

Eve O'Sullivan

Subject: Castlerea COA - H0394-01
Attachments: Appendix 8 SPR calculator_tier3.pdf

From: Niall Kennedy <NKennedy@roscommoncoco.ie>
Sent: 18 August 2020 16:39
To: Ewa Babiarczyk <E.Babiarczyk@epa.ie>
Subject: Castlerea COA - H0394-01

Dear Ewa,
Please find attached correct Appendix 8 that forms part of the above application.
Regards

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Castlereia Closed Landfill

Table 1a LEACHATE: SOURCE/HAZARD SCORING MATRIX			
WASTE TYPE	Waste FOOTPRINT (ha)		
	≤ 1ha	> 1 ≤ 5 ha	> 5ha
C&D	0.5	1	1.5
Municipal	5	7	10
Industrial	5	7	10
Pre 1977 sites	1	2	3

1a =	7
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Table 1b LANDFILL GAS: SOURCE/HAZARD SCORING MATRIX			
WASTE TYPE	Waste FOOTPRINT (ha)		
	≤ 1ha	> 1 ≤ 5 ha	> 5ha
C&D	0.5	0.75	1
Municipal	5	7	10
Industrial	3	5	7
Pre 1977 sites	0.5	0.75	1

1b =	7
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Table 2a : LEACHATE MIGRATION: PATHWAYS	
GROUNDWATER VULNERABILITY (Vertical Pathway)	Points
Extreme Vulnerability	3
High Vulnerability	2
Moderate Vulnerability	1
Low Vulnerability	0.5
High - Low Vulnerability (use where vulnerability not on GIS)	2

2a =	1
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Table 2b : LEACHATE MIGRATION: PATHWAYS	
GROUNDWATER FLOW REGIME (Horizontal Pathway)	Points
Karstified Groundwater Bodies (Rk)	5
Productive Fissured Bedrock Groundwater Bodies (Rf & Lm)	3
Gravel Groundwater Bodies (Rg and Lg)	2
Poorly Productive Bedrock Groundwater Bodies (LI, PI, Pu)	1

2b =	5
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Table 2c : LEACHATE MIGRATION: PATHWAYS	
	Points
SURFACE WATER DRAINAGE (Surface water pathway) associated with the waste body and adjacent surface water	2
If no direct connection	0

2c =	2
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Table 2d : LANDFILL GAS: PATHWAY	
	Points
LANDFILL GAS LATERAL MIGRATION POTENTIAL	
Sand and Gravel, Made ground, urban, karst	3
Bedrock	2
All other Tills (including limestone, sandstone etc - moderate)	1.5
All Namurian or Irish Sea Tills (low permability)	1
Clay, Alluvium, Peat	1

2d =	1
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Table 2e : LANDFILL GAS: PATHWAY (assuming receptor located above source)

	Points
LANDFILL GAS LATERAL MIGRATION POTENTIAL	
Sand and Gravel, Made ground, urban, karst	5
Bedrock	3
All other Tills (including limestone, sandstone etc - moderate)	2
All Namurian or Irish Sea Tills (low permability)	1
Clay, Alluvium, Peat	1

2e =	0
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Table 3a : LEACHAGE MIGRATION: RECEPTORS	
	Points
HUMAN PRESENCE (presence of a house indicates potential private wells)	
On or within 50m of the waste body	3
Greater than 50m but less than 250m	2
Greater than 250m but less than 1km from waste body	1
Greater than 1km of the waste body	0

3a =	2
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Table 3b : LEACHAGE MIGRATION: RECEPTORS PROTECTED AREAS (SWDTE or GWDTE)	Points
Within 50m of waste body	3
Greater than 50m but less than 250m of the waste body	2
Greater than 250m but less than 1km from waste body	1
Greater than 1km of the waste body	0
Undesignated sites within 50m of waste body	1
Undesignated sites greater than 50m but less than 250m	0.5
Undesignated sites greater than 250m of the waste body	0
3b =	0

Table 3c : LEACHAGE MIGRATION: RECEPTORS	
AQUIFER CATEGORY (resource potential)	Points
Regionally Important Aquifers (Rk, Rf, Rg)	5
Locally Important Aquifers (Ll, Lm, Lg)	3
Poor Aquifers (Pl, Pu)	1

3c =	5
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Table 3d : LEACHAGE MIGRATION: RECEPTORS	
PUBLIC WATER SUPPLIES (Other than private wells)	Points
Within 100m of site boundary	7
for GW supplies	5
(SO) for GW supplies	3
Greater than 1km (karst aquifer)	3
Greater than 1km (no karst aquifer)	0

3d =	3
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Table 3e : LEACHAGE MIGRATION: RECEPTORS	
SURFACE WATER BODIES	Points
Within 50m of site boundary	3
Greater than 50m but less than 250m	2
Greater than 250m but less than 1km	1
Greater than 1km	0

3e =	3
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Table 3f : LEACHAGE MIGRATION: RECEPTORS	
HUMAN PRESENCE	Points
On site or within 50m of site boundary	5
Greater than 50m but less than 150m	3
Greater than 150m but less than 250m	1
Greater than 250m	0.5

3f =	1
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Note: The table below represents the Tier 1 risk rating for this site. SPR 1 to 9 represent the leachate risk scores. SPR 10 & 11 represent Landfill Gas risks. The migration pathways are colour coded as follows:

Groundwater & Surface Water	Groundwater only	Surface water only	Lateral & Vertical
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Calculator	SPR Values	Maximum Score	Linkages	Normalised Score
SPR 1 =	168	300	Leachate => surface water	56%
SPR 2 =	0	300	Leachate => SWDTE	0%
SPR 3 =	84	240	Leachate => human presence	35%
SPR 4 =	0	240	Leachate => GWDTE	0%
SPR 5 =	210	400	Leachate => Aquifer	53%
SPR 6 =	126	560	Leachate => Surface Water	23%
SPR 7 =	126	240	Leachate => SWDTE	53%
SPR 8 =	42	60	Leachate => Surface Water	70%
SPR 9 =	0	60	Leachate => SWDTE	0%
SPR 10 =	7	150	Landfill Gas => Human Presence	5%
SPR 11 =	0	250	Landfill Gas => Human Presence	0%

Risk Classification	Range of Risk Scores
Highest Risk (Class A)	Greater than or equal to 70% for any individual SPR linkage
Moderate Risk (Class B)	Between 40-70% for any individual SPR linkage
Lowest Risk (Class C)	Less than or equal to 40% for any individual SPR linkage

TIER 3 RATING	Highest Risk
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