



TECHNICAL MEMORANDUM

DATE:	08 November 2023	CONFIDENTIALITY:	Public
SUBJECT:	41000009.L13 Request for Additional Information SEW Cells 25 & 26		
PROJECT:	Knockharley Cells 25 & 26 SEW	AUTHOR:	Darren Crowe
CHECKED:	Peter Corrigan	APPROVED:	Peter Corrigan

RESPONSE REQUEST FOR ADDITIONAL INFORMATION, REFERENCE R.I. RI019316, RELATING TO THE SEW PROPOSAL CELLS 25 AND 26, SUBMISSION NO. LR078625 IN ACCORDANCE WITH LICENSE W0165-04 AT KNOCKHARLEY LANDFILL

WSP Ireland Consulting Limited (WSP) has been requested by Knockharley Landfill Limited (KLL) to provide a submission in relation to items of additional information requested by the Environmental Protection Agency (EPA), reference RI019316 for the Specified Engineering Works for the proposed future landfill Cells 25 and 26 Development, submission No. LR078625, at Knockharley Landfill, Co. Meath.

Note:

For clarity, the original filling sequence and cell layout identified waste cells up to Cell 28. Where the remaining waste cell footprint is shown as Cells 25, 26, 27 and 28. Cells that would be smaller in size than the typical cells constructed to date. The new filling sequence and cells layout dictates the remaining cells will be Cells 25 and 26, where cells 25 & 27 and 26 & 28 are merged.

ITEM 1:

“Condition 3.30.2: Regarding the proposal to (1) alter the fill sequence and to (2) mix non-stabilised, stabilised and inert waste types within the remaining cells, provide robust justification for these and detail why it is no longer feasible to follow the fill plan/sequence as per drawing LW14-821-01-P0050-10 of the EIAR and to separate leachate as per condition 3.36.2/3.36.3. State how the licensee proposes to address the issues raised in sections 2.4.3 & 7.5.2.4 of the EIAR which original fill sequence sought to address.

Response: (1) alter filling sequence;

The EIAR and planning application were submitted when the KLL facility was in full operation with waste placement underway in Cells 15 and 16 and the future filling sequence for the landfill within the EIAR was based on filling from Cell 17 and 18 onwards. However, the duration for planning approval was significant and the landfill has remained in operation under its previous planning and waste licence conditions in the interim period.

All previous cells from 17 to 24 filled to-date within the facility have been deposited with a mixed waste type, where both **Non-stabilised Waste** and **Stabilised and Inert Waste** have been placed together within any given available cell, and leachate has been extracted to the existing leachate lagoon.

During this period, KLL was left with no alternative but to continue to operate the facility using current procedures whereby mixed waste (Non-Stabilised Waste and Stabilised and Inert Waste types) was deposited within the respective Cells 17 to 24; failure to do so would have required KLL to close the facility while awaiting planning approval.



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For this reason, it is not feasible for KLL to follow the filling sequence as per drawing LW14-821-01-P0050-10 and as described in Condition 3.30.2 and subsequently comply with leachate separation management requirements listed in Conditions 3.36.2 and 3.36.3 as KLL cannot alter the waste that has already been deposited.

Also, the EIAR allows for alternative filling sequence in section 2.4.3.4 Filling Sequence where;

“Subject to waste intake rates and operational considerations, placement location/filling sequence may change and waste types within the permitted cells may overlap at the interfaces between respective waste faces.”

Response: (2) mix non-stabilised, stabilised and inert waste types within the remaining cells;

The proposed remaining footprint for the waste cells only allows for the construction of a further two cells, Cells 25 and 26.

It is proposed that KLL continue to operate the facility using current procedures whereby the placement of mixed waste (Non-Stabilised Waste and Stabilised and Inert Waste types) will be undertaken in the proposed remaining landfill cells and the mixed leachate will continue to be extracted to the existing leachate lagoon.

Current waste intake volumes at the Knockharley Facility based on 2022, Q1 2023 and Q2 2023 figures show that the rate of Non-stabilised Waste and Stabilised and Inert Waste is 8 – 20 % **Non-stabilised Waste** and 80 – 92 % **Stabilised and Inert Waste** respectably. This figure for non-stabilised is likely to reduce further in the future as more recover and treatment methods evolve. Subsequently, for KLL to comply with the separation of waste streams at this stage of life of the facility, it would require the construction of significant infrastructure to accommodate a low volume waste intake. The requirement would be for a small, isolated cell within the footprint of Cells 25 & 26 to accept non-stabilised waste.

This small cell would be located to the north of facility and in close proximity to the northern receptors, where the EIAR states *“Placement of stabilised and inert waste in cells 27 and 28 and moving in a southerly direction is designed to maximise the distance between residential receptors on the northern boundary and Face 2.”* This small cell for non-stabilised waste would be required to be exposed for long periods of time in order for it to be filled. This would lead to a knock affect of odour, nuisance and an increase in rainfall exposure and an ensuing increase in leachate before capping or intermediate capping could be facilitated. Thus, the construction of a small, isolated cell for non-stabilised waste located on the northern boundary would leave the Knockharley Facility exposed to the northern receptors for odour and nuisance complaints.

Also, for reference the daily cover or intermediate cover for the small, isolated cell for non-stabilised waste would more than likely require a Stabilised and Inert Waste or clay barrier to be placed over the non-stabilised waste thus allowing for cross contamination between waste streams.



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Response: EIAR Sections 2.4.3

The EIAR states that;

“The primary objectives of separate working faces are to:

- *Separate the different leachates by composition to facilitate targeted and appropriate treatments.*
- *Facilitate management of different settlement characteristics associated with respective wastes.*
- *Facilitate more effective management of odour emissions from, and oxygen ingress into, the anaerobic waste body.*
- *Facilitates alternate engineering design solutions to manage landfill gas e.g. vertical wells under negative extraction in anaerobic cells and passive venting from horizontal wells in the “stabilised aerobic waste body.*
- *Mitigates the risk of collision from vehicle movements.”*

The items identified above are still the priority, the exception been that the Non-stabilised Waste and Stabilised and Inert Waste leachate will not be separated as identified under the proposed filling plan. All other items are accounted for under the Knockharley Facility operation procedures or will be accounted for by the required conditions under KLL’s new EPA licence.

The filling sequence for **Stabilised and Inert Waste** identified in section 2.4.3.4 of the EIAR shall set the basis, that KLL continue to operate the facility using current procedures whereby the placement of mixed waste (Non-Stabilised Waste and Stabilised and Inert Waste types) will be undertaken in the proposed remaining landfill cells and the mixed leachate will continue to be extracted to the existing leachate lagoon.

KLL will continue to reduce leachate volumes where possible as described, reduce gas potential to the northern receptors, provide a screening berm with as much Stabilised and Inert Waste types (currently 90%), separate the Non-Stabilised Waste and Stabilised and Inert Waste types from the IBA waste stream. The potential use of the “piggy back” cell may be required in future and is still achievable. The majority of the fill placed within the footprint of the “piggy back” cell will be Stabilised and Inert Waste, it may take longer for settlement to finalize but the placement of LLDPE separation and the use of the “piggy back” cell to store IBA in future is still attainable. Current waste streams are less susceptible to settlement that is typically associated with historical MSW.

The proposed increase in leachate to the existing leachate lagoon through the proposed and the current procedures is still maintainable. For clarity, the proposed/current procedures involve mixed waste (Non-Stabilised Waste and Stabilised and Inert Waste types) leachate being directed to the existing leachate lagoon. KLL though has the option of increased tanker removal, further leachate re-circulation within capped cells and further capping of cells which all either reduce or accommodate the increase in leachate.



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Response: EIAR Sections 7.5.2.4

Section 7.5.2.4 of the EIAR refers to the odour management and mitigation measures to be used during the operational activities at the facility. A new Odour Management Plan has been developed to account for the new licence conditions for the facility and is with the EPA for approval. It's proposed that the revised Odour Management Plan and the ongoing revision of the Knockharley Facility operation procedures will facilitate all items highlighted in the EIAR under section 7.5.2.4.

The one mitigation item identified in the EIAR at the design stage that will require monitoring is outlined in the paragraph which states *“Modification of the filling schedule so stabilised and inert waste and non-biodegradable fractions of MSW will commence filling from cells 27/28 and move south. Waste with a potential to generate landfill gas will not be landfilled north of cells 21/22, to reduce exposure to receptors to the north thus mitigation by design.”*

Under current and proposed operating procedures, KLL will continue to operate the facility whereby the placement of mixed waste (Non-Stabilised Waste and Stabilised and Inert Waste types) will be undertaken in the proposed remaining landfill cells and the mixed leachate will continue to be extracted to the existing leachate lagoon. The likelihood that the ratio of the mixed waste will be limited at approx. 8 – 20 % **Non-stabilised Waste** and 80 – 92 % **Stabilised and Inert Waste** respectably, should help limit the potential for odours and nuisance. All other mitigation measures and procedures identified in the EIAR shall be implemented.

We hope the above information has addressed the queries sufficiently.