



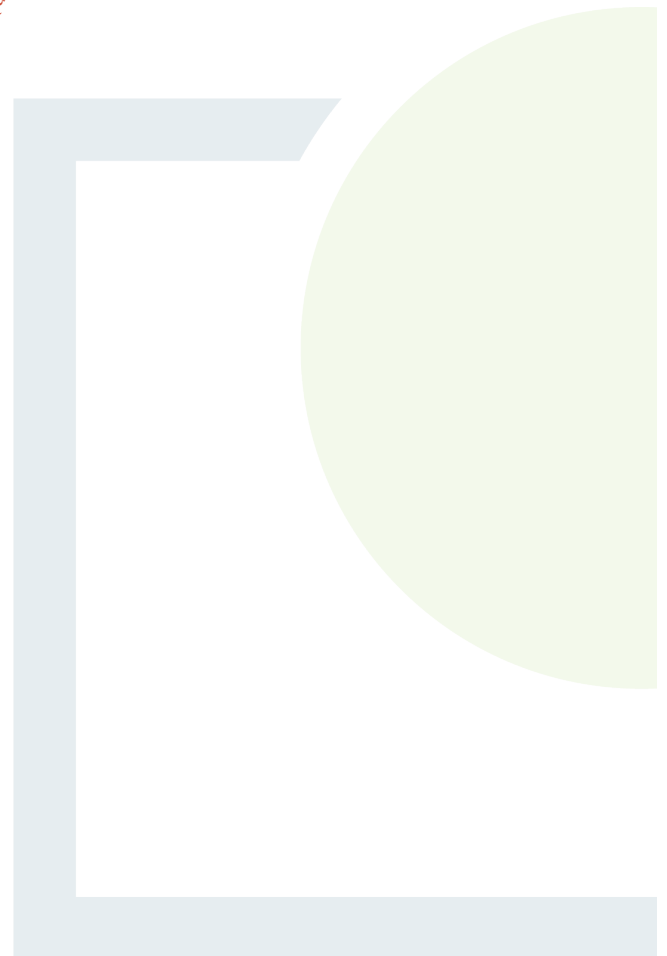
**FEHILY  
TIMONEY**

**CONSULTANTS IN ENGINEERING,  
ENVIRONMENTAL SCIENCE & PLANNING**

# APPENDIX 1

*Consent of copyright owner required for any other use.  
For inspection purposes only.*

Tier 1 Study





***Comhairle Contae Chiarraí***

---

***Kerry County Council***

**► Tier 1 Review Report – Listowel ◀**

**S22 - 02667**

November 2013

*Prepared by:*

*Environmental Services,  
Kerry County Council.*

*Seirbhísí Comhshaoil,  
Comhairle Contae Chiarraí.*

## ***1.0 Contents.***

---

| <b><i>Section</i></b> | <b><i>Description</i></b>                                       | <b><i>Page</i></b> |
|-----------------------|---|--------------------|
| <i>1.0</i>            | <i>Contents</i>   |                    |
| <i>2.0</i>            | <i>Introduction</i>   |                    |
| <i>3.0</i>            | <i>Risk Assessment Methodology – Tier 1</i>                     | <i>3</i>           |
| <i>3.1</i>            | <i>Introduction</i>   |                    |
| <i>3.2</i>            | <i>Risk Screening</i>   |                    |
| <i>3.3</i>            | <i>Desk Study (Tier 1 Risk Assessment)</i>                      |                    |
| <i>3.4</i>            | <i>Walk Over Survey</i>   |                    |
| <i>4.0</i>            | <i>Site Summary</i>   | <i>5</i>           |
| <i>4.1</i>            | <i>Location</i>   |                    |
| <i>4.2</i>            | <i>Site Layout and Extent of Waste</i>                          |                    |
| <i>4.3</i>            | <i>Available Aerial Photography</i>                             |                    |
| <i>4.4</i>            | <i>Designated Sites</i>   |                    |
| <i>4.5</i>            | <i>Water Resources</i>  |                    |
| <i>4.6</i>            | <i>Groundwater vulnerability and Aquifer</i>                    |                    |
| <i>4.7</i>            | <i>Surface Water</i>  |                    |
| <i>4.8</i>            | <i>Landfill Gas</i>   |                    |
| <i>5.0</i>            | <i>Conclusions</i>  | <i>14</i>          |
| <i>6.0</i>            | <i>Attachments</i>  |                    |
| <i>6.1</i>            | <i>Risk Screening, Information Sources and Walk Over Survey</i> |                    |
| <i>6.2</i>            | <i>Typical Photographs (2013)</i>                               |                    |
| <i>6.3</i>            | <i>Risk Assessment (2007)</i>                                   |                    |

For inspection purposes only.  
Consent of copyright owner required for any other use.

## **2.0 Introduction.**

---

In 2007 an initial Tier 1 Risk Assessment of all identified unregulated waste disposal sites was undertaken by the Environment Section of Kerry County Council.

The assessment was completed on foot of;

- the Ministerial Direction (WIR 04/05) reminding Local Authorities of their responsibilities under Section 22 of the Waste Management Acts, 1996 to 2005
- the Environmental Protection Agency's Code of Practice (CoP) - Environmental Risk Assessment for Unregulated Waste Disposal Sites.

The site was subsequently registered on the EPA Section 22 Register and given the reference code S22-02656. It was assigned a Moderate Risk (Class B) classification.

A copy of the assessment is included in Attachment No 1 for reference.

This report updates the initial assessment taking cognisance of the guidance within the CoP to review sites on an annual basis and in light of SI 524 of 2008, Waste Management (Certification of Historic Unlicensed Waste Disposal and Recovery Activity) Regulations 2008.

## **3.0 Risk Assessment Methodology – Tier 1**

---

### **3.1 Introduction**

Tier 1 of the Risk Assessment Methodology - Conceptual Site Model, Risk Screening and Prioritisation includes a preliminary investigation of the site and also comprises the development of a Conceptual Site Model using information obtained from the desk study and site inspection.

The Conceptual Site Model outlines the different Source-Pathway-Receptor (SPR) linkages and provides information for the risk-screening element. The information gleaned from the desk appraisal and walk over survey is summarised in the Attachment No. 6.1.

### **3.2 Risk Screening**

Risk screening represents an assessment of the SPR linkages in the conceptual model. The Conceptual Site Model identifies each of the elements of the linkage present for the site and the associated uncertainty.

The Conceptual Site Model will determine whether a site represents (or potentially represents) an unacceptable intrinsic risk to any receptor.

The risk that is being assessed is the intrinsic risk that the activity poses without any mitigation measures having been put in place. The actual risk posed to the environment will be reduced following remediation measures.

### **3.3 Desk Study (Tier 1 Risk Assessment)**

A desk study of the site has been undertaken. The information has been gathered from various sources including:

- Local authority sources including records and interview,
  - ground water vulnerability maps
  - surface water channels
  - aquifer data
  - sources of public water supplies
  - NHA, SAC, SPA register map
- Section 22 register (existing)

- Waste Plans
- Complaints database
- Permit register
- EPA waste reports (including NWD report)
- EPA IPPC facilities
- EPA waste licenced facilities
- An Foras Forbatha reports
- Aerial photography

### 3.4 Walk Over Survey.

A walk over survey has been conducted on the identified site.

The results have been recorded in Attachment 6.1 and the allocation of scores to the Risk Prioritisation exercise has been amended accordingly.

Typical photographs of the site are included in Attachment 6.2.

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

## **4.0 Site Summary.**

### **4.1 Location.**

The unregulated closed site is located in the townland of Ballygowlogue, Listowel.

The site is bounded on three sides by parkland and to the south by a municipal storage area.

The site is known as Listowel closed landfill.

### **Site Location**



### **4.2 Site Layout and extent of waste.**

The exact footprint of the waste as placed is as yet unknown pending further investigations.

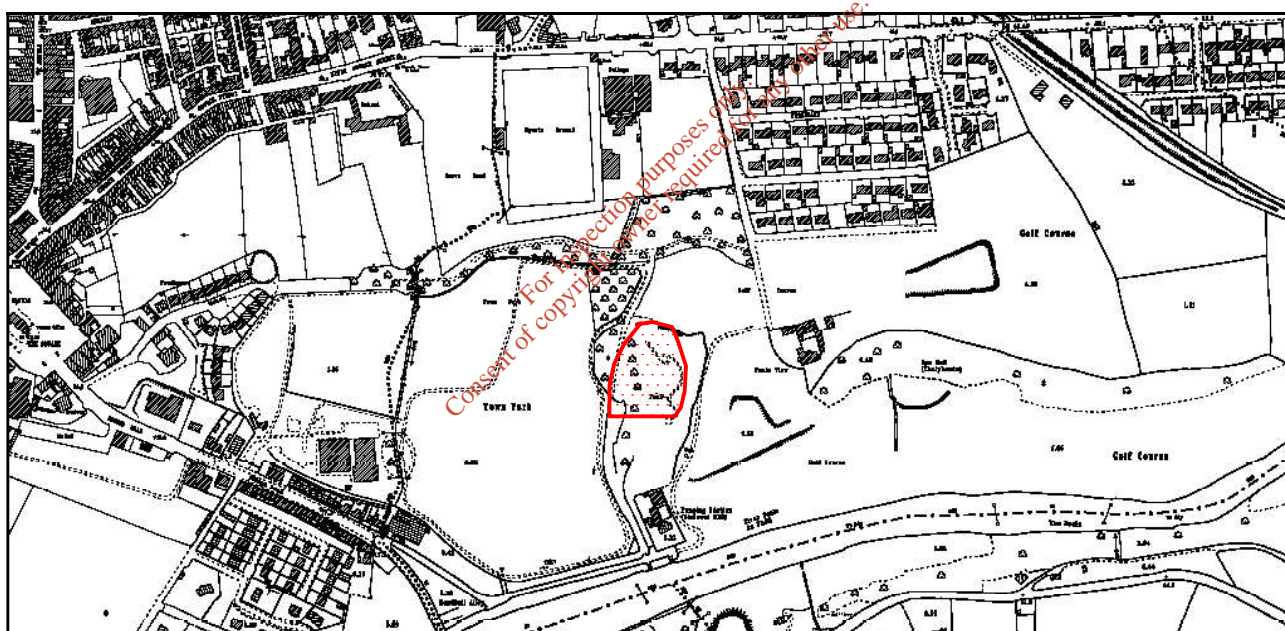
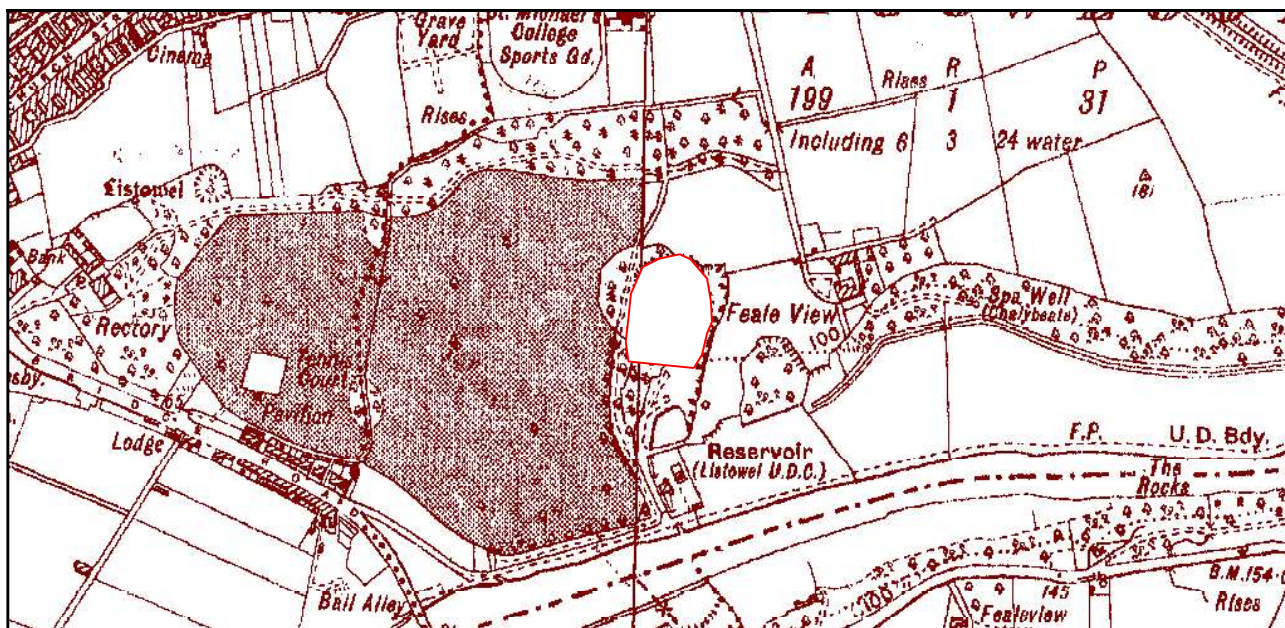
The extent is therefore taken as the full area of location where the activity took place which is approximately 0.75Ha. The An Foras Forbatha Report indicates a footprint 1.01 Ha (this figure is used in the risk assessment).

The grid reference to the approximate centre of the property holding is 99,700/133,476

The following layout map outlines the surrounding land use and geographic features.

The ownership of the site is currently undetermined.

*Site Layout*



Waste activities had ceased before the completion of the 1998 Waste Management Plan for Kerry.

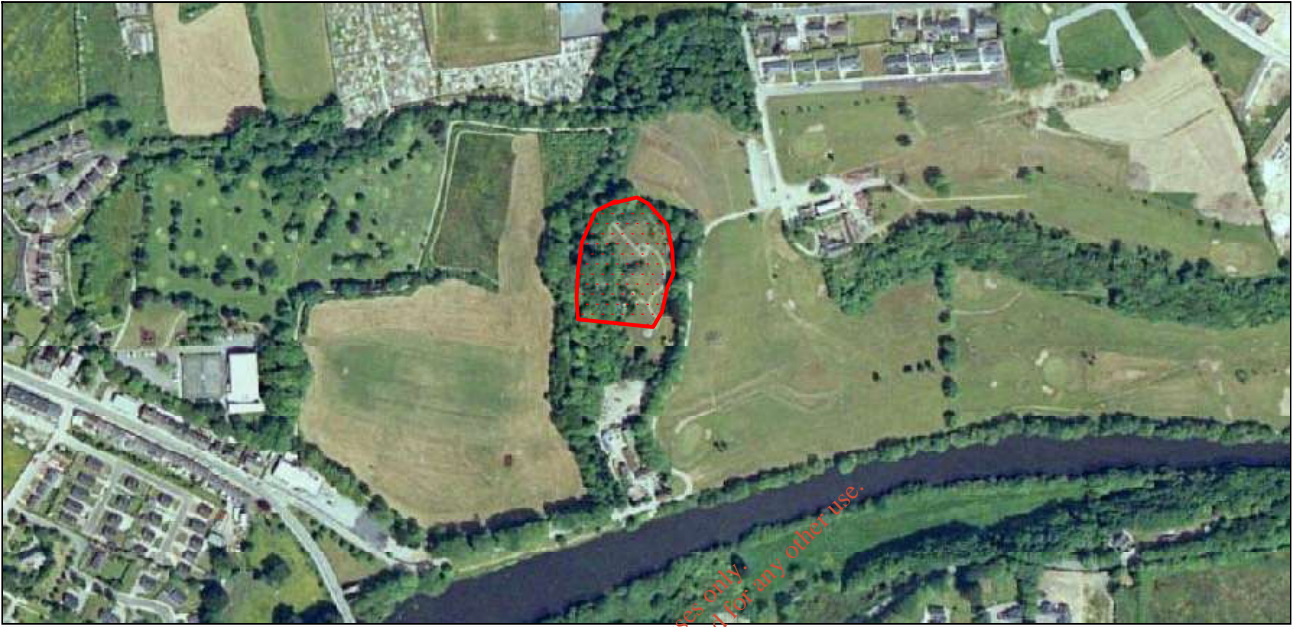
The An Foras Forbartha report on National Database on Waste indicates an annual intake of 1,850 tonnes and 2 years remaining capacity in 1986.

|   |                 |         |
|---|-----------------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 1A and 1B | Score 5 |
|---|-----------------|---------|

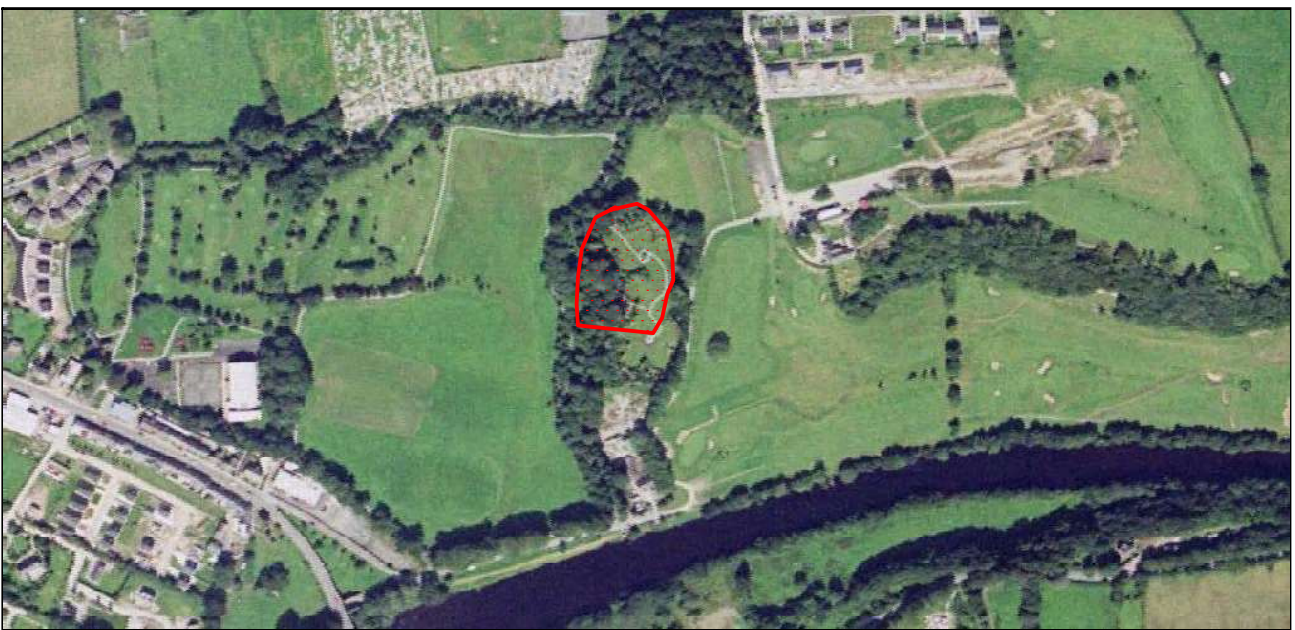
4.3 Available Aerial Photography

There are sets of available aerial photography from 1995 to 2004. These are presented in the following pages

Aerial Photography - 2004



Aerial Photography - 2000





Aerial Photography - 1995



Aerial Photography – Year unknown (source GSI).

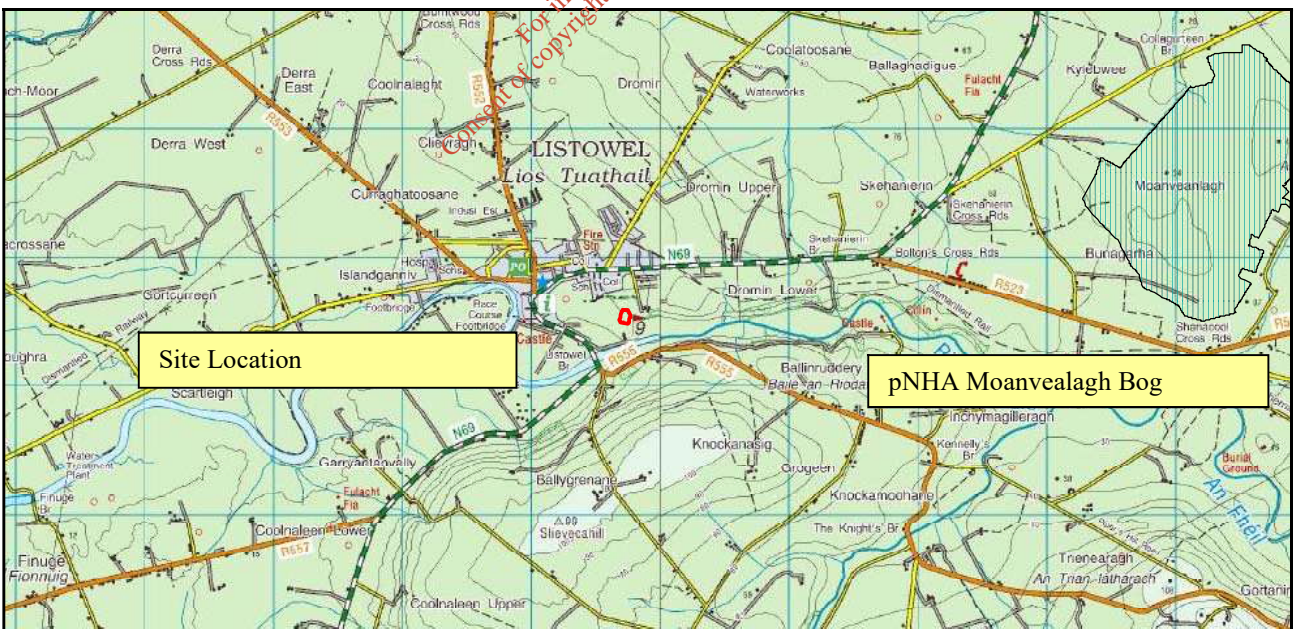
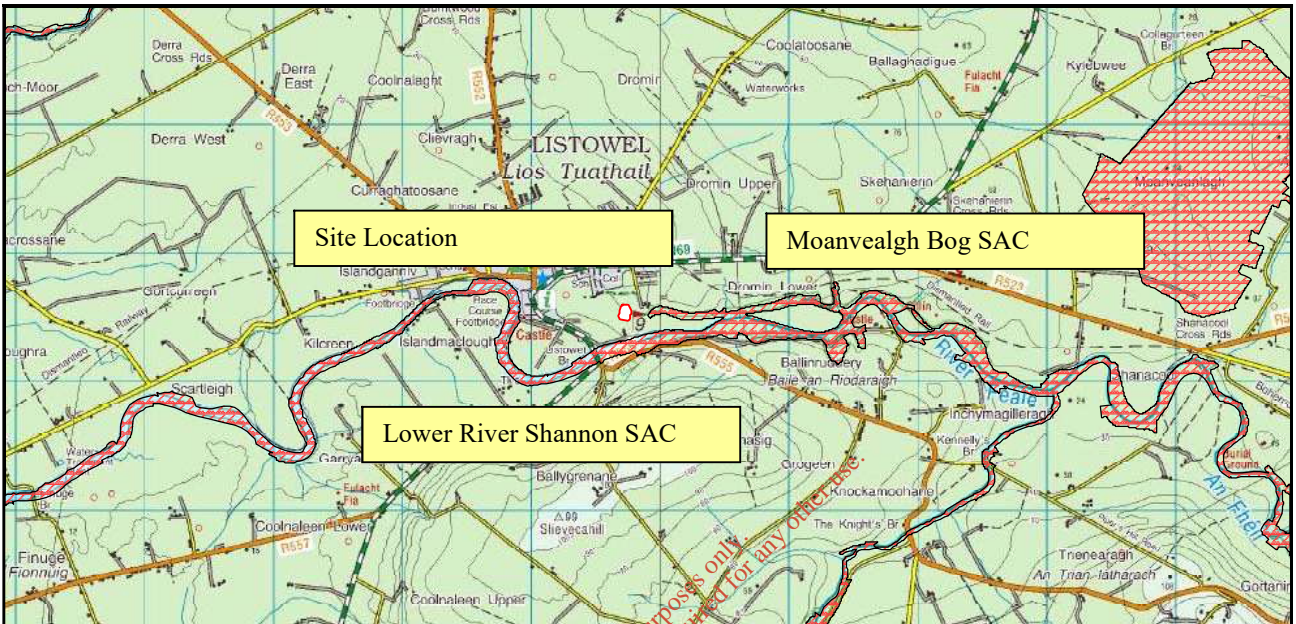


4.4 Designated Sites

The site is 142m from the Lower River Shannon SAC and 3.59km west of Moanvealagh Bog SAC which is also a pNHA.

The designation is current to September 2011.

Designated Sites



|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3B | Score 2 |
|---|----------|---------|

4.5 Water Resources

The site is located 3.59 km from the edge of Scartleigh surface water abstraction point and within 140m of the disused Listowel Town Source. As a precaution the Listowel Town Supply is taken as being in operation.

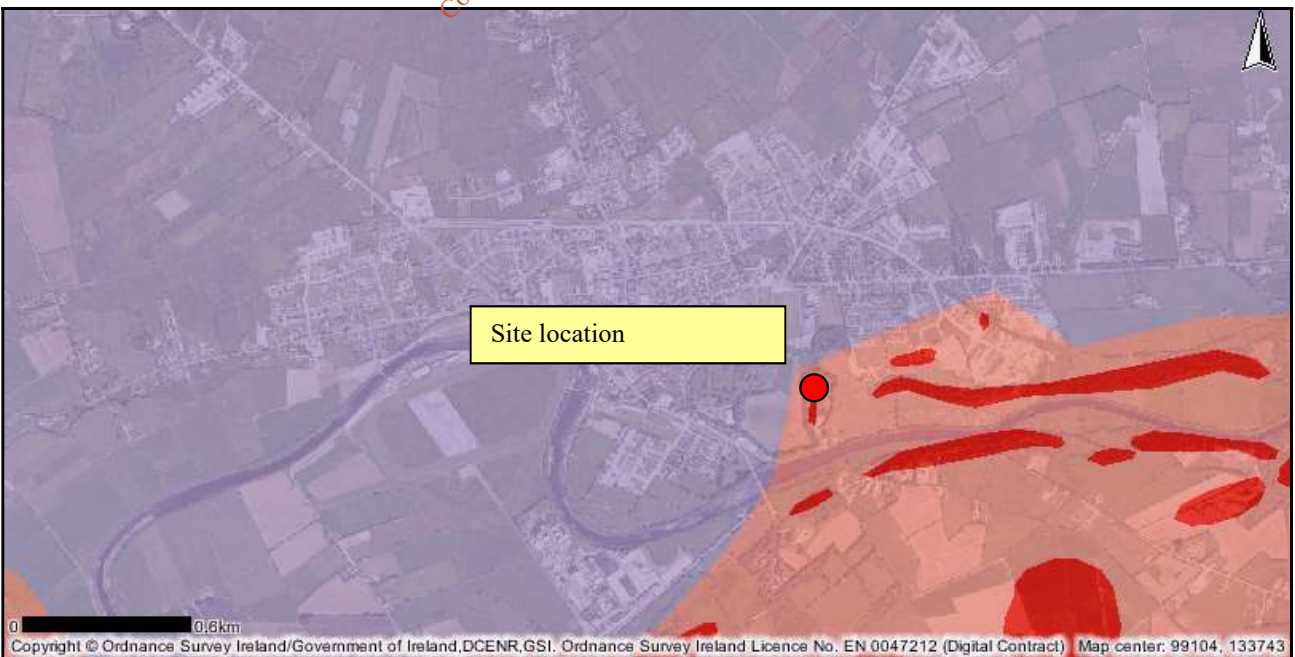


It should be noted that if a score of 3 was entered for 3D and all other scores remain the same the class of site would be calculated, based on the risk screening, as MODERATE in SPR 5 only

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3D | Score 7 |
|---|----------|---------|

5.6 Groundwater vulnerability and aquifer

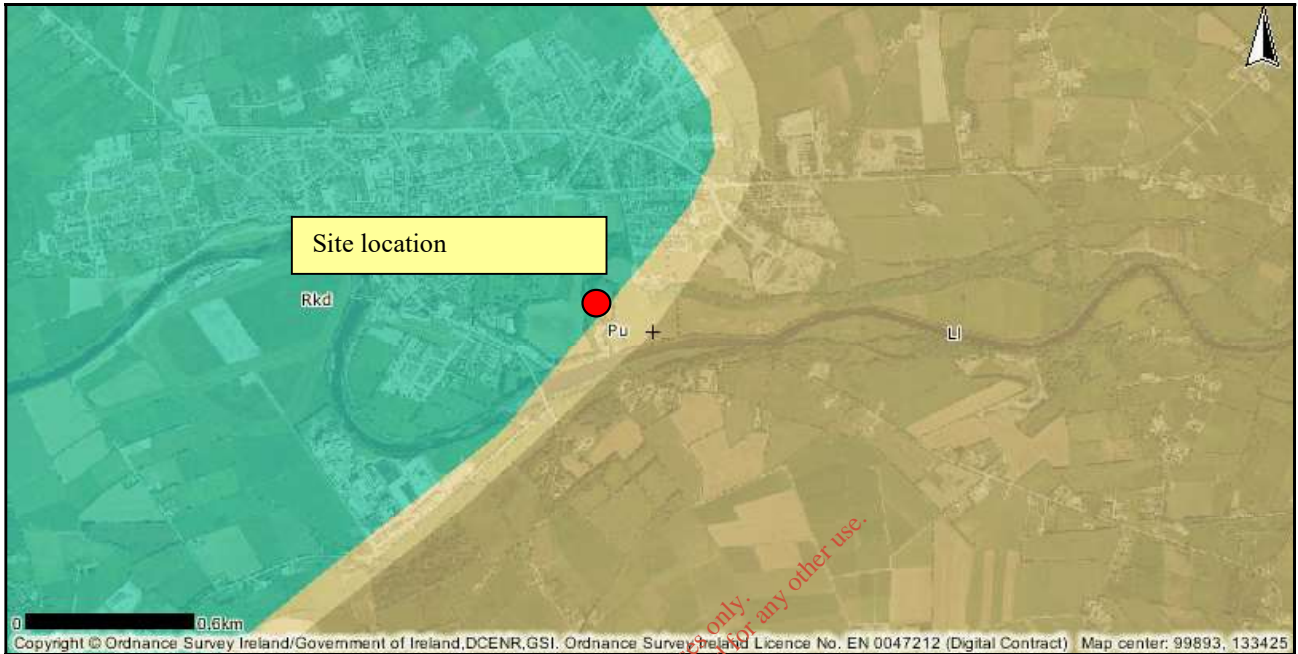
Groundwater Vulnerability



The site is located in an area that is high (HL).

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2A | Score 2 |
|---|----------|---------|

Aquifer Status

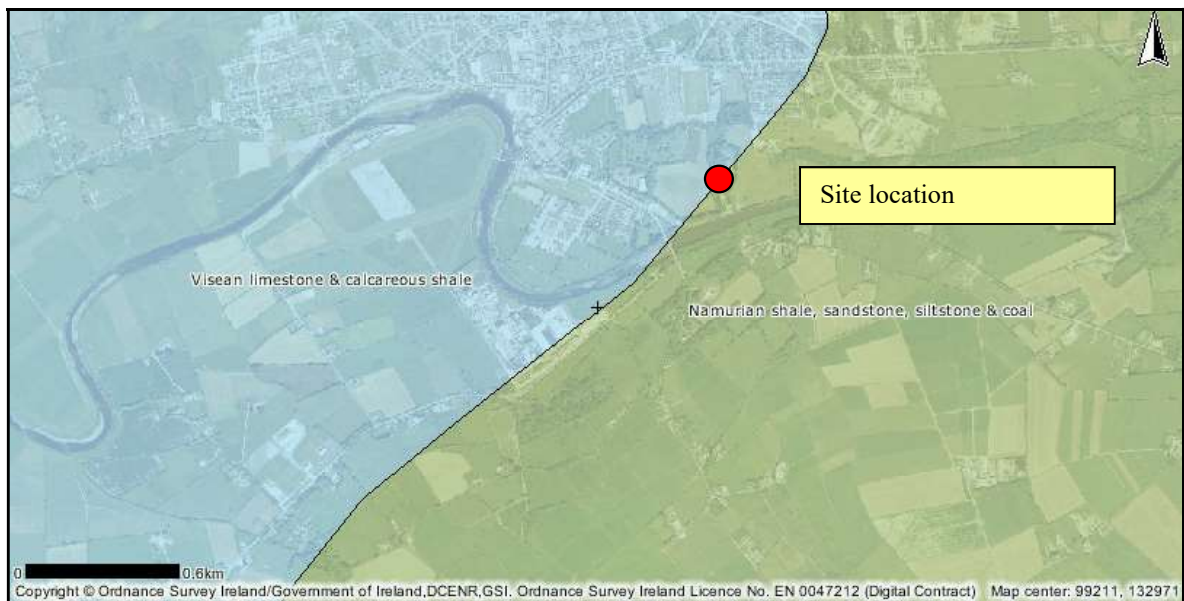


The Rkd status implied that the bedrock aquifer is regionally important – this is conservative designation.

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3C | Score 5 |
|---|----------|---------|

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2B | Score 5 |
|---|----------|---------|

Bedrock Geology



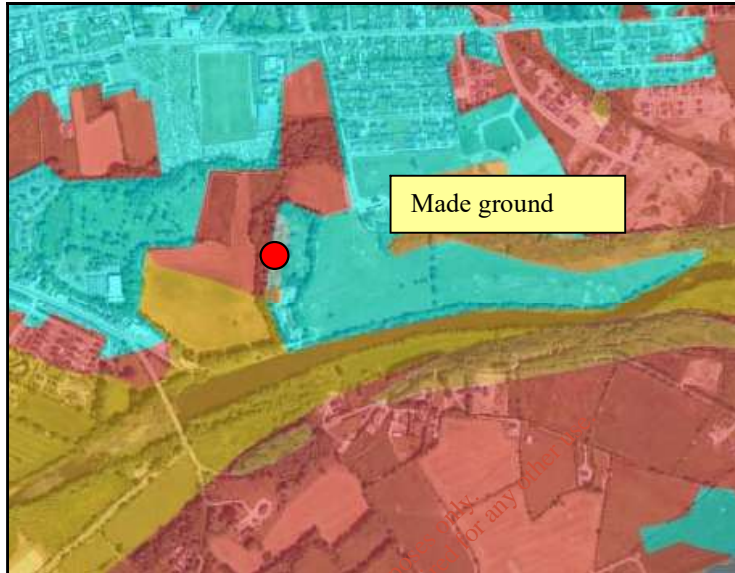
4.7 Surface water.

The River Feale is within 150m of the edge of the site. There is no direct drainage ditch.

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2C | Score 0 |
|---|----------|---------|

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3E | Score 2 |
|---|----------|---------|

Soil Types



Sub-soil Categorisation



4.8 Landfill Gas

Reference to the location map indicates that the closest domestic dwellings is approximately 200 m from the site.

There is no dwelling above the footprint of the waste.

|   |          |         |
|---|----------|---------|
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2D | Score 3 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 2E | Score 0 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3A | Score 2 |
| Based on the above this score is used in the Risk Assessment (see Appendix 1) | Table 3F | Score 1 |

For inspection purposes only.  
Consent of copyright owner required for any other use.

## 5.0 Conclusions.

### Summary of Risk Screening

The following tables set out the scores used in the risk screening exercise and the results of that exercise.

#### Summary of Risk Screening Scores

|          | <b>Table</b> | <b>Description</b>                                 | <b>Score</b> |
|----------|--------------|--|--------------|
| Source   | 1A           | Leachate; source/hazard scoring matrix             | 5.0          |
|          | 1B           | Landfill gas; source/hazard scoring matrix         | 5.0          |
| Pathway  | 2A           | Leachate migration; pathways (gw vulnerability)    | 2.0          |
|          | 2B           | Leachate migration; pathways (gw flow)             | 5.0          |
|          | 2C           | Leachate migration; pathways (sw pathway)          | 0.0          |
|          | 2D           | Landfill gas; lateral migration                    | 3.0          |
|          | 2E           | Landfill gas; upward migration                     | 0.0          |
| Receptor | 3A           | Leachate migration; receptors, human               | 2.0          |
|          | 3B           | Leachate migration; receptors, protected areas     | 2.0          |
|          | 3C           | Leachate migration; receptors, aquifers            | 5.0          |
|          | 3D           | Leachate migration; receptors, public water supply | 7.0          |
|          | 3E           | Leachate migration; receptors, surface water       | 2.0          |
|          | 3F           | Landfill gas; receptor, human presence             | 1.0          |

#### Summary of SPR Linkages.

|        |                          | <b>SPR score</b> | <b>Max</b> | <b>Normalised</b> | <b>Risk</b> |
|--------|--------------------------|------------------|------------|-------------------|-------------|
| SPR 1  | 1a * (2a + 2b + 2c) * 3e | 70               | 300        | 23%               | LOW         |
| SPR 2  | 1a * (2a + 2b + 2c) * 3b | 70               | 300        | 23%               | LOW         |
| SPR 3  | 1a * (2a + 2b) * 3a      | 70               | 240        | 29%               | LOW         |
| SPR 4  | 1a * (2a + 2b) * 3b      | 70               | 240        | 29%               | LOW         |
| SPR 5  | 1a * (2a + 2b) * 3c      | 175              | 400        | 44%               | MODERATE    |
| SPR 6  | 1a * (2a + 2b) * 3d      | 245              | 560        | 44%               | MODERATE    |
| SPR 7  | 1a * (2a + 2b) * 3e      | 70               | 240        | 29%               | LOW         |
| SPR 8  | 1a * 2c * 3e             | 0                | 60         | 0%                | LOW         |
| SPR 9  | 1a * 2c * 3b             | 0                | 60         | 0%                | LOW         |
| SPR 10 | 1b * 2d * 3f             | 15               | 150        | 10%               | LOW         |
| SPR 11 | 1b * 2e * 3f             | 0                | 250        | 0%                | LOW         |

Based on the above assessment this is a MODERATE RISK CLASS B Site

Based upon the desktop appraisal and walk over survey the calculated risk associated with this site is Moderate.

## 6.0 Attachments

- 6.1 Risk Screening, Information Sources and Walk Over Survey
- 6.2 Typical Photographs (walk over survey, 2013)
- 6.3 Risk Assessment 2007

For inspection purposes only.  
Consent of copyright owner required for any other use.



**Site Reference****S22 - 02667  
Listowel****1. Site Information check list**

---

|                                    |  |
|------------------------------------|--|
| Authorisation                      | None - registered on EPA S22 register as S22-02667   |
| Site Name                          | Listowel landfill                                    |
| Address of townland                | Ballygowlogue  |
| Address 1                          | Listowel   |
| County                             | Kerry  |
| LA functional area                 | Kerry County Council                                 |
| Location Map                       | Yes  |
| Easting                            | 99700  |
| Northing                           | 133476   |
| Source of information              | KCC Sources  |
| Owner/occupier                     | Undetermined   |
| Waste activity                     | Disposal   |
| Estimated tonnage of waste         | 20 year life (assumed) at 1,850 pa - < 40,000 tonnes |
| Hazardous waste present or unknown | Unknown  |
| Verificatin method                 |  |
| Known Impacts                      |  |
| Year opened                        |  |
| Year closed                        | 1988 (to be confirmed)                               |
| Status                             |  |
| Containment, total/partial/none    | Partial (capping)                                    |
| Containment, base liner            | None   |
| Containment, capping               | Partial clay capping                                 |
| LFG management                     | None   |
| Leachate collection                | None   |
| Vector map reference               |  |

For inspection purposes only.  
Consent of copyright owner required for any other use.

## 2. Sources of information check list

---

|                                     |                |
|-------------------------------------|----------------|
| Local authority sources             | Yes            |
| LA records and knowledge            | Yes            |
| Section 22 register (existing)      | Yes            |
| Waste Plans                         | Yes (no entry) |
| Special Waste Plans                 |                |
| Section 55 notices                  |                |
| Section 18 notices                  |                |
| Complaints database (LA, EPA)       |                |
| LA permit register                  |                |
| Toxic and Dangerous waste register  |                |
| Waste oils register                 |                |
| Derelict buildings register         |                |
| Planning files                      |                |
| LA quarries register                |                |
| EPA sources                         |                |
| EPA waste reports (incl NWD report) | Yes            |
| EPA IPPC facilities                 |                |
| EPA waste licenced faciiltes        |                |
| IPPC reports                        |                |
| EPA applicant files                 |                |
| Other sources                       |                |
| An Foras Forbatha reports           | Yes            |
| Trade directories                   |                |
| GSI quarries directory              |                |
| Aerial photography                  | Yes            |
| Remote sensing                      |                |
| Aerial survey                       |                |
| Newspaper advertisement             |                |

For inspection purposes only.  
Consent of copyright owner required for any other use.

| <b><i>Walkover Survey Checklist</i></b>                                | <b><i>Comment</i></b> |
|--|-----------------------|
| Site   | Listowel              |
| What is current landuse  | Parkland              |
| What are the neighbouring land uses                                    | Amenity               |
| What is the size of the site   | Approx 1 Ha           |
| What is the topography   | Undulating            |
| Are there potential receptors (if yes - details)                       | Yes                   |
| Houses   | Approx 200m           |
| Surface water features (if yes distance and direction of flow)         | Yes - River Feale     |
| Any wetland or protected area  | Yes                   |
| Public water supplies  | Yes - now closed      |
| Private wells  | No                    |
| Services   | None visible          |
| Other buildings  | Storage yard          |
| Other  |                       |
| Are there any potential sources of contamination (if yes give details) |                       |
| Surface waste (if yes what type)                                       | None                  |
| Surface ponding of leachate  | None                  |

Consent of copyright owner required for any other use.  
For inspection purposes only.

|  |  |
|--|--|
| Leachate seepage   | None                                   |
| Landfill gas odours  | None                                   |
| Are there any outfalls to surface water  | None                                   |
| Are there any signs of impact on the environment (if yes take photographic evidence) |  |
| Vegetation die off, bare ground  | None                                   |
| Leachate seepage   | None                                   |
| Odours   | None                                   |
| Litter   | None                                   |
| Gas bubbling through water   | None                                   |
| Signs of settlement, subsidence water logged areas                                   | None                                   |
| Drainage or hydraulic issues   | None                                   |
| Downstream water quality appears poorer than upstream water quality                  |  |
| Are there any indications of remedial measures (provide details)                     | Area has been filled in and landscaped |
| Capping  | Yes - sub soil                         |
| Landfill gas collection  | No                                     |
| Leachate collection  | None                                   |
| Describe fences and security features (if any)                                       | None, part of parkland                 |
| Any other relevant information   |  |
| Site name and reference;   | Listowel, S22 - 02667                  |
| Date of inspection;  | October 25th 2013                      |
| Walk over survey by;   | Conor Culloo                           |

For inspection purposes only.  
Consent of copyright owner required for any other use.

**SPR Linkages - Risk Screening**

| Table | Description  | Score |        | SPR                   | Max | Normalised | Risk |          |
|-------|--|-------|--------|-----------------------|-----|------------|------|----------|
| 1A    | Leachate; source/hazard scoring matrix             | 5.0   | SPR 1  | 1a * (2a + 2b + 2c) * | 70  | 300        | 23%  | LOW      |
| 1B    | Landfill gas; source/hazard scoring matrix         | 5.0   | SPR 2  | 1a * (2a + 2b + 2c) * | 70  | 300        | 23%  | LOW      |
|       |  |       | SPR 3  | 1a * (2a + 2b) * 3a   | 70  | 240        | 29%  | LOW      |
| 2A    | Leachate migration; pathways (gw vulnerability)    | 2.0   | SPR 4  | 1a * (2a + 2b) * 3b   | 70  | 240        | 29%  | LOW      |
| 2B    | Leachate migration; pathways (gw flow)             | 5.0   | SPR 5  | 1a * (2a + 2b) * 3c   | 175 | 400        | 44%  | MODERATE |
| 2C    | Leachate migration; pathways (sw pathway)          | 0.0   | SPR 6  | 1a * (2a + 2b) * 3d   | 245 | 560        | 44%  | MODERATE |
| 2D    | Landfill gas; lateral migration                    | 3.0   | SPR 7  | 1a * (2a + 2b) * 3e   | 70  | 240        | 29%  | LOW      |
| 2E    | Landfill gas; upward migration                     | 0.0   | SPR 8  | 1a * 2c * 3e          | 0   | 60         | 0%   | LOW      |
|       |  |       | SPR 9  | 1a * 2c * 3b          | 0   | 60         | 0%   | LOW      |
| 3A    | Leachate migration; receptors, human               | 2.0   | SPR 10 | 1b * 2d * 3f          | 15  | 150        | 10%  | LOW      |
| 3B    | Leachate migration; receptors, protected areas     | 2.0   | SPR 11 | 1b * 2e * 3f          | 0   | 250        | 0%   | LOW      |
| 3C    | Leachate migration; receptors, aquifers            | 5.0   |        |                       |     |            |      |          |
| 3D    | Leachate migration; receptors, public water supply | 7.0   |        |                       |     |            |      |          |
| 3E    | Leachate migration; receptors, surface water       | 2.0   |        |                       |     |            |      |          |
| 3F    | Landfill gas; receptor, human presence             | 1.0   |        |                       |     |            |      |          |

For inspection purposes only. Consent of copyright owner required. www.amec.com

For inspection purposes only.  
Consent of copyright owner required for any other use.











For inspection purposes only.  
Consent of copyright owner required for any other use.

For inspection purposes only.  
Consent of copyright owner required for any other use.

2007 Data

---

*For inspection purposes only.  
Consent of copyright owner required for any other use.*

## LISTOWEL

### Environmental risk assessment for unregulated waste disposal sites

|       | <u>SPR linkage score</u> | <u>Maximum linkage score</u> | <u>Normalised score %</u> |
|-------|--------------------------|------------------------------|---------------------------|
| SPR1  | 84                       | 300                          | 28.00                     |
| SPR2  | 84                       | 300                          | 28.00                     |
| SPR3  | 56                       | 240                          | 23.33                     |
| SPR4  | 56                       | 240                          | 23.33                     |
| SPR5  | 28                       | 400                          | 7.00                      |
| SPR6  | 0                        | 560                          | 0.00                      |
| SPR7  | 56                       | 240                          | 23.33                     |
| SPR8  | 28                       | 60                           | 46.67                     |
| SPR9  | 28                       | 60                           | 46.67                     |
| SPR10 | 21                       | 150                          | 14.00                     |
| SPR11 | 0                        | 250                          | 0.00                      |

| <u>Table no.</u>                                   | <u>Score</u> | <u>Rationale</u>                               |
|--|--------------|--|
| Table 1a, Leachate hazard                          | 7            | Municipal waste >1 ha & <5 ha                  |
| Table 1b, Landfill gas hazard                      | 7            | Municipal waste >1 ha & <5 ha                  |
| Table 2a, Leachate migration, GW vulnerability     | 3            | Extreme  |
| Table 2b, Leachate migration, GW flow regime       | 1            | Poorly productive                              |
| Table 2c, Leachate migration SW drainage           | 2            | direct contact with SW body                    |
| Table 2d, Landfill gas Lateral migration           | 3            | made ground                                    |
| Table 2e, Landfill gas Vertical Migration          | 0            | No structures present above waste body         |
| Table 3a, Leachate migration Human presence        | 2            | dwelling house > 50m and <250m from waste body |
| Table 3b, Leachate migration Protected areas       | 2            | SAC/River Feale 110m from waste body           |
| Table 3c, Leachate migration Aquifer category      | 1            | Poor aquifer as per GSI website                |
| Table 3d, Leachate migration Public water supplies | 0            | Public water source >1km no karst aquifer      |
| Table 3e, Leachate migration Surface water bodies  | 2            | SW body 110m from waste body                   |
| Table 3f, Landfill gas Human presence              | 1            | Human presence >150m & <250m                   |

### Conclusion

Medium risk (class B) site as 2 SPR linkages are greater than 40%, less than 70%.

APPENDIX 2: Walkover Survey Checklist

Listowel

99, 727

133, 538

| Walkover Survey Checklist   |         |  |
|---|---------|--|
| Information   | Checked | Comment (include distances from site boundary) |
| 1. What is current Land Use?  | ✓       | "Garden of Europe" Town Park                   |
| 2. What are the neighbouring Land Uses?   | ✓       | Town park, Golf Course<br>+ Town Council Yard. |
| 3. What is the size of the site?  | ✓       | 1.01HA   |
| 4. What is the topography?  | ✓       | landscaped garden                              |
| 5. Are there potential receptors (if yes, give details)?  | ✓       |  |
| Houses  | ✓       | ≈ 150m away                                    |
| Surface water features (if yes, distance and direction of flow)   | ✓       | 110m away R. Feale                             |
| Any wetland or protected areas  | ✓       | 110m away SAC (R. Feale)                       |
| Public Water Supplies   | ✓       |  |
| Private Wells   | ✓       |  |
| Services  | ✓       | Playing fields + Golf Course                   |
| Other buildings   | ✓       | Town Council Building ≈ 50m away               |
| Other   | ✓       | Golf Club House ≈ 100m away                    |
| 6. Are there any potential sources of contamination (if yes, give details)?   |         | Possibly                                       |
| Surface waste (if yes, what type?)  | ✓       | None observed, no samples taken                |
| Surface ponding of leachate   | ✓       | None observed                                  |
| Leachate seepage  | ✓       | " "  |
| Landfill gas odours   | ✓       | " "  |
| 7. Are there any outfalls to surface water? (If yes, are there discharges and what is the nature of the discharge?) | ✓       | None observed                                  |
| 8. Are there any signs of impact on the environment? (If yes, take photographic evidence)                           | ✓       | No   |
| Vegetation die off, bare ground   | ✓       | No   |
| Leachate seepages   | ✓       | No   |
| Odours  | ✓       | No   |
| Litter  | ✓       | No   |
| Gas bubbling through water  | ✓       | No   |
| Signs of settlement,  | ✓       | No   |

For inspection purposes only.  
Consent of copyright owner required for any other use.

CODE OF PRACTICE  
Environmental Risk Assessment for Unregulated Waste Disposal Sites

|  |   |   |
|--|---|---|
| subsidence, water logged areas                                       | ✓ | No  |
| Drainage or hydraulic issues   | ✓ | No  |
| Downstream water quality appears poorer than upstream water quality  | ✓ | W determined                                      |
| 9. Are there any indications of remedial measures? (Provide details) | ✓ |   |
| Capping  | ✓ | Yes   |
| Landfill gas collection  | ✓ | No  |
| Leachate collection  | ✓ | No  |
| Monitoring wells   | ✓ | No  |
| 10. Describe fences and security features (if any)                   | ✓ | None, public access as site is part of Town park. |
| Any other relevant information?                                      |   | Site well capped.                                 |
|  |   |   |
|  |   |   |
|  |   |   |
|  |   |   |

For inspection purposes only.  
Consent of copyright owner required for any other use.

# Listowel

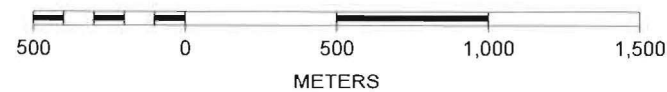




# Listowel



SCALE 1 : 25,000





29/06/2007

For inspection purposes only.  
Consent of copyright owner required for any other use



29/06/2007