

## Eve O'Sullivan

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**Subject:** H0030-01  
**Attachments:** Figure 2.3 Rev A.pdf; Figure 2.7 Aquifer Classification Rev A.pdf; Figure 3.1 Sample Location Rev A\_.pdf; RE: H0030-01 Copy of Email with Section 22 Reg; March 2 Response.pdf

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**From:** Cathal Brodie <[cbrodie@clarecoco.ie](mailto:cbrodie@clarecoco.ie)>  
**Sent:** Tuesday 2 March 2021 14:45  
**To:** Licensing Staff <[licensing@epa.ie](mailto:licensing@epa.ie)>  
**Subject:** H0030-01

Good afternoon,  
Attached is response to letter dated 5<sup>th</sup> February last from Ewa Babiarczyk.

Regards

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SÉANADH: Is eolas rúnda atá sa teachtaireacht seo agus d'fhéadfadh sé bheith faoi phribhléid dhlíthiúil. Is don seolaí amháin atá sí ceaptha. Is neamhúdaraithe í an rochtain ar an teachtaireacht seo ag duine ar bith eile. Tá toirmeasc ar aon nochtadh, cóipeáil nó leithdháileadh den teachtaireacht, nó aon ghníomh nó neamhghníomh a ghlacann tusa agus tú ag brath uirthi, mura tusa an faighteoir a bhí ceaptha di. Téigh i dteagmháil leis an seoltóir láithreach má fuair tú an teachtaireacht seo trí earráid, le do thoil. Go raibh maith agat.



COMHAIRLE | CLARE  
CONTAE AN CHLÁIR | COUNTY COUNCIL

Ms. Ewa Babiarczyk.

Inspector,

Environmental Licencing Programme

Office of Environmental Sustainability

2<sup>nd</sup> March 2021

**Reg. No. HOO30-01**

RE: Reply to letter dated 5th February 2021.

Dear Ms. Babiarczyk,

As you raised a number of queries, I will respond to each one individually but firstly I want to outline the process in which Clare County Council approached the risk assessment of the Historic Landfills in County Clare. In 2009 and 2010, the EPA and Department of Environment (DoE) ran a pilot project to work with a number of Councils to progress the risk assessment of closed historic landfills. The process was to follow the risk methodology laid out in the Code of Practice for Environmental Risk Assessment of Unregulated Waste Disposal Sites, EPA, 2007 and to use the Source-Pathway-Receptor model in identifying and eliminating risks. Clare County Council followed this methodology and identified only one significant SPR linkage i.e. SPR 8, Leachate via Surface water Drainage/Runoff to Surface water Body, for Kilrush Landfill. Using the COP, all other risks were eliminated as being either negligible or non-existent. Our methodology and progress was reviewed at a number of workshops and was approved by the DoE, EPA and their consultant at the time Mr. Darragh Musgrave, Viridus Limited (WYG at the time). I am outlining the history of the process as I feel that a number of the issues you now raise have been dealt with and eliminated as not being significant and not being a risk during the Tier 1 and Tier 2 risk assessment process. Namely the risks from Landfill gas, from leachate, and to groundwater. If the Code of Practice is to be followed there is no necessity for further investigation of these SPR linkages. From the EPA Mr Patrick Chan was on the steering group for the pilot project. Mr. Chan would be able to expand on the process if you wished to consult with him.

**An Roinn Chomhshaoil**  
**An Stiúirthóireacht Forbairt Fhisiceach**

Áras Contae an Chláir, Bóthar Nua, Inis, Co. an Chláir, V95 DXP2

**Environment Department**  
**Physical Development Directorate**

Áras Contae an Chláir, New Road, Ennis, Co. Clare, V95 DXP2

1. The Section 22 Register Number is S22-02498. This was forwarded to the EPA Licensing Office by email on 5/10/2020. (Emails attached). Please note that the Section 22 Register has been removed from the EPA website and consequently the registration numbers are not readily available.
2. There is no significant difference in the site boundaries in the two figures. For the land use figure the site boundary outline is merely to show where the site is relative to the surrounding lands. For clarity an updated Rev A version of the Figure is included with this submission.
3. There is no real discrepancy here. The start date of the landfill is in or around 1981 or 1982. The exact date of the opening is unclear from archived records. The best estimate, erring on the side of caution is 1981. According to our records, the landfill closed on 12/12/1992. The variation in dates is not significant as it is only a matter of months.
4. Again there is no real discrepancy here. The municipal waste may have been burned off in the early years and also much of the organic waste would have disintegrated over time. Also, many Local Authorities had open days for farm and commercial waste especially prior to closing the sites. This waste would have survived as it was less biodegradable and would have dominated the trial hole profiles. The waste over the period, from the scant records available, appears to have been generally municipal. Assigning percentages is a best guestimate.
5. The Tiered Risk assessment clearly shows that Groundwater is not at risk from the landfill leachate. As such, and as was agreed with the EPA in 2009/2010 that there was no requirement to monitor it. This conclusion was approved by Mr. Darragh Musgrave who was working for the EPA and DoE at the time and was communicated to Clare County Council.
6. The Tiered Risk Assessment clearly shows that the only risk from Kilrush Historic Landfill is to the Surface water network from drainage or runoff from the landfill. If there is an impact on the surface water network, the extensive surface water monitoring that Clare Council have undertaken, and propose to undertake would detect it. Again, this was the advice received by Clare County Council when it took part in the EPA lead pilot program in 2009 and 2010. As illustrated in the Conceptual Site Model and Risk Assessment there is no significant pathway for leachate migration to the water table. The only potential pathway is via overland flow to the surface water receptor i.e. and this has been comprehensively monitored as outlined in the Risk Assessment Report
7. In relation to landfill gas, the Risk Assessment clearly shows that there is no risk what so ever from either vertical or horizontal migration of landfill gas. The feedback from Darragh Musgrave and the EPA at the time was that Clare County Council should not have even attempted the impact bars as it was not required. The Tier 2 assessment excluded any investigation of landfill gas as it was not considered necessary and this was agreed and advised to us at the workshops at the time. Requesting it now, in the light of the fact that it was ruled out at all stages of the Risk Assessment process contradicts the advice given at the time by the DoE and EPA. It is not consistent with the

approach outlined in the Code of Practice. Furthermore and most significantly, there are no receptors at risk from landfill gas.

8. Figure 3.1 has been updated as requested and is attached as Figure 3.1 Rev A.

9. Laboratory codes for sampling points.

Laboratory Code	Sampling Point
20-628	SW100
20-629	SW101
20-630	SW102
20-631	SW103
20-632	SW104
20-633	SW105
20-634	SW106
20-739	SW100
20-740	SW101
20-741	SW102
20-742	SW103
20-743	SW104
20-744	SW105
20-745	SW106
20-746	Point 4
20-747	Point 5
20-748	Point 6

10. It is not possible to infer a groundwater flow direction from water levels in trial pits. In this particular site it is reasonable to assume that the shallow groundwater will be influenced by topography and surface water drainage and hence the flow is expected to be to the north and northwest. Indicative groundwater flow direction is shown on Figure 2.7 Rev A.

11. The compacted clay berm is proposed around the site perimeter as shown on Figure 5.1.

12. Retained closed landfill returning to wild habitat.
13. The Non-Technical Summary is included as **Attachment 1**

Yours sincerely,



Chartered Environmental Scientist.

Clare County Council

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## Amended Figures

See attached PDF's

### Attachment 1

#### Non- Technical Summary

#### Non- Technical Summary

##### 1.0 Site Location

The landfill is located on a 2.6 Ha site in the townland of Dysert, Kilrush. The site is owned by Clare County Council. The lands are fenced off and currently idle. Lands to the south, east and west are agricultural. The site is bordered to the immediate north by marshy land and to the south and east by road.

##### 2.0 History of Site.

The landfill opened in either 1987 or 1981-1982 (exact opening date is unclear from the archived records) It closed in 1992. The waste type accepted was mainly municipal waste but because of the rural location of the site, it is likely that some agricultural waste was also deposited here. The annual tonnage of waste deposited was estimated at 5570 tonnes.

##### 3.0 Hydrology and Ecology of the site.

A drain runs in a northerly direction along the western site boundary. The drain continues to flow north and joins a larger stream which flows in a westerly direction before eventually discharging to the Wood River. There is a second drain to the south of the site, but there is no surface water connection between the landfill and this stream.

There are no protected areas in the immediate vicinity of the site.

The vegetation on the site varies from rough grass, nettles, briars, gorse bushes and some isolated trees.

##### 4.0 Risk Category of Site

In accordance with the EPA's published Code of Practice (COP); Environmental Risk Assessment for Unregulated Waste Disposal Sites (2007), the risk category assigned to the former Kilrush Landfill is Class B – Moderate Risk. The Source-Pathway-Receptor which puts the site into this category is for Leachate via Surface water Drainage/Runoff to Surface water Body (SPR 8).

##### 5.0 Actual and Potential impacts.

The potential receptors are the Moyadda and Kilcarol Streams and further downstream the Wood River and the Kilrush Creek are the closest water body receptors. The results of surface water quality

monitoring indicates that the leachate is not impacting on surface water quality downstream of the landfill.

## 6.0 Proposed Remediation Measures and Timescale.

Given the age of the site i.e. closed for 29 years, the weak nature of the leachate and the lack of landfill gas, the landfill is essentially inert. The EPA Landfill Restoration and Aftercare Manual recommends that for inert landfills with low amenity use a cap of a minimum of 500mm should be placed on top but that no top soil layer is required. It is proposed to install such a cap on this landfill and also place a clay berm around the waste body.

To ensure that land gas can continue to vent after capping, four gas vent wells are proposed to be installed at the same time.

To establish the effectiveness of the remedial works, monitoring of surface water upstream and downstream of the landfill on an annual basis is proposed.

The timeline for installation of the remedial works will be dependent on funding for same being available. However, it is proposed to have all the remedial works completed within five years of a grant of Certificate of Authorisation if funding is forthcoming.

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**Title:**

Figure 2.3 Surrounding Landuse

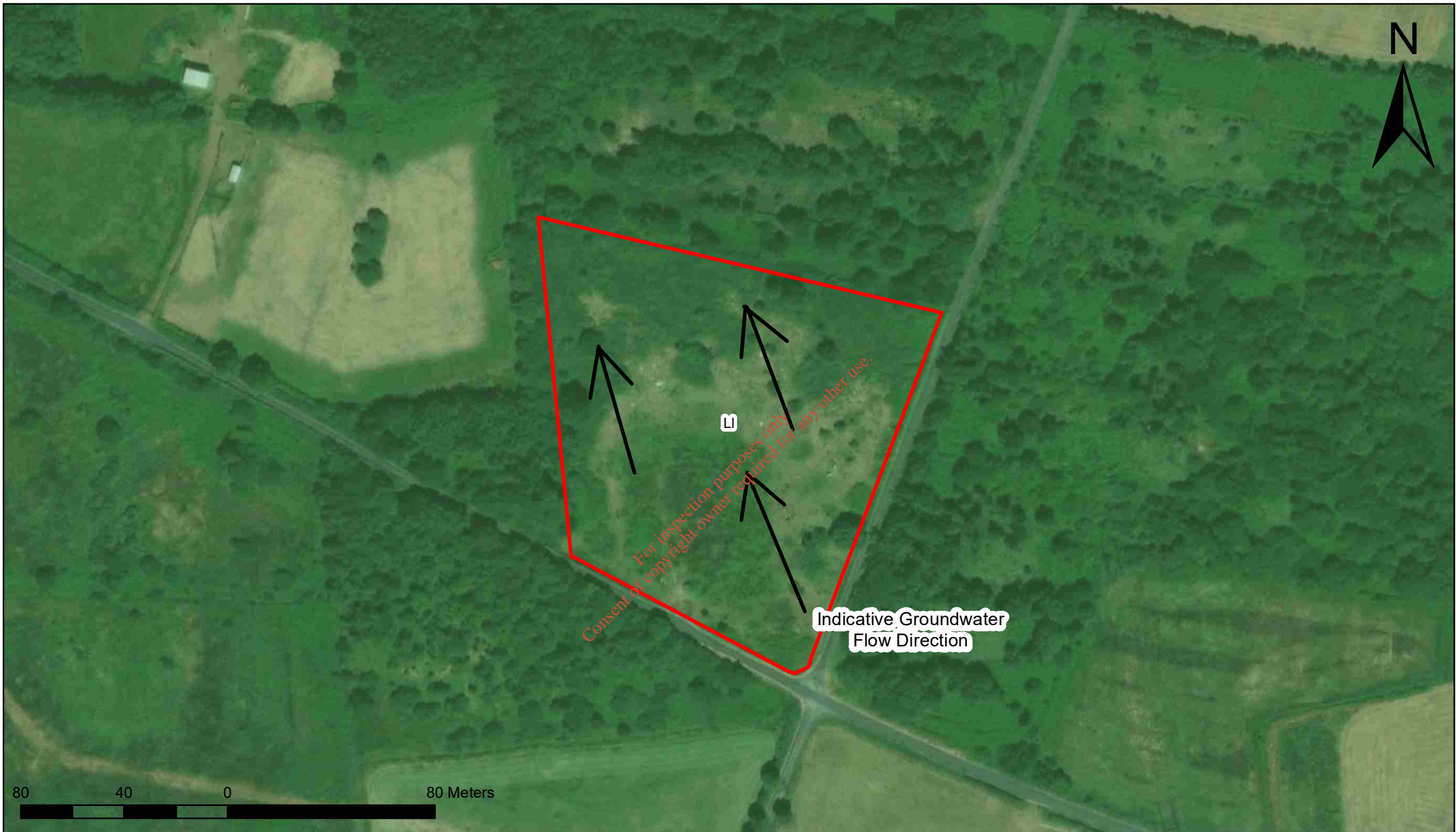
**Legend**


 -Site Layout

**Client:**

Clare County Council





 <p>O'Callaghan Moran &amp; Associates, Unit 15 Melbourne Business Park, Model Farm Road, Cork. Tel. (021) 4345366 email: info@ocallaghanmoran.com</p>	<p>CLIENT</p> <p>Clare County Council</p>	<p>Details:</p> <ul style="list-style-type: none"> <li><span style="color: red;">—</span> Site Layout</li> <li><span style="background-color: #c8e6c9; border: 1px solid black; display: inline-block; width: 15px; height: 10px; vertical-align: middle;"></span> LI - Locally Important Aquifer. Moderately Productive only in Local Zones</li> </ul>
	<p>TITLE</p> <p>Aquifer Classification</p>	

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