FCC Waste Services (UK) Limited
Greengairs Landfill site

Application for substantial variation
PPC/W/0020041

CONTENTS

1 NON TECHNICAL SUMMARY OF DETERMINATION

FCC has applied to SEPA to substantially vary the conditions of Permit reference PPC/W/0020041 in relation to Greengairs Landfill. The proposed variations are summarised below -

- An increase in permitted leachate levels in specific cells in the site landfill;
- Remove the obligation to install additional groundwater monitoring boreholes;
- Revision of monitoring schedules for and ground water and leachate, including a revision of groundwater trigger levels;
- Increase the maximum quantity of Incinerator Bottom Ash (IBA) which can be stored on the dedicated IBA storage pad on site from 30,000 tonnes to 46,000 tonnes
- The application also outlines an amendment to the overall site landform due to a proposed downturn in landfilling activities over the coming years, not least as a result of the impending ban on the landfilling of municipal waste. The footprint of proposed landfilling activities will therefore be smaller than previously thought. Whilst this amendment does not in itself require a change to any specific permit condition, a revised stability risk assessment has been submitted for review.
- Finally, the application outlines a change to infrastructure around the site offices, but again this will not require a change to any specific permit condition.

Glossary of terms

BAT - Best Available Techniques
CO - Coordinating Officer
ELV - Emission Limit Value
IBA - Incinerator Bottom Ash

2 EXTERNAL CONSULTATION AND SEPA'S RESPONSE

***Is Public Consultation Required* - yes**

Advertisements Check:	***Date***	***Compliance with advertising requirements***
Edinburgh Gazette	15/12/20	Yes
Airdrie and Coatbridge Advertiser	16/12/20	Yes

Officer checking advert: MS

No. of responses received: None

Summary of responses and how they were taken into account during the determination:

Not applicable

Summary of responses withheld from the public register on request and how they were taken into account during the determination:

Not applicable

***Is PPC Statutory Consultation* Required – Yes**
Food Standards Agency: Consulted 03/12/20. No response received.
Health Board: NHS Lanarkshire consulted 03/12/20. Reconsulted 13/05/21. Response received 22/07/21 with no concerns raised.
Local Auth: Consulted 03/12/20. Reconsulted 13/05/21. Response received 13/05 confirming planning status but no objections.
Scottish Water: Not consulted.
Health and Safety Executive: Not consulted.
Scottish Natural Heritage (PPC Regs consultation): Consulted 03/12/20. Response received 22/12/20 with no concerns raised.
Discretionary Consultation - None
Enhanced SEPA public consultation - None
'*Off-site' Consultation* - None
***Transboundary Consultation* -** None
Public Participation Consultation – To follow
STATEMENT ON THE PUBLIC PARTICIPATION PROCESS **The Pollution Prevention and Control (Public participation)(Scotland) Regulations 2005 requires that SEPA's draft determination of this application be placed on SEPA's website and public register and be subject to 28 days' public consultation. The dates between which this consultation took place, the number of representations received and SEPA's response to these are outlined below.**

Date SEPA notified applicant of draft determination	10 May 2022
Date draft determination placed on SEPA's Website	10 May 2022
Details of any other 'appropriate means' used to advertise the draft	
Date public consultation on draft permit opened	10 May 2022
Date public consultation on draft permit consultation closed	
Number of representations received to the consultation	
Date final determination placed on the SEPA's Website	

Summary of responses and how they were taken into account during the determination:

3 ADMINISTRATIVE DETERMINATIONS
Determination of the Schedule 1 activity
Not applicable here. No change proposed to the Schedule 1 activity.
Determination of the stationary technical unit to be permitted:
Not applicable here. No change proposed to the Stationary Technical unit.
Determination of directly associated activities:
Not applicable here. No change proposed to the directly associated activities.
Determination of 'site boundary'
Not applicable here. Whilst a change to the overall site landform and landfill footprint is proposed, the amended site plan is being addressed as part of a separate partial surrender application.
Officer: **MS**

4 INTRODUCTION AND BACKGROUND

4.1 Historical Background to the activity and variation

The operator has carried out a reviewed Hydrogeological Risk Assessment which concludes that increasing the maximum permitted leachate head from 2m to 8m in phases 8, 9 and 10 (future) of the site, will not result in any increased environmental risk, specifically to surface and groundwaters. As such, an application has been made to allow up to 8m leachate head in these cells.

Amendments to the regime of surface, groundwater and leachate monitoring is also proposed as part of this application, however some of this will be reflected by changes to the management plan rather than the Permit itself (although the proposed changes must still be agreed by SEPA and as such will be assessed as part of this application and will result in the preparation of a revised Management Plan).

Further, the current Permit requires the installation of additional groundwater monitoring boreholes along the eastern and western boundaries of the landfill. The operator has previously attempted to install boreholes along the eastern boundary, but has been physically unable to do so given the very peaty nature of the ground in this location. The operator has applied for this obligation to be removed from the Permit, along with additional conditions which require the groundwater regime to be further mapped and understood, based on data obtained from groundwater monitoring. The operator claims these later requirements have been met and thus are no longer required to be included in the permit.

Note that after further consultation and discussion with SEPA, the operator has committed to attempt to install additional monitoring boreholes as required along the eastern and western boundaries of the site, and some further discussion is likely to be required, outwith the scope of this variation application, as to

appropriate locations. As a result, agreement has been reached between SEPA and the applicant that this requirement will remain.

4.2 Description of activity

Greengairs Landfill is a landfill for non-hazardous waste. In addition to the landfill activities, the Permit also allows for the storage of Incinerator bottom ash for subsequent treatment to produce recycled aggregates, as well as the treatment of leachate in a leachate treatment plant.

Outline details of the Variation applied for

FCC Waste Services (UK) Limited has applied to vary conditions of PPC/W/20041. These changes can be summarised below -

- Modification to the agreed site landform (and final cell layout);
- An increase in maximum permitted leachate levels from 2 metres to 8 metres in phases 8, 9 and 10 of the site landfill;
- Remove the obligation to install additional groundwater monitoring boreholes and revise monitoring schedules for surface and groundwater;
- Proposed upgrades to the waste infrastructure area at the front of the landfill;
- Increase the maximum quantity of IBA which can be stored on the IBA pads from 30,000 tonnes to 46,000 tonnes.

Note that the proposed modification to the agreed site landform and final cell layout does not necessitate a change to any conditions of the Permit, and the modified site plan is being addressed via a separate partial surrender application. Indeed, section 2.2 (Key Technical Aspects) of the Non-Technical summary document provided as part of the application, states that '*this application does not modify the Site Permit boundary, that is subject to separate partial surrender application*'.

Similarly, the upgrades to the waste infrastructure area at the front of the landfill does not necessitate any change to Permit conditions. Thus, this variation application focuses on proposed changes in leachate levels, groundwater, surface water and leachate monitoring regimes, and IBA storage capacity only.

4.3 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

N/A

4.4 Identification of important and sensitive receptors

Given the nature of this application the key receptors are surface and groundwater. As such, the assessment of this application has largely been carried out by SEPA's Water Resources Unit, focusing on the Hydrogeological risk assessment and to ensure that the proposed variations will not result in any unacceptable impact on the environment. It is not considered that any other receptors will be impacted as a result of the proposed variations. The revised Stability Risk assessment, due to the proposed revision in final site landform, has also been assessed by landfill specialists within SEPA's permitting function.

5 KEY ENVIRONMENTAL ISSUES

5.1 Summary of significant environmental impacts

5.2 Implications of the Variation on - Point Sources to Air

Not applicable.

5.3 Implications of the Variation on - Point Source Emissions to Surface Water and Sewer

Not applicable.

5.4 Implications of the Variation on - Point Source Emissions to Groundwater

Due to the nature of the application, consultation was sought with SEPA's Water Resource Unit (WRU), in order to assess the implications of the proposed changes as a result of potential increase in leachate head, the proposal to remove the requirement to install additional groundwater monitoring boreholes, and to amend the monitoring schedules for groundwater and leachate. Consultation was also sought from landfill specialist's in SEPA's permitting function.

A further information request was submitted requiring further information to assist WRU in its assessment of the proposed variations. A response to the further information request was duly received, which has allowed for further assessment to be carried out.

Water Resources have agreed amended monitoring regimes for leachate and groundwater which are reflected in changes to table 11.1.8 and 11.3.1 as further detailed in section 8 below.

It is considered that the variations will not result in any increased risk to groundwater.

5.5 Implications of the Variation on - Fugitive Emissions to Air

Not applicable.

5.6 Implications of the Variation on - Fugitive Emissions to Water

Not applicable.

5.7 Implications of the Variation on – Odour

Not applicable.

5.8 Implications of the Variation on – Management

Not applicable.

5.9 Implications of the Variation on - Raw Materials

Not applicable.

5.10 Implications of the Variation on - Raw Materials Selection

Not applicable.

5.11 Implications of the Variation on - Waste Minimisation Requirements

Not applicable.

5.12 Implications of the Variation on - Water Use

Not applicable.

5.13 Implications of the Variation on - Waste Handling

Not applicable.

5.14 Implications of the Variation on - Waste Recovery or Disposal

Not applicable

5.15 Implications of the Variation on – Energy

Not applicable.

5.16 Implications of the Variation for - Accidents and their Consequences

Not applicable

5.17 Implications of the Variation for – Noise

Not applicable

5.18 Implications of the Variation for – Monitoring

Revised monitoring schedules have been agreed for leachate and groundwater. Amendments to tables 11.1.8 and 11.3.1 have been made, as detailed further in section 8 below, and a revised Management Plan will be derived to reflect further amendments which have been discussed and agreed with SEPA's Water Resources Unit.

5.19 Implications of the Variation for – Closure

The application outlines a revised final landform which is likely due to a downturn in the volumes of waste being landfilled. A stability Risk Assessment was provided as part of the application, which has been assessed and no concerns have been raised, thus no further action is required. The proposed amended final landform does not require any variation to the existing Permit.

5.20 Implications of the Variation for - Site Condition Report (and where relevant the baseline report)

Not applicable

5.21 Implications of the Variation for - Consideration of BAT

Not applicable

6 OTHER LEGISLATION CONSIDERED

Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994

Is there any possibility that the proposal will have any impact on site designated under the above legislation? **No** **Justification:** See consultation response from SNH. No likely impacts identified.
Screening distance(s) used – 5km
Officer: MS

7 ENVIRONMENTAL IMPACT ASSESSMENT AND COMAH
Guidance Notes – The PPC Regulations require that under certain circumstances SEPA take into consideration the information in any statutory Environmental Impact Assessment carried out as part of the planning process or a Safety Report produced under the Control of Major Accident Hazards Regulations.
How has any relevant information obtained or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account? *No*
How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account? **n/a**
Officer: MS

8 DETAILS OF PERMIT
Do you propose placing any non-standard conditions in the Permit - No
Do you propose making changes to existing text, tables or diagrams within the permit? - Yes
Outline of change: ***Condition 4.10.6 – Incinerator Bottom Ash*** Existing condition - *4.10.6 The maximum quantity of Incinerator Bottom Ash waste stored and treated at any given time shall not exceed 30,000 tonnes*. Varied condition – *4.10.6 The maximum quantity of Incinerator Bottom Ash waste stored and treated at any given time shall not exceed 46,000 tonnes.*

Details including justification:

Condition 4.10.1 specifies that the storage and treatment of IBA shall only take place on the containment pads outlined in Appendix 8. Any storage of IBA therefore must be in accordance with this condition. IBA pads are constructed in accordance with approved CQA Plans, and have been included in the updated Hydrogeological Risk Assessment (HRA) to ensure potential impact has been assessed.

In submitting the annual certificates of financial provision as required by the Permit, the operator is confirming that it will be able to discharge its Permit obligations, which will include additional storage of IBA. Thus, it is not considered necessary to carry out any further financial provision checks to cover this proposed permit change.

Condition 6.2.1 – Leachate head

Details including justification:

Existing condition –

A leachate collection and sealing system shall be provided on the base and sides of the Site Landfill. This system shall ensure that leachate accumulation at the base of the Site Landfill is kept below 2 metres depth, with the exception of cells 5A1, 6B and 6D, where leachate accumulation at the base of the Site Landfill shall be kept below 7 metres. This system shall comprise an artificial sealing liner of 2mm HDPE with typical intact permeability of approximately 1 x 10^{-15} m/sec, suitably jointed and protected and a drainage layer of at least 1 x 10^{-2} to 1 x 10^{-4} m/sec and incorporating a network of collection and abstraction pipework.

Proposed condition –

A leachate collection and sealing system designed to minimise leachate accumulation shall be provided on the base and sides of the Site Landfill. This system shall comprise an artificial sealing liner of 2mm HDPE with typical intact permeability of approximately 1 x 10 -15 m/sec, suitably jointed and protected and a drainage layer of at least 1 x 10 -2 to 1 x 10 -4 m/sec and incorporating a network of collection and abstraction pipework.

The leachate collection and sealing system shall ensure that leachate accumulation at the base of the Site Landfill is kept below 2 metres depth, with the exception of the following –

(a) cells 5A1, 6B and 6D, where leachate accumulation at the base of the Site Landfill shall be kept below 7 metres;
(b) phases 8, 9 and 10, where leachate accumulation at the base of the Site Landfill shall be kept below 7 metres.

Justification

The applicant has proposed that the maximum permitted leachate head in phases 8, 9 and 10 of the site be increased from the current maximum of 2m to a maximum of 8m. Note, the operator does seem capable of complying with the existing 2m in existing phases, however has requested an increase to allow for 'operational flexibility'. It should be noted that SEPA has, in a previous variation (VN04), increased the maximum permitted leachate head in cells 5a1, 6b and 6d to 7m.

After resubmission of the landsim model used in support on this request, WRU concludes that

There is no technical justification to disagree to the proposal to rise the leachate head from 2m to 8m in the modelled phase 2 (cells 8b-g, 9a-c) and future phase 3 (cells 9d-h, 10). However, WRU reiterates

that The Landfill (Scotland) Regulation 2003, Schedule 3, point (6) state that '(6) A leachate collection and sealing system to ensure that leachate accumulation at the base of the landfill is kept to a minimum must also be provided in any hazardous or non-hazardous landfill'. The proposed increased levels are not considered 'a minimum' level.

Further consultation was sought from Waste & Industry Permitting Team on this proposed change. Permitting reiterated the point that the change does not appear to align with the requirements of the Landfill Regulations outlined above i.e *to ensure that leachate accumulation at the base of the landfill is kept to a minimum*. Further engagement was recommended with the applicant to better understand what flexibility they need and why, to establish whether we can accommodate an increase some way short of the 8m proposed. It was considered that there may be more scope for a twin control system, with one value representing the operational target, with a higher absolute value, representing a higher chance of environmental impact, of which any breach would be the non-compliance. It should be noted that a similar twin approach has been included in the Permit for Oatslie Landfill (PPC/E/20057), of which FCC is also the permit holder.

Further discussions between SEPA and the applicant about a two-stage approach as outlined above, with a control level of 2m with an absolute maximum of 7m (consistent with cells 5a1, 6b and 6d), failed to reach agreement. A revised condition was drafted which requires that leachate accumulation be minimised, thus respecting the overarching requirements of the Landfill Regulations, whilst setting an absolute maximum of 7m. Consultation with SEPA's National Landfill Regulatory Team confirmed that they would prefer to regulate a condition with a single absolute max rather than a two tier approach. It is considered that this allows SEPA sufficient control via the requirement to minimise, whilst the modelling provides the additional comfort that at 7m the risk to groundwater is considered acceptable.

Condition 6.8.2 – Requirement to install additional groundwater monitoring boreholes

Existing condition –

Groundwater monitoring point(s) require to be installed in the following areas of the installation boundary:-

(a) To the east (up hydraulic gradient) of the eastern boundary of the installation;
(b) To the west and southwest of the western boundary of the installation;
(c) Within the non-filled areas of land to the west of phase 7d.

Proposed condition –

Within 12 months of the date of VN07, the Site Operator shall submit written proposals to SEPA for the installation of additional Groundwater monitoring point(s) in the following areas of the installation boundary:-

(d) To the east (up hydraulic gradient) of the eastern boundary of the installation;
(e) To the west and southwest of the western boundary of the installation;
(f) Within the non-filled areas of land to the west of phase 7d.

Justification –

WRU concluded that, despite the recognised practical difficulties in installing additional boreholes, particularly in the area of peatland immediately to the west of the current landfill area, monitoring boreholes are required in these areas, as the current level of coverage is insufficient to enable the full impact of the landfill on groundwater to be assessed. WRU reiterate therefore that this requirement remains, whether this be a permit requirement or otherwise.

After confirming this position with the applicant, FCC responded to the Further Information request to confirm that they would commit to installing the additional boreholes as required. However, FCC again reiterated the on-site difficulties in installing boreholes in certain areas, and requested that further discussion be undertaken with SEPA to agree locations. It is proposed therefore that the condition remain in the permit unchanged, with further discussion between FCC and SEPA to be undertaken as required.

No change is proposed to the condition other than requiring proposals to be submitted to SEPA to remove the open-ended nature of the condition. SEPA maintains that additional borehole coverage is required in these areas, and the Operator has committed to install boreholes as required.

Conditions 6.8.3 and 6.8.4 – requirement to further categorise groundwater regime

WRU conclude that conditions 6.8.3 and 6.8.4 have been satisfactorily addressed by the HRA which presents a revised groundwater contour plot and LandSim model.

It is proposed therefore to remove both conditions as requested. FCC have subsequently requested the removal of condition 6.8.1, which is linked to 6.8.3 and 6.8.4, on the basis that it has similarly been complied with. WRU have confirmed that the monitoring and characterisation of the groundwater unsaturated zone and groundwater levels has been completed, and as such this condition has been removed.

Conditions 11.1.1 and 11.3.1 – Proposed variations to surface, groundwater and leachate monitoring regime

The applicant has proposed amendments to the monitoring requirements specified in Tables 11.1.8 and 11.3.1 in the Permit based upon updated Hydrogeological risk assessments, and to ensure that data collected is only that which will provide relevant indicator data to assess environmental impact from the site landfill.

After consultation with SEPA's Water Resources Unit, revised tables 11.8.1 11.3.1 have been agreed. The main changes in Table 11.8.1 relate to the parameters and frequency of leachate monitoring. Amendments have been made to both the list of substances and certain trigger levels in Table 11.3.1.

Table 11.1.8

The section relating to leachate monitoring has been amended and replaced with the following –

	Location	Parameters	Frequency (operational)	Frequency (aftercare)
Leachate level	All monitoring boreholes and discharge points	Level, Discharge volume	Quarterly	6-monthly
Leachate composition	Discharge points, boreholes and monitoring points as specified in the Management Plan	pH, EC, Temp, NH4-N, Cl, Ca, MG, Na, K, So4, Alkalinity, COD, phenol TOC, BOD, Fe, Mn, As, Cr, Cu, Ni, Zn, Pd, Cd Mecoprop, Toluene	As specified in the Management Plan.	As specified in the Management Plan.

Justification -

Revised Hydrogeological risk assessments have been carried out and submitted to SEPA in support of the changes outlined in the above tables. Revisions to the list of monitoring parameters and the frequency of monitoring have been agreed in consultation with SEPA's Water Resources Unit. Further amendments to monitoring schedules have been agreed and will be reflected in an updated Management Plan.

Table 11.3.1 - Groundwater monitoring substances and trigger levels

Parameter	Trigger level (mg/l)
Ammoniacal Nitrogen	2.7
Chloride	250
Nickel	0.03
Toluene	0.04
Mecoprop	0.0001
Napthalene	0.0002

Justification -

Substances and trigger levels have been revised after consultation with SEPA's Water Resources Unit. Toluene has replaced Phenol, with mercury and atrazine being removed completely due to not being present in the leachate. The trigger level for Ammoniacal Nitrogen and Nickel has been revised.

9 EMISSION LIMIT VALUES OR EQUIVALENT TECHNICAL PARAMETERS/ MEASURES

Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?

Yes.

Justification:

As well as the changes to conditions 6.2.1 and Tables 11.8.1 and 11.3.1 outlined above, changes to the monitoring regime detailed in the Management Plan have been agreed as part of this variation and a revised Management Plan has been created by the site operator.

10 PEER REVIEW

Has the determination and draft permit been Peer Reviewed? **Yes**

Name of Peer Reviewer and comments made: PL – slight comment relating to wording of condition 6.2.1 but otherwise suitable.

11 FINAL DETERMINATION

Issue of a varied Permit - Based on the information available at the time

Issue a Permit – Based on the information available at the time of the determination SEPA is satisfied that

- The applicant will be the person who will have control over the operation of the installation/mobile plant,
- The applicant will ensure that the installation/mobile plant is operated so as to comply with the conditions of the Permit,
- The applicant is a fit and proper person (specified waste management activities only),
- Planning permission for the activity is in force (specified waste management activities only),
- That the operator is in a position to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.

Officer: Mike Smith

12 REFERENCES AND GUIDANCE

Guidance Notes – Identify key references, guidance (BREF, UK Technical Guidance, etc) used in determination