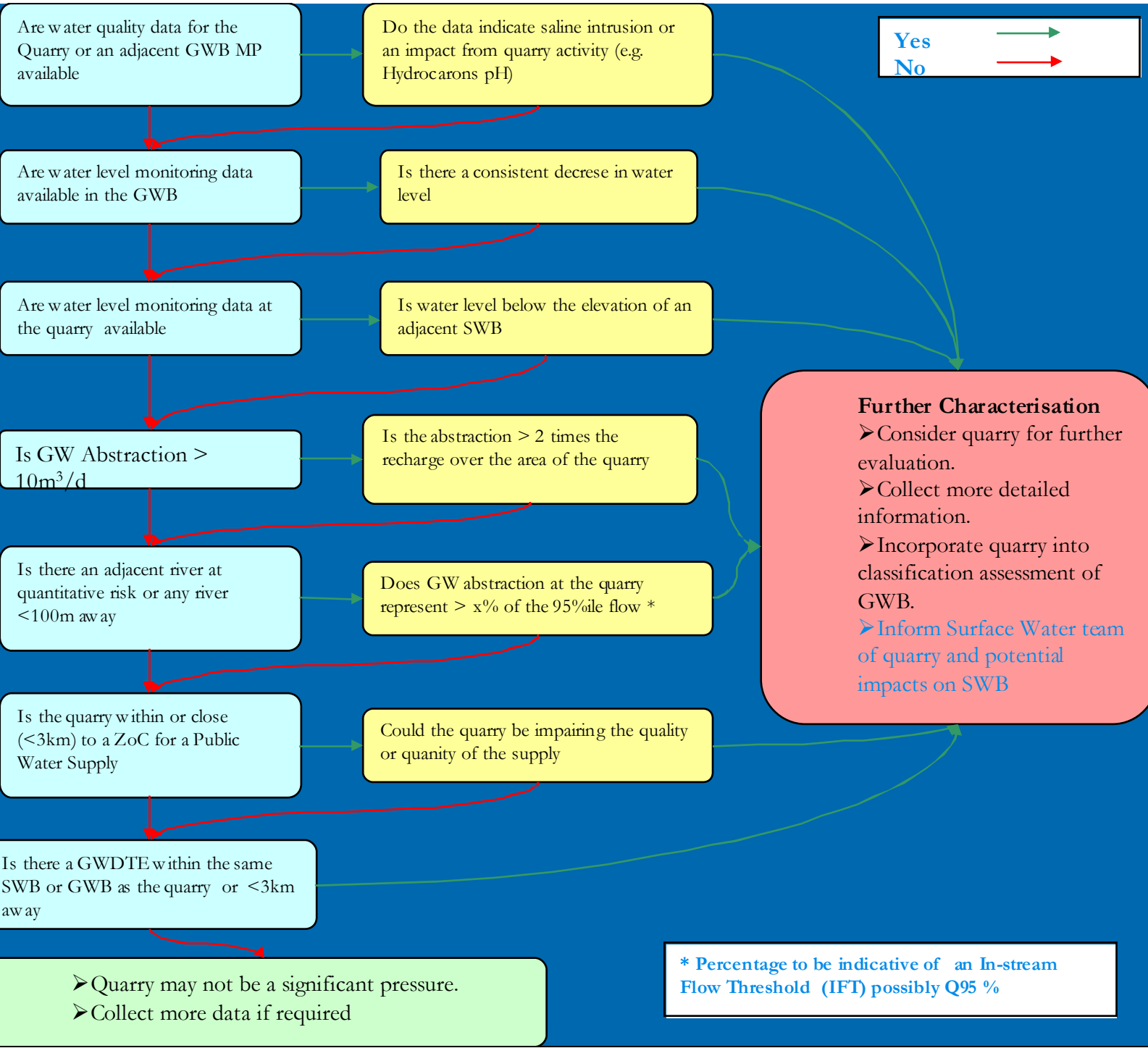
Assessment Process

- Once the relevant data is collected the quarry data should be entered into the GIS and the relevant GIS layers/database information should be collated.
- Aquifer type
- GWB name
- Proximity to surface waters & quantitative risk assessment result
- Proximity to GWDTE & related risk assessment result
- Proximity to public water supplies (DWPAs)



Assessment Process

- GW Recharge
- Proximity to GW level monitoring points
- When this information is collated for each quarry it should be possible to undertake an assessment that will result in a risk ranking of the quarries in order to determine which sites will require closer inspection.



Further Characterisation

- Consider quarry for further evaluation.
- Collect more detailed information.
- Incorporate quarry into classification assessment of GWB.
- Inform Surface Water team of quarry and potential impacts on SWB

* Percentage to be indicative of an In-stream Flow Threshold (IFT) possibly Q95 %

➤ Quarry may not be a significant pressure.
 ➤ Collect more data if required

Classification of Groundwater Body Status

- Status will be established at the GWB scale. Quarries identified as a risk need to be incorporated in to the classification assessment.
- Quarries are more likely to influence the GW Quantitative classification rather than the Chemical Classification, however chemical impacts should not be overlooked. There are four groundwater quantitative classification tests three of which are also included in the chemical assessment



Classification of Groundwater Body Status

- Classification tests common to both quantitative and chemical:
- No saline or other intrusion
- No significant damage to SWB
- No significant damage to GWDTE
- Quantitative classification only:
- Water Balance element

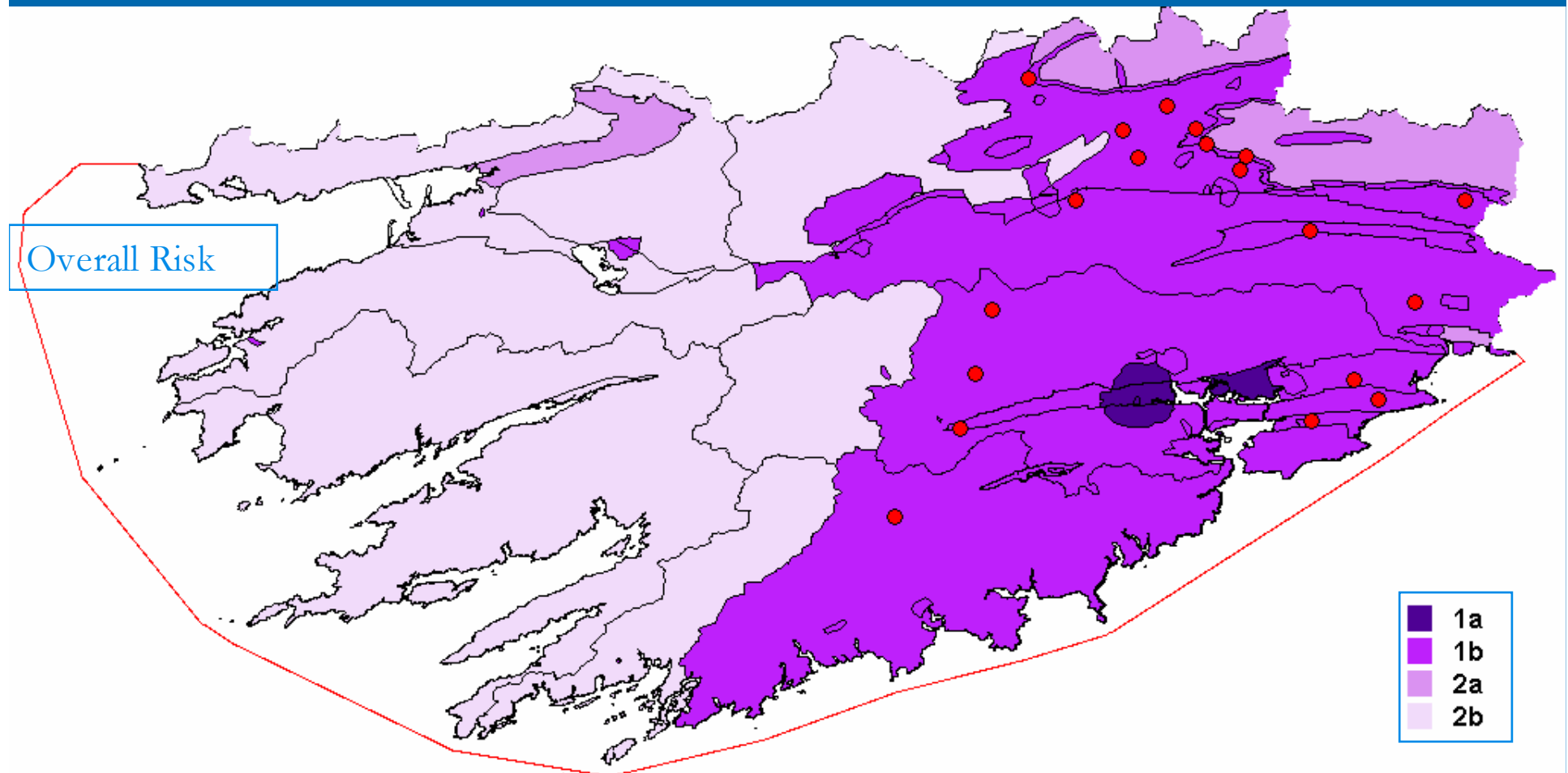


Further Characterisation At Risk Sites

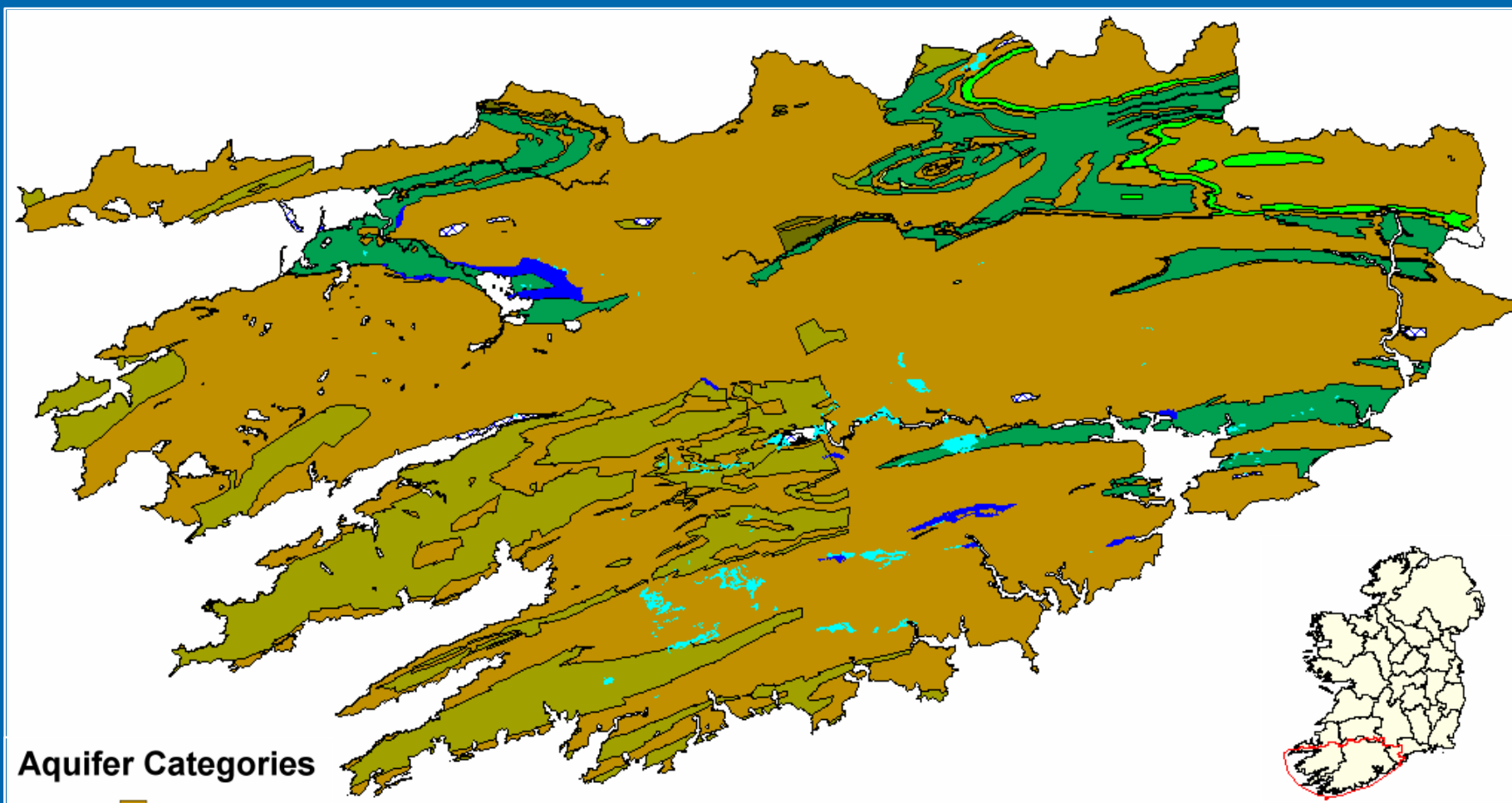
- It is envisaged that this Further Characterisation process would only be required on a very small number of sites nationally, or possibly where there is an accumulated impact from multiple quarries in a concentrated area.
- In areas where there is an intensification of quarry operation, where it is considered that there is a significant potential for the quarry(s) operation to have a significant impact at the groundwater body scale.



Groundwater Body Risk Assessment



SWRBD Aquifer

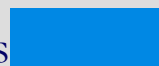


Aquifer Categories

- LI
- Lm
- PI
- Pu
- Rf
- Rkd

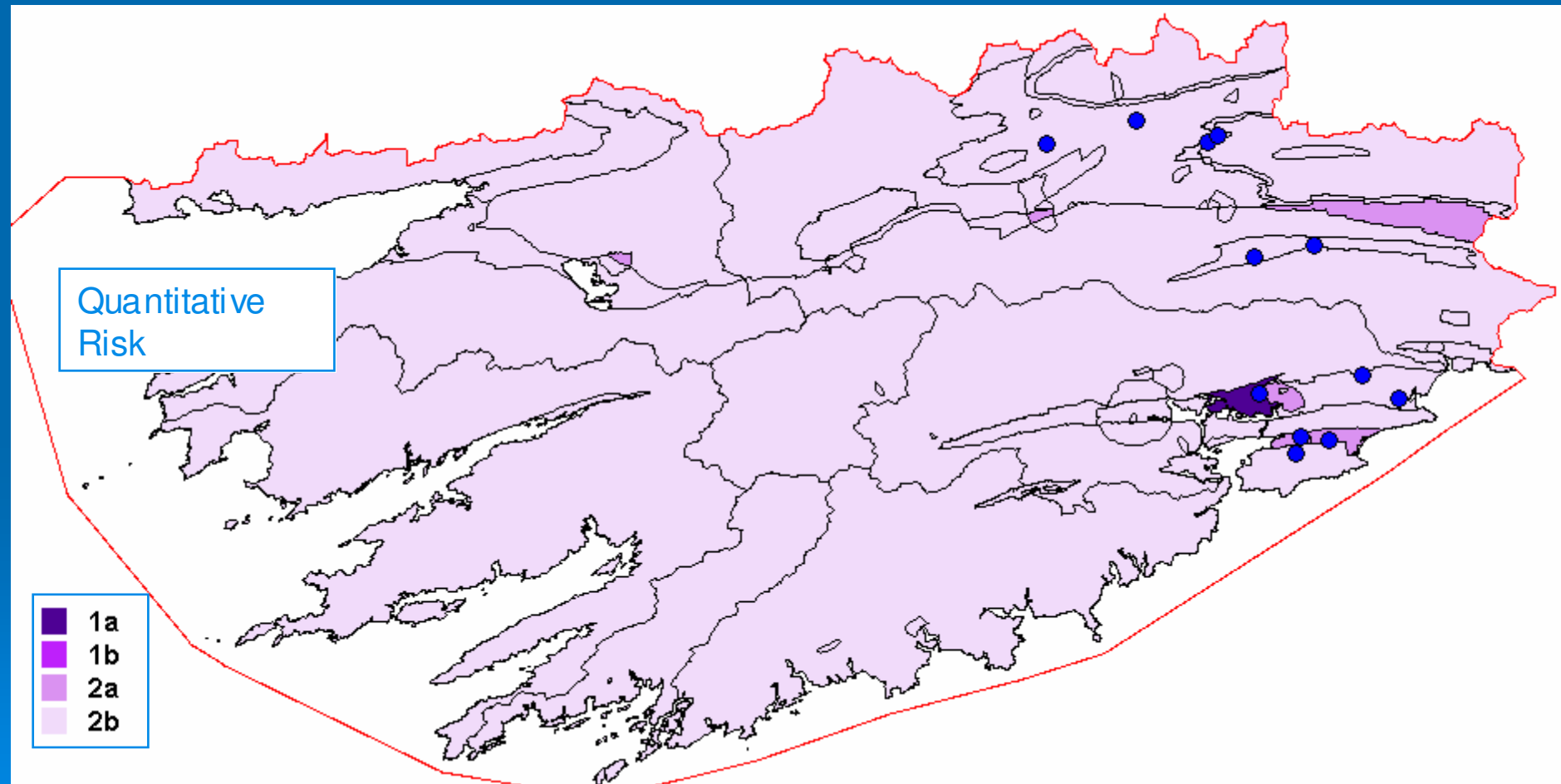


FIPS Gravels



GSI Gravels

Quantitative Status



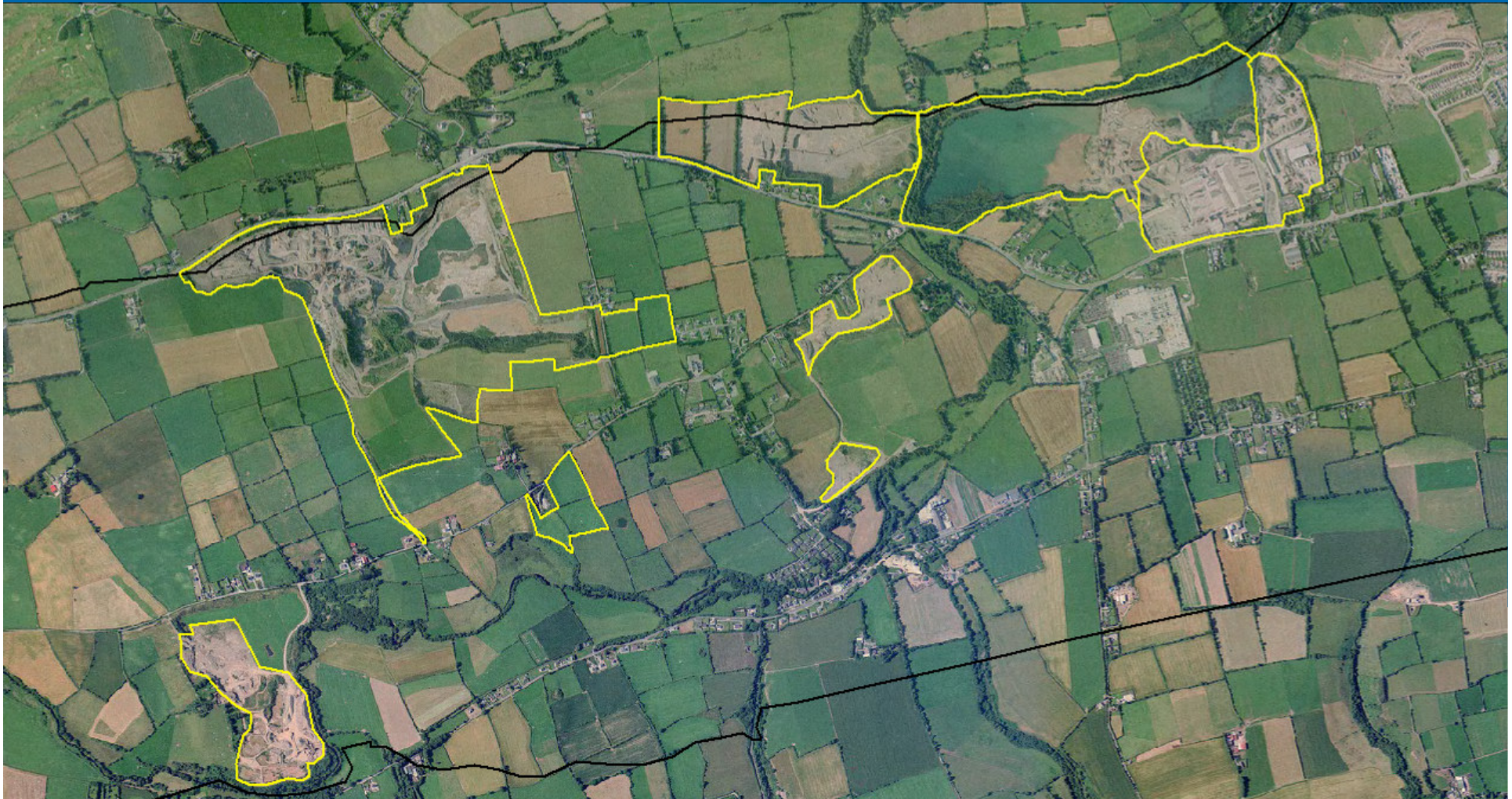
Density

➤ Carrigtwohill



Density

➤ Ballincollig/Ovens



Further Characterisation

- Consider quarry for further evaluation.
- Collect more detailed information(2008).
- Incorporate quarry into classification assessment of GWB.
- Inform Surface Water team of quarry and potential impacts on SWB
- Inform NPWS/EPA where potential impacts on GWDTEs
- Develop programme of measures to mitigate impacts



Q4

Quarries

What is your view about the suggested actions to control problems related to Quarries within the South Western district?

Are these actions appropriate?

Have we missed something important?